Infrastructure Research Paper

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Changing gears: navigating the road ahead in infrastructure

- **The infrastructure investment sector, like most asset classes, has been tested throughout the global financial crisis. Looking at the road ahead, we believe the infrastructure market will enter three distinct phases, with each phase presenting investors with a unique combination of opportunities and risks.**
- **In the short term, constrained credit markets and a deteriorating economic backdrop will create opportunities in the form of distressed sellers and takeovers of primarily listed assets. While public funding will partly fill the void created by reduced private capital availability, opportunistic investors with sufficient capital can take advantage of favourable pricing at the low point in the cycle.**
- **As markets return to normal and the economy recovers, the asset class will enjoy a number of tailwinds. Improved asset performance will deliver higher returns for existing investors, attracting new investors to the sector. During this period, investment opportunities from the current government stimulus spending on infrastructure worldwide will emerge. Given the likely influx of private capital, competition for core infrastructure assets will be robust.**
- **In the longer term, investors can expect greater opportunities to invest in mature infrastructure assets, as projects financed by the earlier rounds of stimulus are completed. It is likely that the fiscal pressure felt by governments around the world will intensify, accelerating privatisations. Additionally, structural changes such as the transition to a low-carbon economy, urbanisation and energy security will be important, ongoing sources of investment opportunities.**
- **The challenge for investors lies in negotiating these changing dynamics. How will infrastructure perform in these different environments? What strategies will enable them to best take advantage of these diverse opportunities? What are the risks and pitfalls investors need to be aware of?**

1. Introduction

This paper aims to explore the broad outlook for the infrastructure sector. We identify three distinct periods, defined not only chronologically, but also by the nature of investment opportunities arising in these periods. The purpose is not necessarily to predict the timing and extent of these trends with any precision, but rather to simply highlight that diverse opportunities exist.

One of the distinguishing characteristics of infrastructure as an asset class is its long-term nature. This is the primary motivation for peering beyond the current gloom and considering the structural drivers that will boost the sector in the long run. The point here is that while the current period represents an opportune time to increase investment in the sector, there are compelling reasons to suggest this should be a permanent shift rather than a temporary tilt.

2. The short term: constrained markets (0-18 months)

Investment environment

The presence of constrained markets defines the immediate period ahead. Growth in bank lending globally has fallen to its lowest level in a decade, while at least US $5 trillion of institutional investors' equity capital has been wiped out by the global financial crisis so far. Increased risk aversion and repricing of risk has also increased the cost of capital overall.

The reduced availability of capital has already impacted infrastructure deal flow (see Figure 2); while for existing businesses seeking to deleverage, concerns over refinancing risk are paramount. However, for investors with capital, opportunities will arise. We examine each of these points in more detail below.

The dramatic reduction in debt availability has been accompanied by a tightening in lending standards and conditions, including more stringent loan covenants, lending on a shorter-term basis (3-5 years), and a preference for lending domestically. Compounding this has been the increased cost of debt – which has risen despite the lowering of official interest rates by central banks globally. These factors have hit the infrastructure sector particularly hard due to the higher levels of gearing, on average, relative to other sectors in the economy. In the listed sector, the ratio of net debt to EBITDA for infrastructure stocks is over 5x, compared to around 3x for utilities, and less than 1x for general equities.

Similar dynamics are evident with equity finance, with intense competition for the limited equity capital available. The global listed infrastructure sector has shrunk by $1.2 trillion from its peak in December 2007 to its trough in March 2009. Unlisted funds around the world, collectively seeking to raise approximately $95 billion in capital, are now reducing their fundraising expectations. To illustrate how dramatically the situation has changed, consider that in May 2008 - before the worst of the capital market problems - Morgan Stanley raised US $4 billion for a new infrastructure fund, surpassing a targeted US $2.5 billion. By contrast, a Goldman Sachs fund which reached financial close in February 2009 – after market sentiment had deteriorated significantly – raised only US $2 billion of a targeted US $7.5 billion by Q209.

The decline in equity markets has been one of the obstacles to further institutional capital inflows to the infrastructure sector, via its effect on investor asset allocations. Specifically, because equity markets have fallen further relative to other asset classes, this has created in overweight positions in illiquid asset classes for these investors. As a result, many pension funds will be constrained in their ability to allocate new capital to the sector in the short term.

With the reduced availability of private sector funding for infrastructure, governments have had to fill the void.

Domestically, Treasurer Wayne Swan recently stated that 'the case for prudent Commonwealth intervention to support priority infrastructure projects is compelling'. Government authorities are also looking at ways to make investment in public private partnerships (PPPs) more attractive to institutional investors such as superannuation funds. Areas reportedly being considered include tax issues, government guarantees at the State level, reducing bidding costs, risk-sharing arrangements for Greenfield projects, direct lending for 'mega deals, and grants for other large projects (between $500 million and $1 billion). Extending the Australian Business Investment Partnership (ABIP), more commonly known as 'RuddBank' to the infrastructure sector is also an option.

On the international scene, the French government announced in January 2009 a plan to make nearly €18 billion available for infrastructure PPPs, though a combination of direct debt financing as well as a government guarantee for bank lending to PPP projects. In March, the UK government established a scheme for lending to up to £13 billion of Private Finance Initiative (PFI) infrastructure projects which are unable to raise sufficient debt finance; lending alongside commercial lenders and the European Investment Bank.

Further action on this front is forthcoming. The Brazilian government is planning to provide up to US $2.5 billion in emergency loans to companies investing in State-sponsored infrastructure projects; while in the US, the idea of creating a US $250 billion fund - available for projects of regional or national significance – is being explored.

These moves are in addition to the US $1.3 trillion of medium-term infrastructure spending announced in fiscal stimulus packages so far, which are discussed in more detail later in this paper.

Risks and opportunities

Refinancing risk is the biggest challenge currently faced by infrastructure asset owners. According to UBS, global listed infrastructure companies must refinance 27% of their net debt in 2009 and 2010. Royal Bank of Scotland estimates that in Australia alone, at least $8.5 billion must be refinanced in the next two years. Figure 1 presents the refinancing schedule for major Australian infrastructure companies and assets, along with the debt financing method.

Figure 1

Australian infrastructure refinancing schedule

Company	Amount ($m)	Date due	Financing
Adelaide Airport	240	Dec 2010	Floating rate note
Brisbane Airport	350	Jun 2010	Floating rate note
B&B Infrastructure	200	Sep 2010	Bond
ConnectEast	360	Nov 2010	Bank debt
DBