

# **Real Momentum: Global Public Investors and the Real Assets Market**



in association with



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### **About OMFIF**

The Official Monetary and Financial Institutions Forum is an independent think tank for central banking, economic policy and public investment – a non-lobbying network for best practice in worldwide public-private sector exchanges. At its heart are Global Public Investors – central banks, sovereign funds and public pension funds – with investable assets of \$36tn, equivalent to 45% of world GDP.

With offices in both London and Singapore, OMFIF focuses on global policy and investment themes – particularly in asset management, capital markets and financial supervision/regulation – relating to central banks, sovereign funds, pension funds, regulators and treasuries. OMFIF promotes higher standards, performance-enhancing exchanges between public and private sectors and a better understanding of the world economy, in an atmosphere of mutual trust.

Additional information is available on [www.omfif.org](http://www.omfif.org), or follow us on Twitter @OMFIF

### **About this report**

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**Pooma Kimis**  
Managing Director, OMFIF

## Navigating the evolving real asset market

OMFIF's third partnership with BNY Mellon highlights the role of public investors in providing long-term capital to finance infrastructure and real estate projects. Huge global investment needs to create attractive and diverse opportunities for investing in the real economy, at a time when yields on traditional assets have been affected by central bank actions.

Demographic shifts and industrial evolution are expanding the range of real estate and infrastructure projects, widening the pool of investment products.

Diversifying portfolios requires broadening investment strategies and taking a more innovative approach to asset allocation. This also creates challenges, particularly concerning political uncertainty and tax and regulatory structures in emerging market economies, where investment needs are greatest. Yet, as this report explains, investors and asset managers are adapting to these requirements.

Investments in sustainable real assets that can help mitigate climate change are growing in importance. Infrastructure and real estate projects are particularly relevant. Filling the infrastructure gap, especially in regions most vulnerable to the effects of climate change, must be done in a sustainable way. As long-term investors, pension funds and sovereign funds need to weigh the environmental impact of their investments. Increasingly, this is causing asset managers to adapt their own investment patterns in order to continue attracting capital from this large group of investors.

OMFIF's established role in generating high-level interactions between public investors, regulators, policy-makers and private sector institutions helps provide insight into these important trends. With the largest infrastructure investment needs concentrated in Asia, home to some of the biggest public investment institutions, OMFIF's office in Singapore is at the forefront of these developments.

The growth in real asset investing has been substantial. The future offers even greater potential for institutions that adapt to the changing investment landscape. This report aims to help investors, regulators and policy-makers navigate the evolving market for real assets.



**Meghnad Desai**  
Chairman, OMFIF Advisory Board

## Infrastructure investment is long overdue

Infrastructure projects are emerging as a significant target for investment by sovereign funds and pension funds.

One sure sign of the new interest in infrastructure was Donald Trump's campaign promise that he was willing to borrow large amounts to repair, restore and renew the country's infrastructure, where no large investments have been made since the Eisenhower administration in 1953-61. Congress has granted Trump's request for \$200bn to fix the US's crumbling infrastructure, which he hopes will encourage states and municipalities to leverage the extra funds needed from private sources.

The US is typical of most developed countries, which made a massive effort to restore their infrastructure immediately after the second world war. But in recent decades, greater consideration has been given to balanced budgets and caution about the debt to GDP ratio. Now that there are widespread signs of a sustained recovery and bond yields are still relatively low (though higher than their late 2016 trough), there will be an attempt to invest in infrastructure. This is long overdue.

Add to this the growth in population as well as accelerated urbanisation in developed and developing countries, and it appears that a long-term cycle in infrastructure investment has arrived. China's large investment in infrastructure has been apparent for a while. India, too, has had a significant, though patchy, programme of investment in airports, roads and housing.

Despite the huge demand for infrastructure spending, many public funds are sitting on large sums, looking for opportunities to deploy their money in viable long-term projects. A dearth of suitable financial instruments that can guarantee a steady financial income stream for these investors is affecting their ability to invest in these projects. However, as demand and supply are not too far apart, financial markets should be able to devise effective solutions. Assuming that markets perform their job effectively, large-scale benefits are on hand for investors and recipient countries alike.



**Hani Kablawi**  
Chief Executive Officer of Global Asset Servicing and Chairman of Europe, the Middle East and Africa, BNY Mellon

## Shift into real assets is here to stay

Many of BNY Mellon Asset Servicing's public pension fund and sovereign fund clients, encouraged by the continuing low yield environment, are seeking a wider range of investment opportunities to provide them with stable, inflation-adjusted sources of income.

The movements of these public investors have a profound effect on the broader market, as we have explored in previous reports published in partnership with OMFIF, on the topics of collateral management and liquidity.

OMFIF, with its exclusive network of relationships with central banks, sovereign funds and public pension funds, continues to be the ideal partner with whom we can explore the evolving role and impact of public investors in the global economy. In embarking upon this third joint report, we were keen to understand the dynamics driving sovereign and pension funds' shift towards investment in real assets and gain additional insight into the implications for investors and asset managers.

The shift to real assets confirmed by this survey is significant. Public pension funds and sovereign funds have more than doubled their real estate investments since 2009. Their expansion into infrastructure investment is even more dramatic.

Moreover, this trend appears set to continue, with nearly 70% of survey respondents expecting to increase infrastructure investment – and 45% expecting to increase real estate investment – over the next 12-24 months.

As central banks continue to scale back quantitative easing, thereby causing bond yields to rise, we might expect an increase in the number of real asset investors looking for exits. However, our survey suggests that sovereign funds and public pension funds remain committed to real assets, with some respondents indicating a market downturn would create an opportunity to increase their holdings.

The market for real asset investment is evolving, but what looks certain is that significant levels of investment by sovereign funds and public pension funds into real assets are here to stay.



**Alan Flanagan**  
Managing Director, Global Head of Private Equity and Real Estate Fund Services, BNY Mellon Alternative Investment Services

## All investors are demanding more for less

A powerful convergence of forces is shaping the global infrastructure and real estate markets. Central bank policies, demographic shifts – the growth of the middle class, impact of millennials and urbanisation – and the outperformance of real assets have created a surge of interest and investment from public investors.

As sovereign and public pension funds increase the proportion of real assets in their portfolios, the complexity of their management and administration grows in tandem. Both asset managers and asset owners are creating separate real estate and infrastructure portfolios, increasing their exposure to overseas real assets, getting involved in unlisted and greenfield projects, and targeting larger deals.

Obtaining access to the best deals is not without cost. However, these costs have come under pressure in recent years. Transparency around total expense ratios has become an important component of the selection criteria for sovereign and public pension funds that invest in real assets. Investment managers have had to adapt to a world where the investor is driving the agenda. Competition for allocations has forced price compression. In short, all investors, both public and institutional, are demanding more for less.

The intricacy of real estate and infrastructure transactions – and heightened regulatory and tax pressures – add to the administrative burden, which requires greater expertise from fund managers. These are sophisticated asset classes, and until recently managers questioned whether outsourced service providers had the ability to handle complex transactions.

However, we see significant change on the horizon, as demonstrated by Deutsche Asset Management outsourcing its real estate and infrastructure fund accounting and parts of its reporting functions to BNY Mellon, covering more than \$45bn in assets under administration.

This report provides valuable insights into the evolving role of sovereign and pension fund investors in the real asset market, and how all are adapting to meet their operational challenges.



**Irina Frolova**  
Head of Asset Management  
Infrastructure, PGGM Investment  
Management

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## Building a financial and social return on invested capital

Building and maintaining resilient infrastructure is necessary for the sustainable development of any society. Affordable transport, a reliable supply of electricity and communication, and access to clean drinking water facilitate mobility, productivity and health. Inadequate infrastructure leads to an inability to connect with jobs, information, markets and each other.

More than \$90tn of investment in infrastructure will be required over the next two decades just to keep pace with the deep economic and demographic changes across the globe. At the same time, interest in the asset class and ‘dry powder’ available for investments in real assets has probably never been higher. Yet not all investment needs are suitable opportunities from the pension fund perspective.

Most pension funds have been increasing their allocation to infrastructure and real estate due to the long-term nature of these investments, which is a good match for their own commitments. In addition, some pension funds, such as our biggest client, Pensioenfondsen Zorg en Welzijn, the Dutch public sector healthcare pension fund, recognise the opportunity for making a positive impact. They are directing substantial capital towards investments that have the potential to strengthen the sustainable fabric of society and make a long-term difference.

This OMFIF report provides a valuable contribution to the exchange between the public and private sector. It nurtures a dialogue that aims to achieve a better understanding of their respective needs and to build a problem-solving mindset. Timely and adequate investments in essential infrastructure can sustain rapid technological developments. As more investors are coming to realise, economic viability of projects and the financial return on invested assets go hand in hand with environmental and social sustainability.

# The changing market for real assets and the evolving role of public investors

The market for real assets has evolved rapidly since 2009. This growth has led to increased competition at every stage of the pipeline, pushing up valuations and changing the risk-return characteristics of these projects. In this context, investors are altering the way they approach real assets. The types of projects investors target, the ways they invest and the partnerships they pursue are all changing, requiring them to develop new skills and experience for accessing real assets.

The implications for markets and asset managers are significant. Innovative managers are launching new products and strategies to meet the needs of this large and active group of investors. Asset managers' measures to attract capital from these institutions can help them appeal to other types of investors too. Since the crisis, sovereign funds have pioneered patterns of allocation that have been followed by other types of investors, including hedge funds.

At the same time, global public investors, including central banks, sovereign funds and public pension funds, have emerged as a powerful force in global capital markets, with assets under management of \$36tn, equivalent to 45% of global GDP. These institutions have traditionally been conservative in their investment and regulatory approaches, with heavy allocations to fixed income (particularly government bonds). But pressures on yields in fixed income markets arising from quantitative easing have created challenges for such strategies, introducing incentives for public investors to consider adjusting their allocations and expand into alternative asset classes. This has contributed to their rising importance as participants in the real assets sector.

OMFIF and BNY Mellon have previously published joint reports on the changing role of GPIs after the 2008 financial crisis, exploring their influence on global [collateral](#) and [liquidity](#). This latest report examines how GPIs are integrating real assets into their portfolios at an important inflection point for the market. Through surveys and interviews, this report analyses how the market for real assets – and the role of sovereign funds and public pension funds – are evolving. For investors, asset managers, regulators and other market participants, it provides a valuable perspective on this fast-changing landscape.

## Definition of real assets

Throughout this report, 'real assets' refers to real estate and infrastructure investments, broadly defined. This includes commercial, residential, industrial, energy and other assets. It includes all forms of accessing these assets, including funds, direct and indirect investments and debt and equity, including private equity.

## Definition of global public investors

Global public investors include central banks, sovereign funds and public pension funds with total assets of \$36tn. They have varying aims, ranging from safeguarding the value of reserve assets (central banks) to maximising capital or providing an additional fiscal buffer for governments (sovereign funds) and achieving stable long-term returns to meet future liabilities (pension funds).



Between January and March 2018, OMFIF surveyed and interviewed sovereign funds and public pension funds with almost \$4.6tn in assets under management to gauge their response to changing market conditions and their approach to investing in real assets. These institutions represent 20% of the \$22.9tn held by the 585 largest sovereign and public pension funds globally. Further analysis on the portfolios of a wider group of institutions with more than \$9tn in AUM provided additional information on the change in allocation decisions over the past decade. The report's key findings are listed in the five columns on the right.

### Macroeconomic and demographic forces support the rise of real assets and determine future needs

- Developed economy central banks' prolonged expansionary monetary policy has depressed bond yields, challenging conservative allocation strategies dominated by fixed income and increasing the attractiveness of real assets.
- The synchronised global economic recovery has boosted the real estate market. But concerns over monetary policy normalisation, geopolitical tensions and uncertainty arising from the UK's planned exit from the European Union and protectionist tendencies in key economies could adversely affect different asset types.
- Favourable demographics in emerging markets, particularly those in Asia, are creating strong infrastructure needs and a pipeline of projects in need of funding. The growth of the middle class in these economies is helping support the development of real estate.
- As the global population ages, infrastructure networks have to be reconfigured to serve changing demographic needs. Resources have to be rebalanced as demand shifts between infrastructure types.

### Investors are responding by adjusting their investment strategies

- More than 70% of sovereign funds and public pension funds have increased their allocation to real assets over the last three years. Since 2009, the value of these sovereign funds' and pension funds' holdings of real estate has risen by almost 120%, and their infrastructure investments have risen by 165%.
- Sovereign funds have spearheaded the shift towards real assets. They have higher allocations to real assets overall than pension funds. Their average portfolio contains 8% real estate and 11% infrastructure, against 9% and 2%, respectively, for pension funds.
- These institutions' allocation decisions are increasingly informed by environmental, social and governance considerations, with 86% of respondents saying that they require external managers to consider environmental and sustainable issues in their investments.
- Green bonds are the most popular instruments through which public investors access sustainable assets, with 62% of those who invest in sustainable assets choosing the asset class, compared with 46% opting for green equities.
- Funds' mandates and strategies have adapted to allow them to access a broader range of real assets. Value-add and opportunistic strategies account for a growing share of real asset investments, against a share for core investments of around 50% or less for some institutions.
- Investors have used different means to increase their investments. Most direct investments are in real estate, while investors are more likely to invest in infrastructure via funds, due to regulatory barriers.
- Direct investment is rising, particularly in prime properties in less traditional locations or sectors, as competition for and valuations on core assets have altered risk-return profiles. Investors are wary of private equity, given the build-up of 'dry powder', which stands at almost \$1.8tn, \$300bn of which lies in real estate.



## Investors are planning sustained increases in allocation to real assets

- Both sovereign funds and public pension funds are looking to increase their allocations to real assets in the next 12-24 months.

- Infrastructure is more popular than real estate, with 70% of institutions surveyed planning to increase or significantly increase their infrastructure investments and none planning to decrease, compared with 32% for real estate.

- Extrapolating survey responses to the totality of GPIs leads to very large absolute figures for projected investments. The planned increases could amount to an additional \$334bn investment in real estate and \$130bn in infrastructure over the next two years.

- Pension funds are leading these trends and are now more eager to increase their investments in real assets. Most were slow to begin allocating, while sovereign funds were early, enthusiastic investors. This means that pension funds are starting from a much lower base: for infrastructure, their allocation stands at 2%, compared with 11% for sovereign funds.

- Investors are interested in real assets for the long term and are comfortable with the illiquidity premium of investing in infrastructure and real estate.

- Survey findings indicate that a shift into real assets is here to stay: 82% of investors state that they do not plan to exit any of their real asset investments as monetary policy normalises and yields rise on traditional assets.

- Investors' primary reasons for selecting real assets include portfolio diversification, the prospect of stable, inflation-linked returns and the potential for capital appreciation.

## However, there are obstacles and complexities in accessing these assets

- Investors face many obstacles in accessing enough high-quality real assets. Survey respondents highlighted that regulations, laws and tax structures surrounding real assets, particularly in fast-growing emerging economies, must be adjusted in order to attract institutional investors.

- The same applies to green assets. While there is strong interest among survey respondents for increasing allocation to these assets, particularly those related to real estate and infrastructure, some cited concerns over the complexity required to access them, mirroring trends seen in the responses for the wider real asset sector.

- As valuations have risen, investors are requiring asset managers to adjust fee structures and update their value proposition. Costs associated with accessing real assets are one of the top concerns for investors. Almost 20% of survey respondents highlighted the high costs of real assets as the biggest obstacle to these investments.

- Management fees are a major component of these costs. In investors' perception of handicaps to investment, this factor gained the second-highest share of responses after 'lack of suitable projects', which was the biggest challenge for 40% of respondents.

- In response, asset owners are demanding more transparency and greater information from managers regarding their exposure to underlying assets across a broad range of project types and locations.

## These trends have important implications for fund managers

- The experience of sophisticated asset managers can both help to navigate the complex real asset environment and encourage dialogue between regulators and investors. This could help increase the number of investable real assets in line with growing investment needs over the coming years.

- However, their relationship with asset owners is becoming more demanding as investors continue to pursue cost-saving strategies. Sovereign institutions are increasingly interested in managing their investments internally. Others have negotiated lower performance fees and carried interest paid to asset managers, or abolished them completely.

- However, investors in general still value external managers – particularly those that can offer transparency into the risk exposure of investments, as real assets are more complex than traditional assets.

- To aid transparency, some survey respondents said they had built their own custom-made software that triggers an alert when a particular manager or investment diverges from established parameters.

- Asset managers that are able to track exposure among many different funds, in different types of assets and across locations could be an attractive partner for long-term investors. The combination of transparency, better data and technology offers some fund managers a significant advantage in real assets. ●

# Macroeconomic and demographic forces behind the rise of real assets

Global capital markets have undergone significant shifts since the 2008 financial crisis. Bank intermediation has been disrupted by post-crisis regulations including Basel III, Dodd-Frank, Solvency II and Emir. These regulations raised the cost of capital-intensive activities, reducing banks' deposit-taking and lending activities and making them more active in wholesale and derivatives markets instead. This has contributed to a decline in banks' traditional role of turning savings into long-term capital to finance infrastructure and other projects. OMFIF and BNY Mellon covered this trend in two previous reports, focused on [collateral](#) and [liquidity](#).

A range of institutions stepped in to fill the gap. Sovereign funds and public pension funds have emerged as important providers of long-term capital. Their assets have been growing steadily over recent years and now stand at \$22.9tn, according to OMFIF's *Global Public Investor 2018* report. In the past these funds invested heavily in fixed income, mostly government bonds. However, large-scale central bank bond-buying under

quantitative easing (QE) in the US, Japan, the UK and the euro area, along with a more general structural decline in long-term world interest rates since the crisis, have reduced government bond yields to historically low levels (see *Figure 1.1*). While yields have rebounded somewhat since 2016, the high proportion of government bonds in institutional investors' portfolios has put substantial pressure on their income. This has encouraged them to reduce their bond holdings and search for alternative sources of yield. Equities played an important part in this rebalancing and, given the strong performance of equity markets since 2009, this boosted many public investors' returns.

However, there are risks to stock markets resulting from an unwinding of central bank QE, which could lead to rapid price changes and increased volatility, as seen at the start of 2018. This creates special challenges for institutions charged with pursuing long-term stable returns to meet future liabilities, such as pension funds and some types of sovereign funds. These pressures are compounded by aging populations and slow productivity

growth in advanced economies, which have affected coverage ratios of pension funds. Several years of low oil prices have put additional pressure on oil-dependent sovereign funds, which make up around 60% of this sector's total assets.

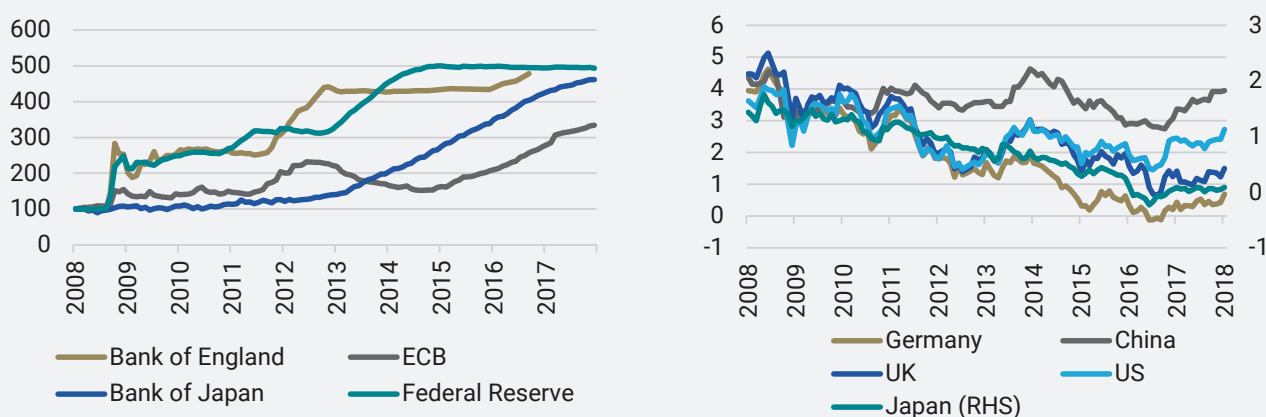
## Public investors diversifying into real assets

This combination of factors has caused institutional investors to diversify into real assets to meet their multiple aims. These assets' ability to provide long-term, inflation-protected returns makes them a useful portfolio addition. Their diversification potential and fairly low correlation to stocks and other assets are useful when markets are in flux. The yields on many of these assets have exceeded those on most traditional assets over five-, 10- and 20-year horizons, while rising valuations have boosted portfolio values (see *Figure 1.2*).

The global financing needs for infrastructure, which are valued by the G20-backed Global Infrastructure Hub at around \$90tn over the next two decades, create the

**Figure 1.1: Central bank policies depress bond yields**

Balance sheets, key central banks, Index: Jan 2008=100 & 10-year government bond yields, selected economies, %



Source: National central banks, Thomson Reuters, OMFIF analysis

potential to match investor demand with project requirements. This is particularly important to help compensate for the lack of bank intermediation and substitute for lower government spending as a result of fiscal constraints.

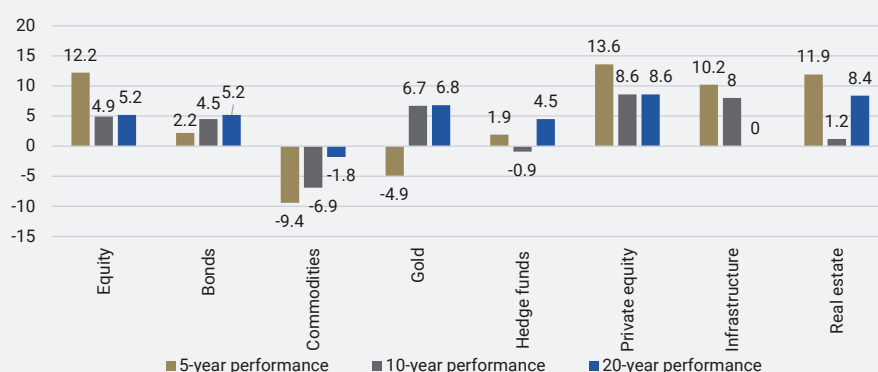
The real estate market has been boosted by the synchronised global economic recovery over the last few years. The prospect of higher inflation increases the attractiveness of real assets, which tend to offer a hedge against rising prices.

However, concerns over the end of QE, geopolitical tensions and the prospect of interest rate increases could make divergence more pronounced across different asset types and regions.

### Strong demographics underpin emerging markets' real estate

The demographic outlook for emerging economies is driving expectations about growth of the real estate market. Strong middle-class growth in Asia Pacific and the Middle East, as well as the rapid expansion of the labour force in Africa and Latin America,

**Figure 1.2: Real assets offer superior returns**  
Annualised returns, %, by asset type and horizon



Source: Bloomberg, Preqin, PwC, OMFIF analysis

are raising demand for both commercial and residential property (see Figure 1.3).

The market is adapting to rapid change brought about by technology and demographics. The growth of ecommerce has affected traditional US retail spaces while opening up new investment prospects related to activities such as warehousing and logistics.

Emerging trends that affect work arrangements are changing the landscape of real estate in urban centres. The rise of start-ups, the technology-enabled outsourcing of many back-office functions and the adoption

of new processes and technologies across various industries demand more flexibility in office space. Co-working spaces represent a forward-looking segment of the market.

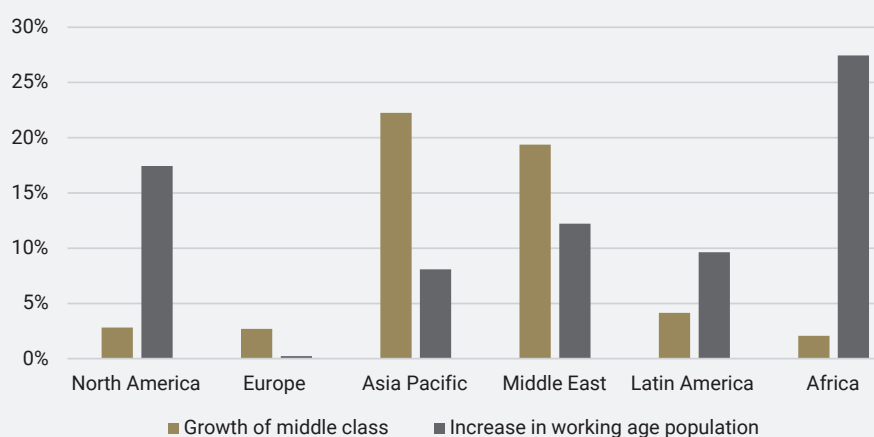
US millennials are changing home ownership patterns. Low wage growth since the crisis and strict mortgage requirements have contributed to increased rental over property ownership. New building developments have focused on made-for-rental properties to appeal to this growing market.



There are risks to stock markets resulting from an unwinding of central bank QE, which could lead to price changes and increased volatility, as seen at the start of 2018. This creates challenges for institutions charged with pursuing long-term stable returns to meet future liabilities, such as pension funds and some types of sovereign funds.

**Figure 1.3: Expanding middle class and working age population will affect real estate demand**

Projected growth by 2025, based on 2015 figures, %



Source: OECD, UN, Brookings Institute, OMFIF analysis

# Key shifts leading GPIs to seek out real assets

Public investment institutions, including central banks, sovereign funds and public pension funds, have emerged as a powerful force in global capital markets. Since the 2008 financial crisis, when their assets were significantly affected by heightened economic uncertainty, low growth and falling prices, they have revised their investment approach and become more resilient to market shocks. Their assets have recovered and stabilised over the last few years and now stand at over \$36tn, equivalent to 45% of global GDP (see Figure 2.1).

Central banks hold \$13.3tn in assets under management, the majority managed conservatively with investments in bonds, cash and gold. Many central banks, along with finance ministries and other organisations, function as regulators for financial institutions including pension funds.

As returns on more conventional assets have fallen in recent years, investment institutions have lobbied regulators to extend the range and type of assets they are allowed to invest in.

## Public investors seek regulatory changes

Norges Bank Investment Management (NBIM), the \$1tn sovereign fund of Norway that also manages the Government Pension Fund Global, has held extensive consultations with the finance ministry in an attempt to gain approval for investments in unlisted infrastructure. This is based on NBIM's assessment that such assets provide 'stable, inflation-adjusted income over a long period', which can 'contribute to better diversification of risk in the fund as a whole'. In April 2018 the finance ministry agreed in principle to allow investment in unlisted renewable energy infrastructure.

The Swedish finance ministry has finalised a series of reforms to the country's national pension buffer funds, which hold combined assets of more than \$200bn. Due to take effect from July 2018, they give the funds greater flexibility to allocate between asset classes. In place of a 5% limit on unlisted assets, they will now be able to invest up to 40% in 'illiquid' assets. The minimum

allocation to top-rated fixed income products has been reduced to 20%, from 30% of the total portfolio. According to AP2, one of the top Swedish public funds, this will help the funds 'maintain the return levels they have achieved historically, which would become increasingly difficult under the current regulations'.

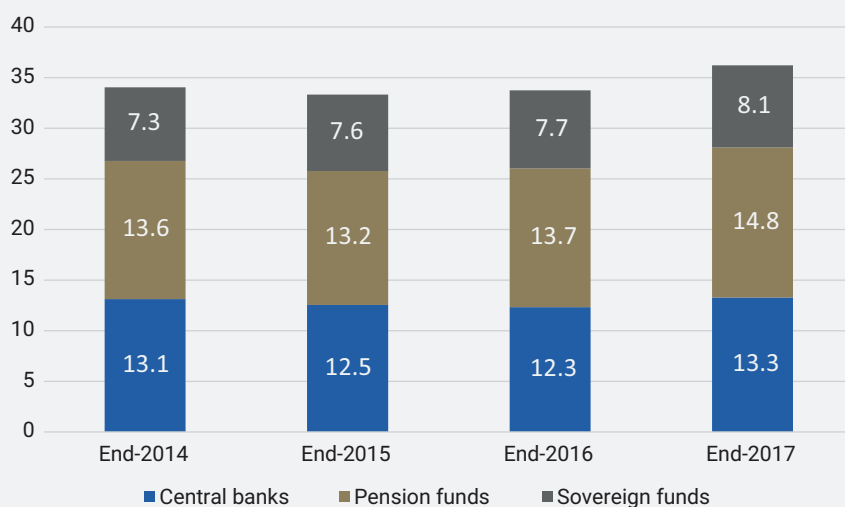
The funds are continuing to lobby the finance ministry to increase their share of real estate investments, which are to be included within the 40% ceiling for illiquids. Before the reforms, real estate investments were not subject to a maximum share. Unlisted direct investments are also not included within the new asset classes, which limits the funds' ability to co-invest in consortia and infrastructure companies. According to AP4, such investments 'are more cost-effective than just investing indirectly in funds'.

## Challenges facing pension and sovereign funds

Public pension and sovereign funds have a combined \$22.9tn in assets under management, and their mandates range from fairly conservative to highly flexible. From this group of institutions, OMFIF surveyed investors with almost \$4.6tn under management, or more than 20% of the total (see Figure 2.2). This large sample size and the inclusion of institutions of different dimensions, with different mandates and from different regions, make the sample broadly representative of the wider sovereign and public pension fund sector.

Although each institution has a different purpose and faces different restrictions, they all face similar challenges, including low yields partly caused by central bank policies, changing demographic trends and other macroeconomic factors. This has resulted in a marked shift in their allocation patterns over time. Some, particularly Canadian and Australian pension funds and some Asian sovereign funds, have been trailblazers in investing in new assets to which other institutions then move, making their

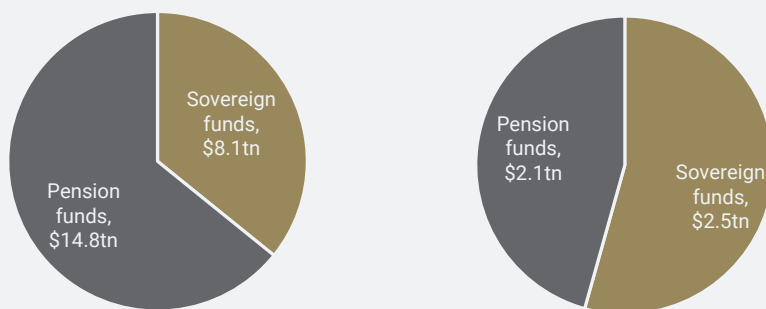
**Figure 2.1: GPI assets have stabilised since crisis**  
Assets under management, \$tn, by institution type



Source: OMFIF Global Public Investor 2018

**Figure 2.2: Survey covers 20% of sovereign and pension funds**

Total sovereign funds' and public pension funds' assets, and assets of surveyed institutions, \$tn



Source: OMFIF analysis

investment patterns highly relevant to other market participants.

The portfolios of public pension funds remain heavily allocated to fixed income, particularly government bonds. The share of fixed income in the total portfolio averages 38% for pension funds, compared to 25% for sovereign funds (see Figure 2.3). The higher share among pension funds reflects their more conservative mandates and their need to ensure stable long-term returns. Many sovereign funds, by contrast, are tasked with maximising capital and are able to tolerate more risk, allowing them to dedicate a higher allocation to equities and alternative investments.

Pressure on yields in fixed income markets arising from quantitative easing has hit

pension funds particularly hard. To achieve growth in their total assets, some have either had to add to their asset base, sometimes using funds from national treasuries or other public sector sources, or widen the number of public sector workers served by the fund. In the US, the \$600bn Military Retirement Fund, the largest public pension fund in North America, receives most of its funding from the Treasury to amortise unfunded liabilities and pay the normal cost of the concurrent receipt benefits. US military pensions are being expanded to cover personnel who retire before they have completed 20 years of service. This will increase the size of the fund's asset base. Previously only career military personnel with over 20 years of service were covered.

More generally, many pension funds have

been reducing their liabilities by limiting access to or closing defined benefit schemes to new members. Underfunded pension funds are a huge problem. UK public sector defined benefit plans, including the Local Government Pension Scheme, have unfunded liabilities of more than \$1.7tn.

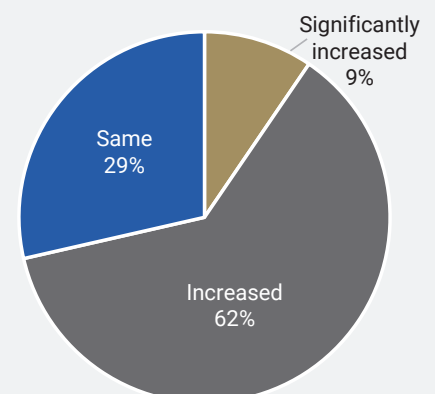
### Sovereign and pension funds' shift to real assets

Sovereign funds have a higher allocation to equities, at 40% of the total portfolio, against 35% for pension funds. Within alternative asset classes, pension funds have been slower to increase their investments than sovereign funds, which have more flexible mandates. According to survey responses, pension funds have allocated just 2% to infrastructure, against 11% for sovereign funds.

The share of real estate and infrastructure investments by both types of institution has grown rapidly. Of the institutions surveyed, 72% increased or significantly increased their allocation to real estate and infrastructure over the last three years. None reduced their

**Figure 2.4: Majority of funds have boosted allocation to real assets**

'How has your allocation to real assets changed over the last three years?', share of total responses



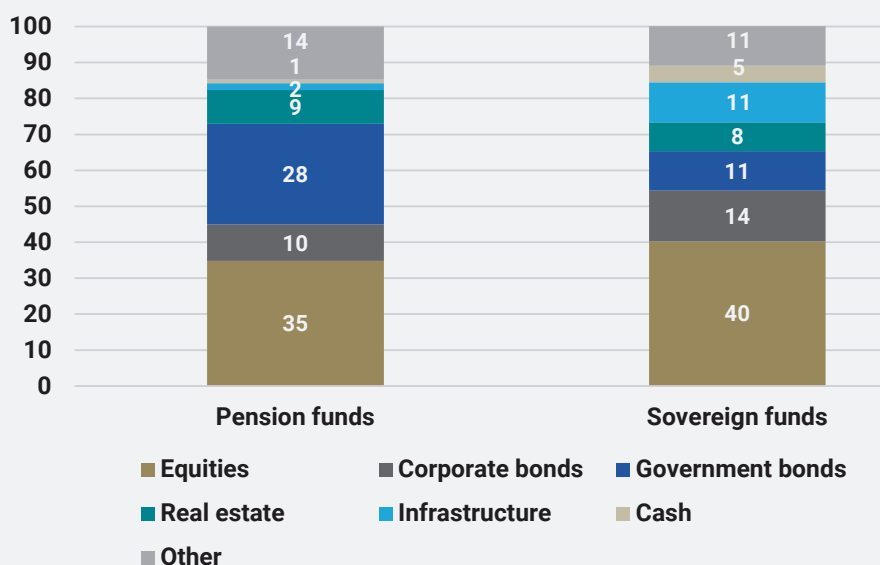
Source: OMFIF analysis

holdings (see Figure 2.4).

This is true across the pension fund and sovereign fund sector. Based on analysis of the portfolios of a wider range of institutions with more than \$9tn assets under management, sovereign funds and public pension funds' combined share of real estate and infrastructure investments rose dramatically between 2009 and 2017. Real estate grew by nearly 120%, to \$637bn from \$292bn, while infrastructure grew by 165%, to \$225bn from \$85bn.

**Figure 2.3: GPIs heavily allocated to fixed income**

Comparison of pension and sovereign fund allocations, % of total portfolio



Source: OMFIF analysis

# Public investors boost demand for green assets

**S**overeign funds and public pension funds are adapting their investment strategies to the presence of environmental risks and their impact on the economic and financial returns they are mandated to safeguard.

The emergence of green finance options has allowed public investors to increase their allocations to real assets. They have become significant participants in this market over the last few years. The majority of their green asset investments are in real assets such as green infrastructure, energy-efficient real estate, renewable energy production, clean transportation and water and waste projects.

The most popular use for proceeds from green bonds (itself the most common green asset among public investors) is renewable energy projects. At \$51bn, in 2017 they represented a third of the total, closely followed by low-carbon buildings and energy efficiency at \$45bn. Clean transport and sustainable water management jointly added another \$45bn, with smaller shares going to sustainable waste management (\$6bn), sustainable land use and forestry (\$5bn) and adaptation strategies (\$4bn) (see Figure 2.5).

Several public pension funds have committed to increasing their green investments, including Japan's Government

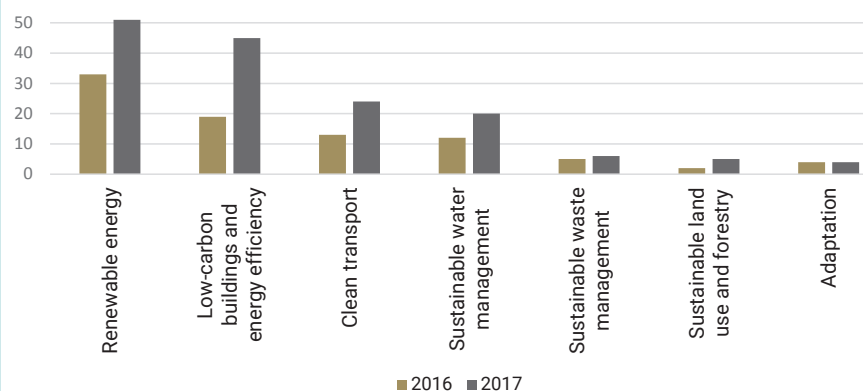
Pension Investment Fund, CalSTRS and the New York State Common Retirement Fund in the US, Sweden's AP funds, Dutch ABP, France's Ircantec and Australia Local Government Super.

Sovereign funds have also come under pressure to diversify into the green finance realm in the light of weak oil price growth over recent years. African sovereign funds from Senegal, Nigeria and Morocco are supporting green infrastructure initiatives such as solar panel farms and clean energy and water projects. In the Middle East, Mubadala and the Abu Dhabi Investment Authority are some of the biggest investors in renewable energy and green infrastructure among sovereign funds globally. In Europe, NBIM has a mandate to invest Nok30bn- Nok60bn (around \$4bn-\$8bn) in 'environment-related investments', while Asian sovereign funds such as China's State Administration of Foreign Exchange and the Hong Kong Monetary Authority's Exchange Fund are leading in terms of green debt funding.

While NBIM is an exception and few institutions have formally set targets, our survey findings show that environmental, social and governance issues are important concerns for many. The vast majority of respondents (76%) said they invest in green or sustainable assets (see Figure 2.6).

**Figure 2.5: Renewables and real estate dominate use of green bond proceeds**

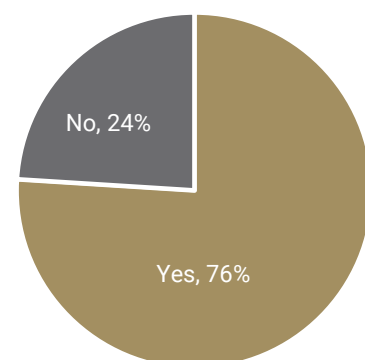
Use of green bond proceeds, by project type, \$bn



Source: Climate Bonds Initiative, OMFIF analysis

**Figure 2.6: Three-quarters of respondents invest in green assets**

'Do you invest in green or sustainable assets?', share of responses



Source: OMFIF analysis



Despite these developments and such rapid growth, the green finance market remains a minuscule part of the overall asset universe. Total outstanding green bond issuance stood at \$221bn worldwide at the end of 2017, according to the Climate Bonds Initiative, amid the broader category of 'climate-aligned' bonds valued at \$895bn. This compares to more than \$100tn for the total fixed income sector.

But sustainable investments are gaining prominence among portfolios. Sovereign funds and public pension funds responding to our survey said that a staggering 61% of their overall fund investments are allocated to sustainable funds, with the equivalent figure at 49% for equities and 46% for bonds (see Figure 2.7). A few respondents said 'all investments are sustainable' and made 'according to ESG principles'. However, some admitted that 'the definition of sustainable investments is ambiguous'. It should not be inferred from the results that respondents who said 100% of their bonds are allocated to sustainable investments only invest in green bonds, for example. Different funds interpret 'sustainability' in different ways.

The shift to green assets is also reflected in the ways asset owners are interacting with external managers.

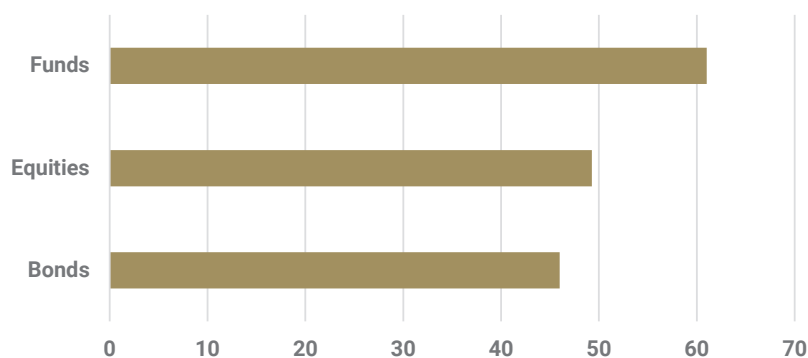
“The emergence of green finance options has allowed sovereign funds and public pension funds to increase their allocations to real assets such as green infrastructure, energy-efficient real estate, renewable energy production, clean transportation and water and waste projects.

Out of the subset of asset owners whose portfolios are managed externally, 86% of respondents to our survey said they require external managers to consider environmental and sustainable issues in their investments (see Figure 2.8). This includes NBIM, which requires its assets under external management to follow five mandates for environment-related investments.

At the same time, 73% of public investors surveyed stated that green issues play an important role in informing their real asset investments specifically, while the remaining 27% deemed them as 'somewhat important'. No investors thought they were 'not important'. ●

**Figure 2.7: Investors allocate heavily to sustainable investments**

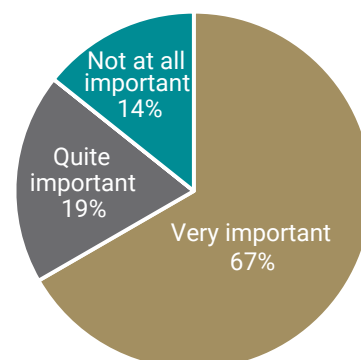
'What % of your total bond, equity, fund and other portfolios are allocated to sustainable investments?', average of responses



Source: OMFIF analysis

**Figure 2.8: Environmental sustainability concerns important requirement for external managers**

'Do you require your external managers to consider environmental and sustainable issues in their investments? How important is this requirement?', share of responses



Source: OMFIF analysis



## Fund mandate and regulatory changes facilitate real asset investments

Public investors' significant shift into real assets, including green assets, has been motivated, above all, by the diversification qualities, higher yields and long-term income prospects of these assets relative to other investments. Survey respondents highlighted these as their top three reasons for investing in real estate and infrastructure projects (see Figure 2.9).

To facilitate the rebalancing of portfolios to alternative investments, a number of regulatory and fund mandate changes have occurred over the last few years. According to discussions with survey respondents, the biggest changes include:

- **An increase in the target share of real assets within the total portfolio.** The average real estate target for sovereign and public pension funds is between 12% and 13% of the total portfolio and infrastructure is around 9%. This is up from 9% and 6% respectively in 2009.
- **Many funds have created separate real estate and infrastructure portfolios with defined target allocations.** This has allowed funds to access real assets using a wider range of investment options. Previously these assets were part of the equity or bond portfolio.
- **Many fund mandates have increased the number of foreign real assets** allowed in the portfolio. This is particularly important in less

developed regions, including Africa and Latin America, where institutions have historically been limited to investing in domestic assets. The high risk attached to such projects meant many institutions refrained from investing in domestic real assets. Institutions whose fund mandates have been updated to allow them to invest in foreign real assets, such as the Government Pension Fund of Thailand, are now planning to increase their investment in real assets.

• **The growing range of real asset options brings new considerations.** Funds have more options, including unlisted and greenfield projects, and a wider range of real estate and infrastructure funds from which to choose. These new types of projects have potentially higher returns but also entail exposure to different risks that these institutions must manage. This has led to a greater focus on risk management capabilities as well as a demand for greater information and transparency from asset managers and general partners regarding factors such as underlying exposures and correlations of these assets.

• **The target share of investment in private real assets** has increased, with some funds now targeting 100%. This is driven by a number of factors, including diversification, higher yields and lower volatility than listed public assets. Some investors are attempting to access a wider range of assets and to specialise in non-prime real estate and other niche investments. Rising valuations on

conventional real assets in recent years has made access more difficult. Investors' focus on a wider range of projects allows them to continue allocating to real assets despite rising competition in some markets.

• This reflects a change in the way investors access real assets. Increasingly, sovereign and pension funds are targeting **larger and more complex deals** and collaborating with limited partners to reach deals of sufficient scale. Some funds are managing more of their assets internally to save costs and increase their control.

• **The role of real assets in funds' strategies and portfolios is evolving.** Real assets are no longer solely or primarily viewed as part of a core or core-plus strategy; projects are pursued according to value-add and opportunistic strategies. This is shifting the function of these assets in the total portfolio and is affecting the types of assets investors are pursuing and the way they access them.

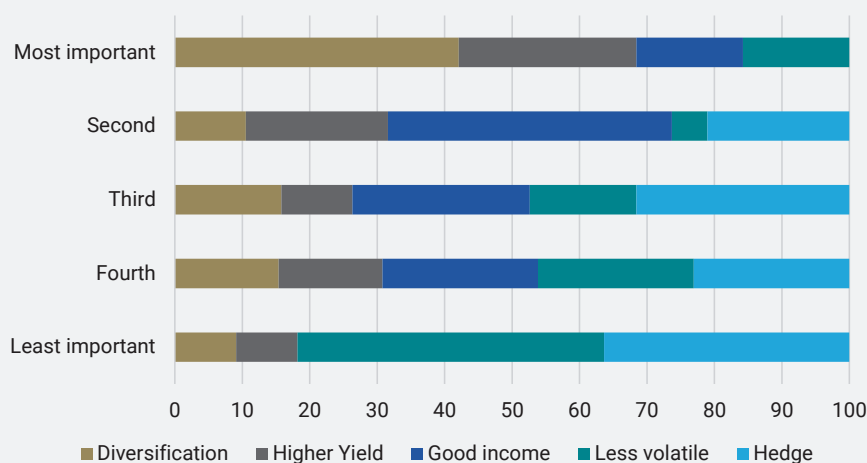
## Evolving patterns of real asset investment

During the euro crisis, a number of sovereign funds, led by Asian and Middle Eastern investors, rapidly increased their purchases of prime real estate in key European cities where valuations had been hit by recession, low bank lending and capital outflows. Sovereign funds' annual investment in prime real estate grew to \$6.2bn in 2012 and more than \$10bn per year in 2013 and 2014, much of it in Europe. Investment in real estate was less than \$1bn in 2010 (see Figures 2.10 and 2.11).

More recently, the European economic recovery, combined with fierce competition from other investors, led to substantial rises in valuations on these prime assets, making their risk-return profile less attractive and encouraging investors to pursue previously overlooked sectors. In 2017, sovereign funds committed just over \$2bn to prime real estate globally, representing only 12% of all sovereign fund real estate investment that year. This is in contrast to an average of almost 45% between 2011 and 2014 (see Figure 2.11).

The fastest-growing sectors have been development projects and industrial and logistics assets. Often these are outside the large urban areas with which investors are comfortable, and they require additional knowledge and skills to identify good prospects, undertake necessary due diligence and (in the case of development projects) add

**Figure 2.9: Real assets boosted by diversification and search for yield**  
'How important are the following as motivations for investing in real assets?', share of total responses



Source: OMFIF analysis

value to the underlying asset.

Many of these projects are much larger than traditional prime real estate assets, requiring investors to pursue partnerships to secure the necessary funds. While this has helped from a risk-sharing perspective, it also requires a new approach to project management, access and costs.

### Concentration risks

As the value of individual projects has risen, the concentration risk of real estate investments within portfolios has grown. The larger size of individual real estate investments has resulted in a falling number of deals. The number of real estate deals by sovereign funds fell to 18,400 in 2017 from a high of more than 36,600 in 2015, 20% below the five-year average (see Figure 2.12). Should this trend continue, the risks to overall portfolio valuations from changes in a small number of large investments could be substantial.

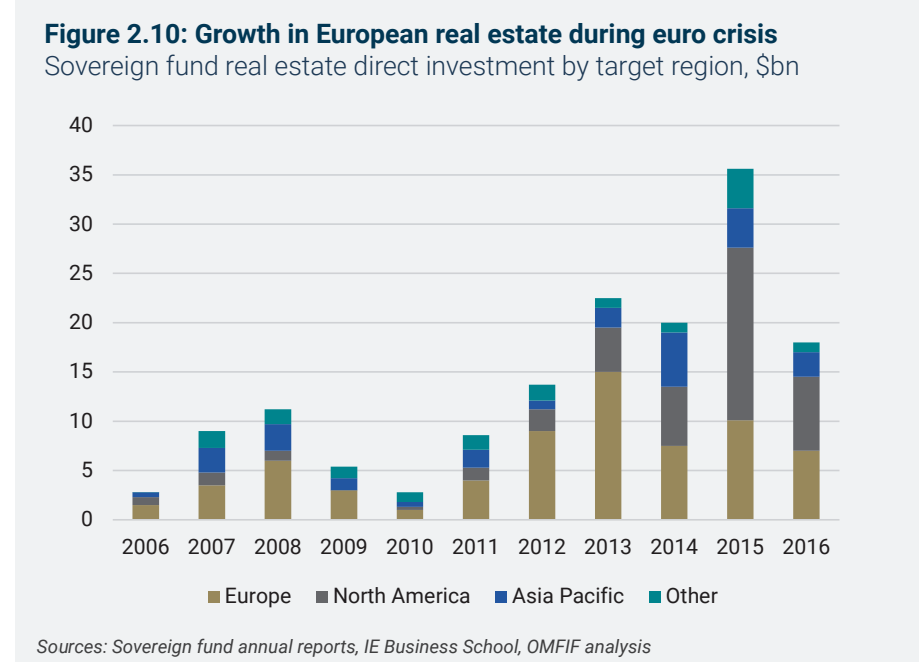
Large institutions with experience investing in real estate projects have been more active. Such investors tend to have the expertise to evaluate projects and to commit large amounts of capital for long periods. These funds think investing in smaller projects is unlikely to have a noticeable impact on returns. It is therefore harder to justify when valuations are rising.

In late 2017, the chief executive of NBIM highlighted concerns that real estate was unable to make a difference to investment returns unless the market value of assets in the policy portfolio (mostly equities and bonds) was decreasing in value. This contributed to NBIM's decision to remove real estate from its benchmark index in 2017, although it remains part of the investment mix, with an upper limit of 7%.

For smaller investors, accessing large projects is more difficult and the concentration risk can be more pronounced. However, smaller funds are becoming more active in these types of assets, as shown by their growing use of partnerships and co-investments in a competitive market for prime real estate.

### GPIs diversifying investment location

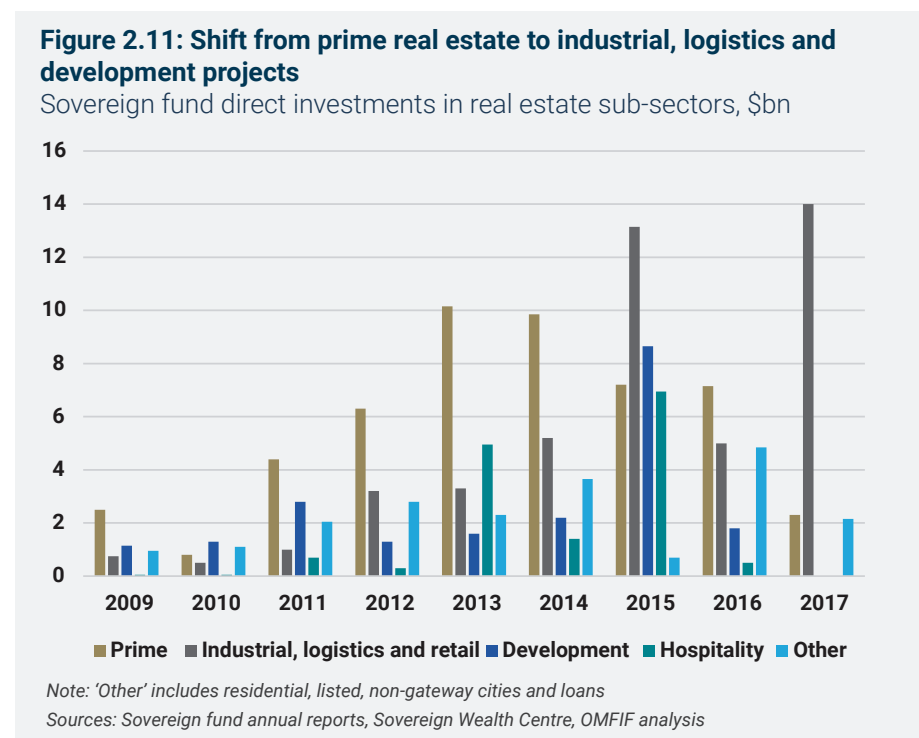
Real estate and infrastructure in investor portfolios are usually expected to provide stable, long-term, inflation-linked returns and price appreciation over time. This means most investors have traditionally sought prime real estate assets in core



locations, typically capital cities or other large urban agglomerations with strong economic growth prospects and high inward migration of skilled workers. This created a fairly small pool of attractive locations for these investments, contributing to the concentration of real estate assets in a number of 'global cities'.

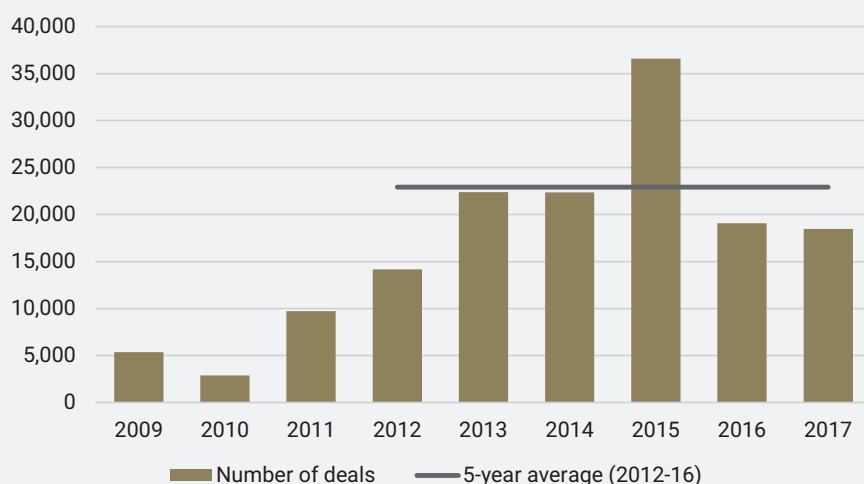
The largest share of investment in real assets is in Europe, followed by North America, reflecting the more accommodative

investment environment in these regions (see Figure 2.13). Given the high upfront costs and long pay-out horizon, regulatory stability and transparency are important considerations for investors. Political risk is also more important for these assets than for traditional stocks and equities, leaving a smaller number of attractive countries to invest in. This helps to explain why, although Asian investors hold 28% of all sovereign and public pension fund assets, the share of investment in emerging



**Figure 2.12: Fewer deals as project size increases**

Number of sovereign funds investment in real estate projects, by year



Sources: Sovereign fund annual reports, Sovereign Wealth Center, OMFIF analysis

Asian markets has, until recently, been relatively low, with assets in the advanced economies offering more attractive prospects. A large portion of investment in Asian real estate is located in Australia and developed East Asian countries.

However, investors have been expanding the locations of their assets. Emerging economies and high-growth regions are attracting a larger share of investment, though they are starting from a small base and remain constrained by regulatory and legal barriers.

Africa's real estate investment mostly reflects domestic investment by local institutions, many of which are required to allocate 100% of their real estate and infrastructure portfolio to domestic assets. Demand from foreigners has been limited, although Chinese investors have shown increased interest in ports and other vital infrastructure in recent years.

The high share of real estate investment in Europe, by contrast, reflects the common practice among European institutions of investing across the continent rather than just in their home economies, creating a larger pool of available assets in this region relative to other areas. Europe is the main foreign destination for North American funds investing outside their home market.

Almost 70% of all global real asset investment is domestic rather than foreign, and Europe and North America have some of the largest pension and sovereign fund assets

(see Figures 2.13 and 2.14). European funds hold around 20% of all pension and sovereign fund assets under management and North America holds 36%. African funds account for just 1.5% of the total and Latin America-Caribbean 2.5%, while Middle Eastern funds hold 13%.

Funds from Europe and North America have become more accommodative, on average, towards real assets and other

alternative investments than their peers in Africa or emerging Asia. Canadian and Australian pension funds were among the first institutions to create dedicated real estate and infrastructure portfolios, with European and US funds quick to follow. These funds have increased their target allocations over time, giving them significant experience in this area.

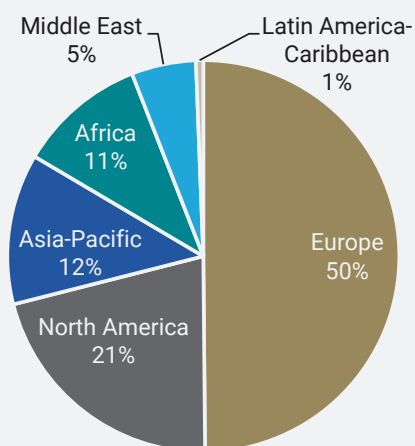
### Regulatory progress boosts investment

The concentration of real asset investment in developed markets creates contradictions. Over the years, it has resulted in capital from investors in developing regions being used to finance projects in rich, developed regions rather than at home, where the need is often greatest. Competition for attractive projects drove valuations in prime locations to excessive levels, while the huge infrastructure and real estate investment gap in developing economies remains unmet. Investors seeking long-term returns shun regions where economic and population growth are expected to exceed developed world averages and where yields are highest, preferring projects with lower yields and slower growth.

Addressing this imbalance requires a concerted push by authorities in less-developed regions to attract institutional investors. This depends, above all, on regulatory, legal and tax reform to increase the number of bankable projects that meet investors' risk-return criteria. This is a

**Figure 2.13: Real asset allocation dominated by Europe and North America**

Allocation by region, % of real asset portfolio



Source: OMFIF analysis

daunting task. While foreign investors may be excused for being unwilling to take the additional risk of investing in emerging markets, there are many developing countries where local investors have also shunned domestic assets. Uganda provides a salutary case study. Regulations on pension funds in Uganda allow these investors to allocate up to 30% of their assets to real estate, with the provision that all real estate investment, apart from real estate investment trusts, must be made within Uganda.

However, ‘high risk and poor returns’ associated with these assets mean investors have been unwilling to allocate to them, according to the main regulatory body in Uganda. As a result, only one fund, the National Social Security Fund, invests in real estate, and only then because it holds excess funds that cannot be taken up by government securities or local equities, given the small size of the domestic market.

Improving the investment environment in emerging countries, including market transparency, risk management and regulatory stability is a necessary condition for foreign investors to consider these investments.

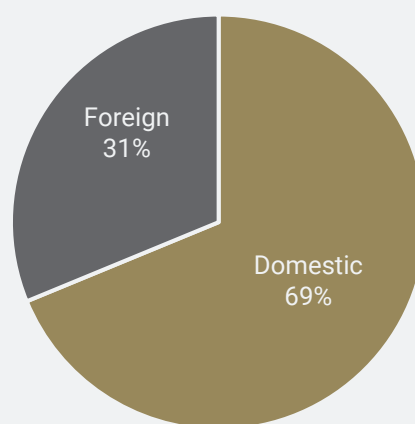
The greatest development in recent years has been in Asia. Sovereign funds’ total investment in infrastructure in the region exceeded \$10bn between 2015 and 2016, compared to around \$3bn between 2009 and 2013 (see Figure 2.15). This is partly the result of local funds increasing the share of real assets allowed in their portfolios. In an important move, the GPIF of Japan, the world’s largest public pension fund, with over \$1.4tn in AUM, authorised a dedicated alternative portfolio targeting 5% for real estate, infrastructure and private equity in late 2014 — the first time it had targeted these assets. It has been slow to implement its strategy, however, with real estate making up

around 0.1% of the total portfolio.

These regulatory developments have coincided, since around 2013, with Asian public investors, led by China, withdrawing capital from low-yielding US government bonds and other traditional investments and reallocating them to more productive investments closer to home. Between 2012 and 2016, China increased its outward direct

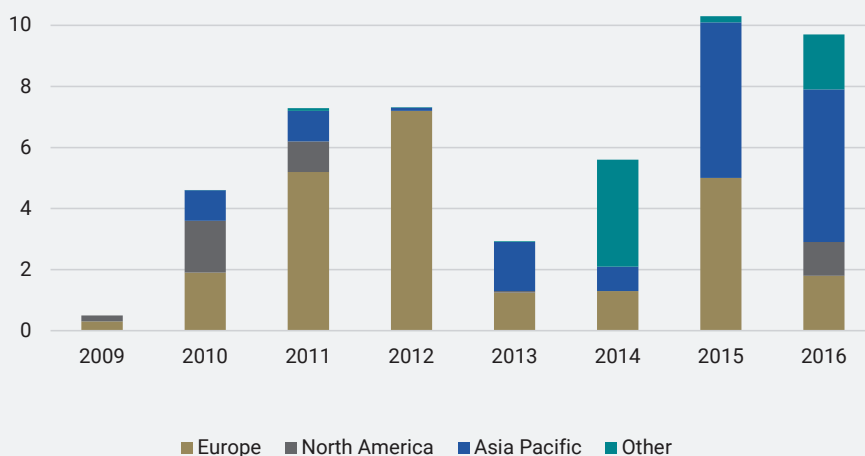
investments, including in infrastructure and real estate, by 117% or \$814bn, compared to just \$631bn between 2006 and 2012. A significant portion of these funds helped to finance infrastructure investment on the Belt and Road initiative and other projects throughout Asia.

**Figure 2.14: Almost 70% of real asset investments are domestic**  
Location of investment, % of real asset portfolio



Source: OMFIF analysis

**Figure 2.15: Rising share of investment in Asian infrastructure**  
Sovereign fund infrastructure direct investments by target region, \$bn



Sources: Sovereign fund annual reports, IE Business School, OMFIF analysis

“The concentration of real asset investment in developed markets has resulted in capital from investors in developing regions being used to finance projects in rich, developed regions rather than at home.

# Projected needs and investments, by region and sector

According to survey respondents, the trend for increased investment in real assets will continue. Almost 70% of respondents are planning to increase (by up to 3%) or significantly increase (3%-6%) their infrastructure investments over the next 12-24 months. None are planning to reduce their investments. This is the highest figure for all asset categories (see Figure 3.1).

Real estate is the next most popular asset class, with around 45% of respondents planning to increase or significantly increase their allocation. Twelve percent of respondents indicated they plan to reduce (by up to 3%) their allocation to these assets. Decreases are largely driven by institutions that were early investors in real estate and are now selling their assets to take advantage of elevated valuations.

One large Australian fund noted, 'We continue to encourage our managers and partners to sell assets to take advantage of the positive market conditions. This is demonstrated by the successful sale of assets

in the UK, Europe, US and Australia over the year, at prices mostly above our valuations.' A large US pension fund reports that, over the last three years, it 'has been a net seller of commercial assets, taking advantage of elevated prices. Asset appreciation for the remaining holdings has kept the portfolio at target levels.'

The average infrastructure share within the total portfolio of sovereign and pension funds, according to survey respondents, is currently just under 7%, with a much higher allocation by sovereign funds (11%) than pension funds (2%). The current share of real estate is just under 9% on average, with a roughly equal split between sovereign and pension funds.

Pension funds are the keenest on increasing their investments in real assets. Taking survey responses as broadly representative of the public pension fund and sovereign fund sector, this could amount to an additional \$334bn investment in real estate and \$130bn in infrastructure over the next two years.

However, as explained in chapter 4, investors face many obstacles in accessing real assets in the quantities they desire.

## Huge global infrastructure needs

Investors' high demand for real assets is matched by high financing needs, especially for vital infrastructure in fast-growing economies. These needs are valued at more than \$90tn globally over the next two decades by the G20-backed Global Infrastructure Hub.

In Asia, lack of infrastructure spending after the financial crisis of 1997-98 has contributed to a large funding gap of \$50.4tn to 2040, more than half the global need (see Figure 3.2). Emerging economies in the region need physical capital to spur and sustain economic growth and meet aspirations for higher living standards.

Aging infrastructure in North America and Europe requires large-scale investment. In particular, transport systems and high-speed communications need to be updated, while infrastructure related to energy efficiency, transmission and climate change adaptation is necessary. The combined infrastructure needs of these two regions are over 30% of the total.

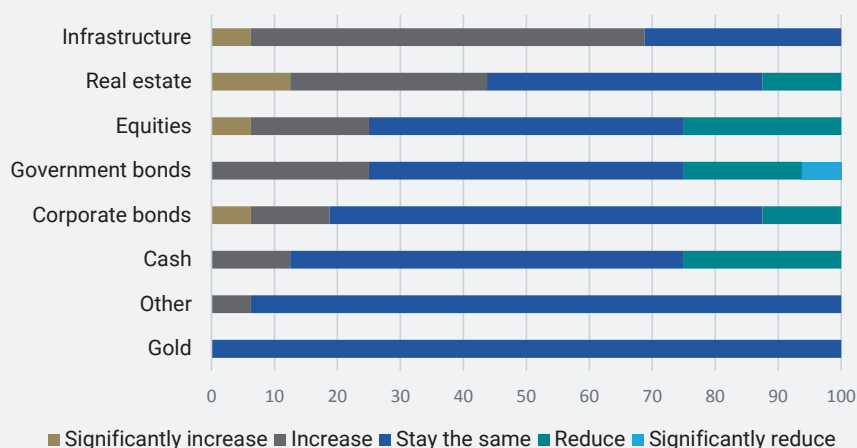
## Regulatory developments offer new investment prospects

In the US, President Donald Trump promised to ramp up spending to repair and modernise infrastructure in the country, and after a year in office he has now unveiled a \$1.5tn expenditure plan. Only \$200bn of this will be sourced from the federal budget. The rest is dependent on states and municipalities raising funds from their own budgets or from private investors.

In Europe, Germany is a favourable infrastructure market because of the government's commitment to spend €270bn (\$331bn) on transport infrastructure until 2030. The Netherlands' well-established public-private partnership (PPP) programme and extensive pipeline of projects make it an attractive location. The UK's departure

**Figure 3.1: Infrastructure and real estate are most attractive assets for investors**

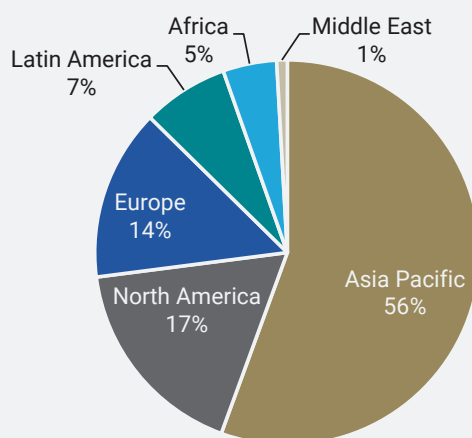
'How do you plan to change your level of investment in the following assets over the next 12-24 months?', share of responses



Source: OMFIF analysis

“The high demand for real assets by investors is matched by high financing needs, especially for vital infrastructure in fast-growing economies.

**Figure 3.2: Over half of global infrastructure needs are in Asia**  
Regional share of infrastructure needs from 2018-40, %



Source: Global Infrastructure Hub, OMFIF analysis

from the European Union presents significant uncertainty for long-term investors seeking new projects, although over the last decade it has been home to some of the largest rail, road and port projects in Europe.

The Czech Republic and Romania are ramping up transport projects, buoyed by support from the European Investment Bank.

Institutional challenges, including regulations, oversight and taxes, affect the attractiveness of investment across developing economies, but these are

changing. Parts of Africa are already benefiting from China's ambitious Belt and Road initiative. Last year, the \$3.2bn Mombasa-Nairobi railway began ferrying passengers and cargo between the port city and Kenya's capital.

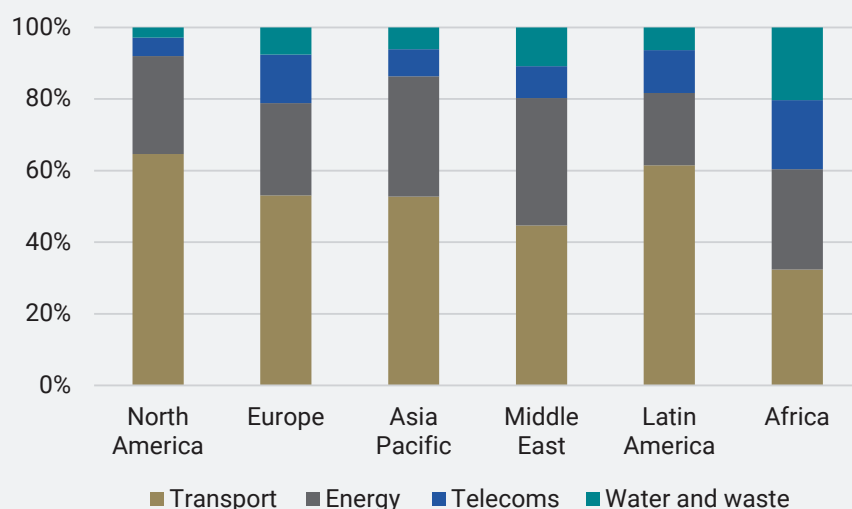
Support from multilateral agencies bolster the region's prospects. The World Bank is investing \$57bn in sub-Saharan Africa mainly to fund basic social services, but portions are earmarked for infrastructure projects and institutional reforms.

The Middle East is seeking private investment by enhancing the regulatory environment for financing projects. Dubai enacted a PPP law in 2015 that allows companies to propose infrastructure projects. Rather than wait for public sector initiatives, investors can take the lead in promoting infrastructure projects and utilise their own resources and expertise to drive innovation. Kuwait expanded its own PPP law the year before, creating a framework that puts foreign investors on the same footing as local companies.

Latin America is the exception from the upswing among emerging economies. Slow growth and fiscal limitations have resulted in lower public expenditure, and infrastructure has suffered. There is room for private capital to step in, but unlike Asia Pacific and the Middle East, the region has yet to establish institutional incentives that can enhance project viability. The experience of contractors renegotiating PPP contracts after they have been signed, in order to raise their profits, has added to the costs of these projects.

**Figure 3.3 Transportation and energy require largest share of investments**

Projected investment needs by sector, 2018-40



Source: Global Infrastructure Hub, OMFIF analysis

### Transport dominates infrastructure investment needs

Across all regions, transport requires the biggest investment over the next two decades. Nearly \$40tn will be required to build roads, railways, airports and ports (see Figure 3.3).

Two-thirds of the investment needed for the sector are for building new roads and maintaining existing ones. Public investment remains the most appropriate source of funding for infrastructure that tends to have



low commercial value but high social impact, such as roads and bridges in rural areas. Longer highways, especially those connecting goods to market, have greater commercial potential that can be realised from toll concessions and real estate development in adjacent areas, and are more attractive targets for private investors. Rail also requires substantial investment, particularly in emerging economies and Europe.

Latin America has the most catching up to do on transport infrastructure, reflecting historically low public expenditure in the region. Asia Pacific and Africa need significant investment, as the development of transport networks has to compensate for historical under-investment and match rapid population growth.

Next to transport, energy has the greatest need for investment. Rural areas in many emerging economies still lack basic infrastructure for electricity generation and distribution. The biggest requirement for energy investment lies in Asia Pacific, estimated at \$14tn between now and 2040 (see Figure 3.4).

With growing concerns over climate change and global warming, developed economies require investment to move away from carbon-intensive energy sources. Replacing conventional power generation and distribution systems with renewable energy can be costly in the short term, but scalability can push costs down over time.

### Challenges to real asset investments

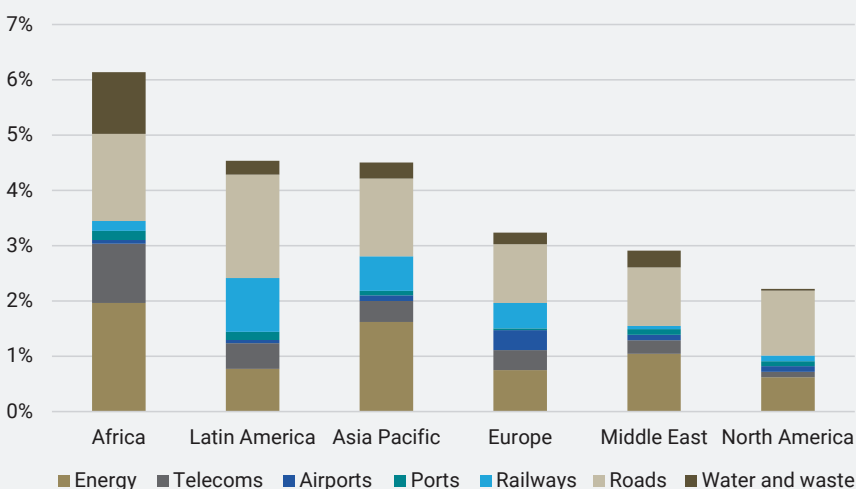
Continued economic growth and investor-friendly environments are crucial to boosting real estate investments. Political stability and the quality of institutions will continue to affect the destination of capital flows. Real assets have high upfront costs and long return horizons. Countries that improve institutional

processes to insulate against uncertainty will be more attractive to investors. Transparent and efficient procurement processes in the public sector reduce political risk and incentivise private investment.

According to the World Economic Forum Global Competitiveness database, countries with the highest quality institutions

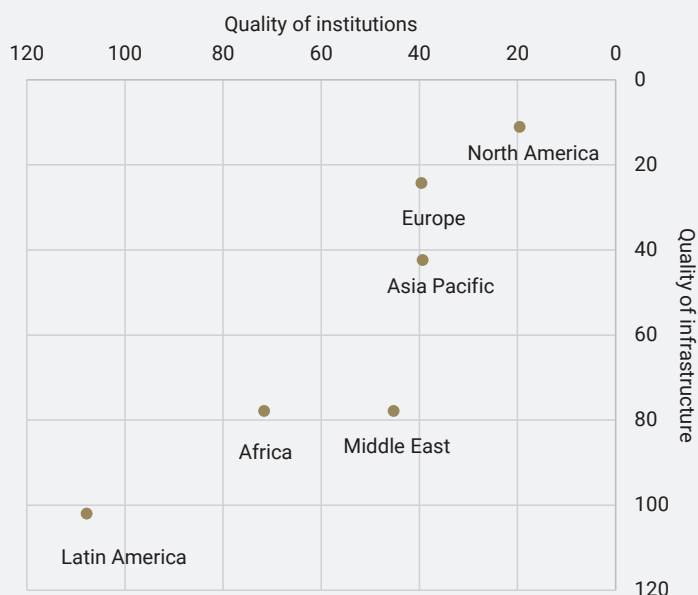
and greatest transparency also have the highest quality infrastructure. Africa and Latin America have a long way to go in strengthening institutional frameworks, while reforms in Asia Pacific and the Middle East are moving in the right direction (see Figure 3.5).

**Figure 3.4: Huge energy and transport needs in developing regions**  
Projected annual investment needs by sector, 2018-40, % GDP



Source: Global Infrastructure Hub, OMFIF analysis

**Figure 3.5: Africa and Latin America need stronger institutions to ramp up investment and improve infrastructure quality**  
Weighted ranking by region, 1=highest rank



Source: Global Competitiveness Report 2017-2018, OMFIF analysis

“Next to transport, energy has the greatest need for investment. Rural areas in many emerging economies still lack basic infrastructure for electricity generation and distribution.”



# Considerations and complexities for investing in real assets

According to the survey, direct equity and private equity are the most common forms of accessing real asset investments, with 80% of respondents using at least one of these. Direct debt, real estate investment trusts and indirect equity are the next most popular, with 45%, 40% and 40% of institutions accessing real assets through these methods, respectively (see Figure 4.1). In recent years, accelerating around 2013, investors have increased direct project exposure to real estate and infrastructure assets via equity and debt. For some this is about pursuing a wider range of assets as markets get more competitive. For others it is part of a cost management approach or the result of changing strategies regarding real asset investment, requiring them to invest in new types of assets.

Most direct investments are in real estate. The majority of funds responding to the survey indicated that direct infrastructure projects face regulatory barriers that limit their ability to invest directly. This has resulted in greater use of infrastructure funds

for accessing these assets compared with real estate.

For investors that have significant experience in real estate investing and have large portfolios of properties, particularly institutions from the US, Canada, Europe and Australia, direct investing is an important tool for boosting returns from their real estate investments. Many of these funds are shedding their investments in locations without strong growth potential and are selling portfolio assets in order to benefit from particularly high valuations.

The proceeds of those sales are targeted to projects with specific qualities that make them useful additions to the portfolio. The sense among these investors is that divergence in different real estate projects is likely to increase. Institutions have to select their assets more carefully to ensure good return streams, for which direct exposure to selected underlying assets is crucial. According to a large US pension fund, 'redeployed capital has focused on quality, well-located assets acquired at a discount to

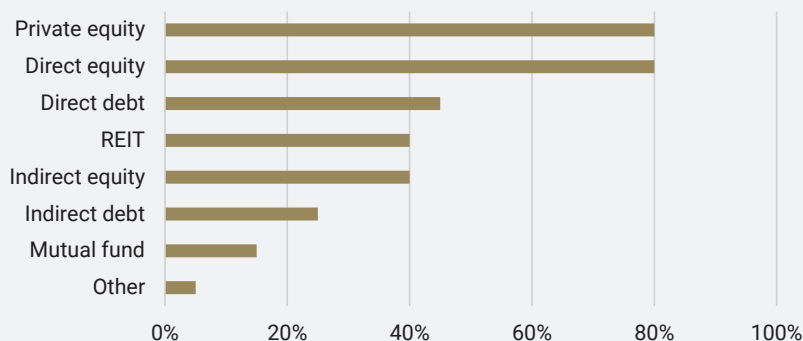
"perfected" core pricing with value derived through repositioning, renovation, and improved levels and quality of leasing'.

While private equity has been an area of strong growth for these investors, some are uneasy about the amount of capital raised by fund managers and the extent of 'dry powder' that has built up. This stands at almost \$1.8tn, \$300bn of which lies in real estate. With up to one-third of capital currently uninvested, the fees charged by private equity firms are becoming less attractive. In response, a number of private equity firms are only charging fees on invested capital in order to remain attractive to investors. However, the reasons behind the build-up of dry powder, including high valuations on real estate and infrastructure assets, are unlikely to reverse soon. Future allocations to private equity firms may tail off, according to survey respondents, as investors seek to put their money elsewhere.

Green assets are emerging as a popular category, with 36% of sovereign funds and public pension funds surveyed planning

“Future allocations to private equity firms may tail off, according to survey respondents, as investors seek to put their money elsewhere.”

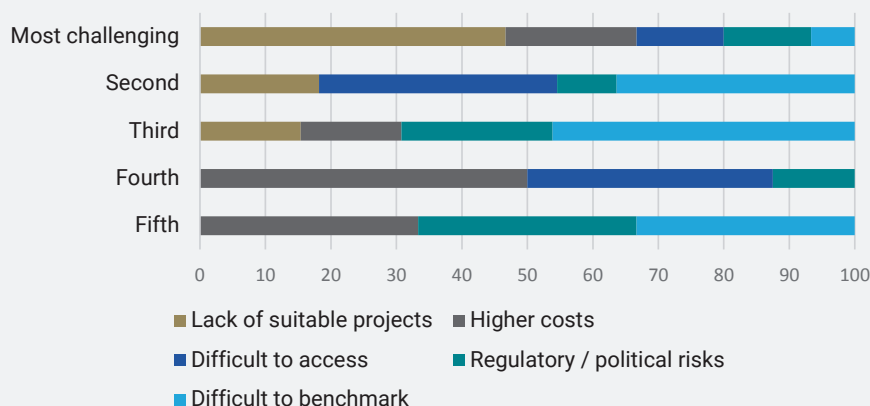
**Figure 4.1: Private and direct equity favoured for accessing real assets**  
% of respondents accessing real assets in this way



Source: OMFIF analysis

**Figure 4.2: Lack of projects presents greatest challenge**

'What are the biggest challenges to investing in real assets?', share of responses



Source: OMFIF analysis

“The competition for core properties in prime locations has caused prices to rise, making new investments more expensive.”

to 'increase' (by up to 3 percentage points) or 'significantly increase' (by more than 3 percentage points) their green bond investments over the next 12-24 months. A total of 18% of respondents said they plan to increase their allocation to green and sustainable equities, while no change in allocation was expected for the remaining asset classes on which institutions were surveyed, including sustainable mutual funds, sustainable exchange traded funds and climate-aligned bonds. No institutions planned to reduce their exposure to green assets.

### Changing strategies

As part of their shifting approach to real assets, many investors have reassessed their real estate and infrastructure strategies. The dominant strategy has been a core or core-plus approach, in which high-quality assets with strong revenue streams are bought and held for long periods of time. The main benefit of these assets is their stable and predictable long-term cash flows.

The competition for core properties in prime locations has caused prices to rise, making new investments more expensive. With yields on other assets remaining low, many funds have adopted alternative strategies, including value-add, to boost their returns. This requires making substantial improvements to the underlying asset and its management to increase revenues and achieve capital gains. Such projects involve taking

on additional risk, and in many cases, funds' ability to pursue these projects has depended on their mandates being updated accordingly. Asian, European and North American investors have been most active in updating their mandates to allow such investments. Several US funds report that they have reduced the minimum long-term strategic target to core strategies to 50% or less, facilitating an increase to value-add and opportunistic strategies.

A different skillset is needed when pursuing value-add strategies, as these investments are often in locations where funds have less experience. Value-add strategies may require investing in assets beyond traditional commercial real estate. Appraising development projects and managing the process of upgrading facilities can involve substantial input from the investor, although even small to medium-sized institutions responding to the survey indicated that they are pursuing such strategies, suggesting these difficulties are not putting them off. The pattern of selling these assets to realise the capital gains, rather than holding them for long-term income, requires a more active approach to real estate investing.

Investors are pursuing opportunistic strategies, particularly large institutions that are able to withstand higher risk and longer waiting times to realise returns than smaller funds. This remains less well developed as a strategy among public pension fund investors responding to the survey, while some Middle

Eastern and Asian sovereign funds have been fairly active here.

### Boosting investable real asset projects

'Lack of suitable projects' is the challenge most commonly referred to by survey respondents regarding real asset investing (see Figure 4.2). This is particularly the case for bigger investors, with a large Middle Eastern sovereign fund explaining, 'Sourcing assets is the big challenge. For large investors, exposures need to reach a significant scale to achieve impact.' Reasons given for the lack of projects broadly fit into four categories: lack of transparency regarding real assets, accessing deals of sufficient size, regulatory, tax and political stability in target markets, and regulations that restrict investment in foreign real assets.

According to the same Middle Eastern fund, 'It is difficult to anticipate political and regulatory risks and to price them properly.' These risks 'may not be statistically independent, and so are difficult to incorporate in traditional asset pricing models'. Addressing these factors requires 'understanding the incentives faced by regulators, maintaining a dialogue with them, and selecting experienced local partners'.

A mid-sized Asian sovereign fund emphasised that 'finding high quality assets in core locations and creating a suitable strategy for the planned holding period' was its main difficulty. It has addressed this by focusing

on non-core locations and by increasing investment via funds, in order to ‘enhance returns and exploit opportunities in new markets, sectors, and strategies’. A mid-sized European pension fund is ‘contemplating geographical diversification outside of Europe’.

A mid-sized African pension fund said the regulatory restrictions on investing outside of its domestic economy had ‘reduced the availability of investable assets’. The ‘volatility of local economic indices’ further compounds the challenge of investing in domestic assets. The fund highlighted that ‘much could be gained by investing in Europe, in particular’ to meet the need of these investors. However, progress has so far been slow.

### **Green assets face supply bottlenecks**

The increasing demand for green assets by public investors is gradually raising supply as efforts concentrate on legal and regulatory requirements of these assets.

However, there is still a long way to go in creating a fully developed market for green investments. International standardisation of what constitutes a green bond is lacking. This presents a major obstacle to the expansion of sustainable finance initiatives. Another drawback is the lack of a global monitoring mechanism to ensure compliance with the parameters set by frameworks such as the green bond principles or climate bonds standards. Some progress is being made: in March 2018, a group of investors with almost \$3tn under management, including NBIM and

the Caisse de Dépôt et Placement du Québec, announced that they will work with the United Nations environment finance initiative and the Financial Stability Board’s task force on climate-related financial disclosures to create a first set of climate-related investor disclosures.

The results from the survey are encouraging, suggesting that the picture may be changing. When asked about the reasons for not investing in green and sustainable assets, funds gave as the two most popular reasons that such an action would not fit with their strategies, and that there is a lack of suitable projects. None of the respondents suggested cost or legal and regulatory barriers as reasons for not investing in green and sustainable assets.

Innovative solutions are on display. In March 2018, Amundi and the International Finance Corporation closed the largest green bond fund ever raised, at \$1.4bn (\$2bn when counting the planned reinvestments of proceeds from early investments). The fund aims to channel money into renewable energy and energy-efficiency projects in emerging markets. Several public investors committed to the fund, including Swedish pension funds AP3 and AP4 and French pension fund ERAFP. The fund will only invest in bonds that meet the ‘green finance’ standards set by the International Capital Markets Association, and a committee of scientific experts will sign off on the projects’ environmental credentials. Such developments in certification are helping bridge barriers in accessing green

assets in terms of defending investment credentials.

Responding to the same survey question, some funds cited insufficient data as a concern and highlighted the risk of ‘greenwashing’. Lack of data to incorporate environmental risk assessment in financial decision-making has been an important hindrance to the development of the green finance market. To address this need, in December 2017, a group of six sovereign funds (NBIM, the New Zealand Superannuation Fund, and four funds from Abu Dhabi, Kuwait, Saudi Arabia and Qatar) met at France’s Élysée Palace ‘to accelerate efforts to integrate financial risks and opportunities related to climate change in the management of large, long-term asset pools’ and committed to ‘developing an ESG framework to address climate change issues, including methods and indicators that can inform investors’ priorities as shareholders and participants in financial markets’.

A final reason given by respondents regarding their reluctance to invest in green assets was that procedures may be too complex. This complexity creates the need for investors to rethink their approaches and organisational structures, and hire new staff to bring in additional skills and experience to access these assets. This is part of the broader trend of the professionalisation of investment approaches among public investors seeking to access real assets documented in earlier sections of this report.

“International standardisation of what constitutes a green bond is lacking. This presents a major obstacle to the expansion of sustainable finance initiatives.”

# Market impact of GPIs' changing allocation patterns

Changing strategies and methods of accessing real assets have had an impact on costs and fees. The majority of investors surveyed sought to reduce their management fees by increasing their internal organisational management, particularly for real assets, where management fees are higher than average.

The average share of real assets managed externally, according to survey respondents, is 48% (see Figure 5.1). While this figure is five percentage points above the share of total portfolio managed externally, it has been falling over recent years.

The focus on costs and management is relevant beyond sovereign and pension funds. All investors in these assets face pressure from intense competition, rising valuations and high costs associated with real asset investing. In response, these investors are demanding change from their asset managers.

Over 20% of survey respondents highlighted the high costs of real assets as the biggest obstacle to these investments,

and management fees are a major component of this. This is the second-highest share after lack of suitable projects.

Investors are pursuing cost-saving strategies. Some have negotiated lower performance fees and carried interest paid to asset managers, or abolished them completely. One mid-sized European public pension fund highlighted that it had reduced its real estate external management fees to 0.3% in 2017 from 1.5% in 2014 by adjusting its fee structure so that it pays only acquisition and annual management fees.

More broadly, managers are generally required to outperform over a three-year rolling period rather than just one year in order to earn performance fees. Calculation of base management fees has changed to a net asset value rather than gross value, contributing to lower costs.

Others are paid performance fees only once the final asset is sold, rather than based on its current market value. As one investor highlighted in their response, 'Investment and management fees constitute a substantial

selection criterion in the context of our tender process.'

Infrastructure fees are generally higher than real estate fees, at 1.5%-2%. This reflects the complexity of projects and the associated legal, audit and other fees, as well as the costs associated with investing in funds, through which a substantial amount of infrastructure investment happens.

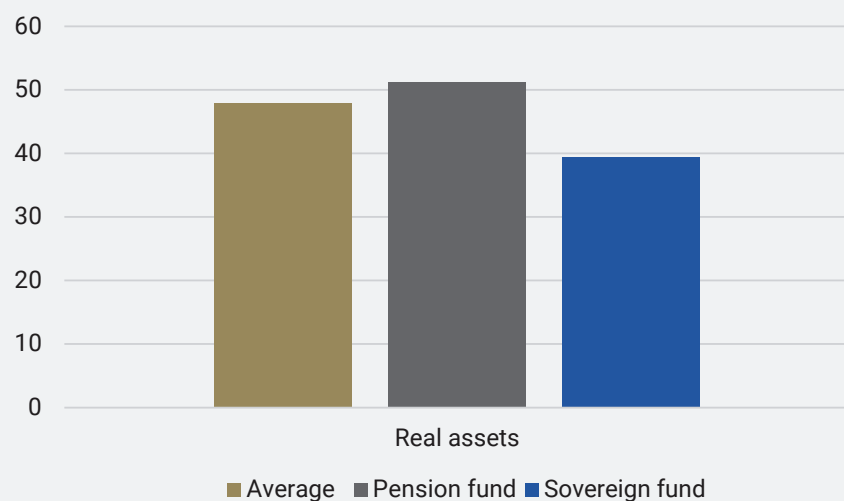
Although most investors have managed to reduce the costs associated with these investments, smaller institutions have found this more difficult. Respondents to the survey reported that the lower advantage they have with managers because of their 'small commitment ticket and global allocation size' has affected their ability to negotiate lower fees. A number of funds highlighted that they are in the process of joining associations of limited partners, such as the International Limited Partnership Association, which should boost their leverage with managers.

For other investors, particularly those that invest via funds, the threshold above which performance fees are paid has been raised. One Asian sovereign fund pointed out that 'carried interest is now paid only above a high-water mark'. Another Asian sovereign fund said they were targeting asset management fees more aggressively to compensate for illiquidity, leverage and other factors associated with real assets. In their words, 'the reward you get from having the allocation to real assets must be higher than the costs associated with those assets'. As valuations on real assets have risen, this calculation has become more important.

Investors expect bond yields to continue rising as central banks scale back QE, raise interest rates further and unwind their balance sheets. This can increase the opportunity cost of holding less-liquid real assets that are sensitive to interest rates, particularly those in core locations where valuations have risen. According to one mid-sized European sovereign fund, monetary policy normalisation will affect property prices while boosting returns on fixed income assets. This may lead to an increase in

**Figure 5.1: Sovereign funds have highest share of internal management**

Share of assets managed externally, % of portfolio

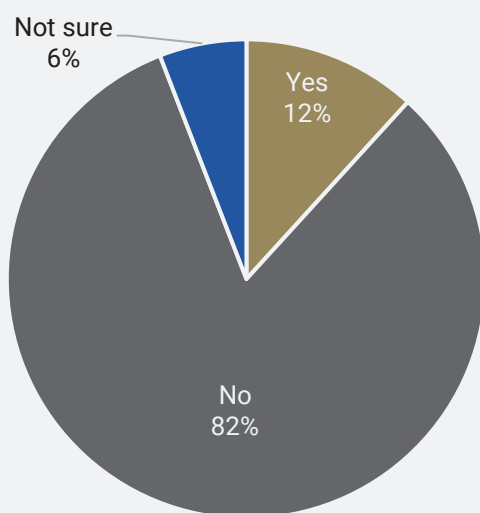


Source: OMFIF analysis

“Investors expect bond yields to continue rising as central banks scale back QE, raise interest rates further and unwind their balance sheets. This can increase the opportunity cost of holding less-liquid real assets.

**Figure 5.2: Investors remain committed to real assets**

'As monetary policy normalises, do you expect to exit some of your real asset investments?', share of total responses



Source: OMFIF analysis

investors 'looking for good exits'.

One upside is that this 'creates an opportunity for secondary market development', which could boost market liquidity as long as normalisation is gradual and predictable. For investors, rising interest rates and higher yields mean the spread between income from real assets, net of fees, and returns from their policy portfolio (mostly equities and bonds) will become more important. A large Asian sovereign fund said this would become a key factor in future allocation, meaning they will become more sensitive to management fees. As the market environment moves beyond the post-crisis recovery phase, asset managers feel compelled to update their value proposition.

### Liquidity and fund structure

In response to these factors, asset managers are creating new fund structures and widening the range of options to remain attractive to investors. Many have said investors are still willing to adequately compensate fund managers that deliver above-target risk-adjusted returns and which offer structures

that fit the funds' needs. Higher liquidity and increased transparency regarding real asset investments are among the areas targeted by asset managers.

The creation of 'liquid illiquids', in which real assets are made more easily accessible to investors looking to buy or sell at short notice, is one approach. So-called evergreen funds provide liquidity every four years, offering investors the chance to exit investments before the fund expires, generally after an initial capital lock-in period. From a cost perspective, such funds offer a single management fee, which makes them more transparent and cheaper than traditional funds. The flexibility they offer can be important in the context of the high capital costs of real estate and infrastructure investments and the changing market conditions associated with QE unwinding, which may result in investors having to rebalance their portfolios at short notice.

The long-term and open-ended nature of such funds means they are not constrained by pre-determined timeframes. By contrast, closed-ended funds require long lock-in

periods and limited flexibility regarding the end date of investments. For funds coming to term while markets are facing difficulties, this can result in loss of value and lower returns.

Open-ended funds, which are supposed to tackle such problems by allowing continuous entry and offering withdrawals at short notice, have faced concerns over how liquid they are in times of market upheaval. In the aftermath of the UK's vote to leave the EU, and during the 2008 financial crisis, several open-ended funds imposed suspensions. Their ability to meet large and sustained outflows without resorting to selling the underlying assets at discounted prices is, in practice, limited. These structures also place pressure on asset managers, which are required to hold larger cash buffers in order to meet potential outflows, resulting in a lower invested share of assets and therefore lower returns.

The major difficulty of these evergreen funds is valuing their assets at regular intervals without actually selling the underlying properties. This can be imprecise and create uncertainty over the return investors would get if they exited their investment. General partners in evergreen funds that met a large number of calls for a return of capital would face similar problems to open-ended funds, potentially forcing them to sell some of their assets at a discount.

Sovereign fund and pension fund investors responding to the survey highlighted that their real assets form part of their long-term strategy and that regular access to liquidity was not a primary concern. Instead, portfolio diversification, stable, inflation-adjusted returns and the potential for capital appreciation are more important. The long-term focus of these investors means they are well placed to benefit from an illiquidity premium. Closed-ended funds remain the most common type of real asset investment for survey respondents, and most indicated that they were not planning to reallocate to more liquid structures.

A large European sovereign fund said it was increasing its investments in less-liquid value-add and opportunistic real estate projects,

“One large European sovereign fund, echoing others, said, “We don’t like funds!”, as their allocation strategies are often sub-optimal from a long-term investor perspective.

mostly new buildings without any tenants, or old buildings that require refurbishment. Other projects, according to this respondent, are ‘too expensive and offer less room for value creation’.

Asset managers and investment funds’ search for increased liquidity has created opportunities for long-term public investors. Many fund managers are selling their lower-quality assets, such as those with short leases, where occupancy is below capacity, or which need refurbishment. These properties are more difficult to sell on short notice, so are being replaced by higher quality assets that are more liquid. The size of individual property investments fell as fund managers sold their larger holdings, which are harder to dispose of in a hurry or during uncertain market conditions.

Sovereign funds and pension funds have been on the buying end of these fund divestments in recent years, as value-add and opportunistic strategies have grown in

importance. These properties offer higher income prospects over a longer time horizon, making them useful for long-term investors. As one large investment manager for public sector funds in North America highlighted, they have ‘purchased quality assets from governments and companies divesting their holdings’. The view among survey respondents is that fund managers are sacrificing long-term performance by pursuing short-term liquidity. One large European sovereign fund, echoing others, said, ‘We don’t like funds!’, as their allocation strategies are often sub-optimal from a long-term investor perspective.

### Investment plans and normalisation

While some investors may seek to sell their real estate and infrastructure fund assets during a market downturn, most survey respondents indicated they would try to increase their holdings during a dip. The same is true for private equity. If such funds invest their accumulated dry powder during a market downturn, sovereign and pension fund allocation to private equity may increase.

This long-term approach is behind the response of 82% of investors that they do not plan to exit any of their real asset investments as monetary policy normalises and yields rise on traditional assets (see Figure 5.2).

### Technology and transparency

The main issue for investors regarding costs is to ensure their managers are achieving value for money. Those that can demonstrate

the value they add, in order to justify the management fees, are likely to continue attracting assets. As investors seek to increase their real asset investments, which are more complex in nature than traditional assets, transparency over the risk exposure of the underlying assets is gaining in importance. The shift into niche investments within the real estate and infrastructure sectors also requires a greater understanding of the performance of these assets.

The need for greater transparency has led to new technologies and software to track investments and monitor how closely managers conform to investors’ demands. Survey respondents said, ‘The main challenge for investors is to track the funds they invest in and the underlying assets, to ensure each investment adheres to our business plan.’ To do this, some survey respondents said they have ‘built custom-made software to track all investments, including those made via funds’. This software triggers an alert ‘when a particular manager or investment diverges from the established parameters’.

While some funds are establishing these processes in-house, asset managers that are able to track exposures among many different funds, in different types of assets and across locations, could be an attractive partner for long-term investors. The combination of transparency, better data and technology offers some fund managers a significant advantage in the real asset sector.







## Conclusion

# Future plans for real asset market development

**S**overeign and pension funds' annual real asset investment since 2010 has far exceeded its pre-crisis peak. This is true for both real estate and infrastructure assets. Moreover, the regional allocation of these investments is becoming more diverse and the types of assets investors are seeking has widened. These factors suggest that demand for real assets is a secular trend, as investors have come to view this as an important asset class and a useful portfolio addition. As investors have gained experience and skill in accessing these assets, more specialised and nuanced patterns have emerged.

To benefit from this trend, asset managers must adapt. Investors are increasingly conscious of costs, and management fee structures have to evolve. Increased flexibility and transparency is vital, especially as investors move into more niche assets and new locations. Regulatory, legal, tax, political and exchange rate risks must be managed carefully, which requires greater expertise from fund managers. While many investors are increasing their in-house management, the use of external partners remains vital for specific projects or to access the necessary skills and experience to achieve investors' goals.

These considerations are set to become more important as markets move beyond the post-crisis recovery phase and into new territory where central bank policies no longer hold yields down and where interest rates are rising. Survey responses as well as wider discussions with market participants indicate that demand for real assets will remain strong even as central bank balance sheets unwind. The scaling back of bank intermediation and the effect of post-crisis regulations mean capital from a wider range of sources is needed to finance the huge infrastructure and real estate needs across the globe. The diversification and long-term, stable, inflation-adjusted returns of these assets make them particularly attractive to institutional investors.

Further discussions with regulators and policy-makers are vital to allocating investment where it is needed most, and where the potential returns are greatest. The data and information on real estate and infrastructure investments that large asset managers have, based on their substantial market experience and knowledge gained from investing in these assets, can be vital in improving the regulatory framework. The benefits for investors and recipient countries could be substantial.



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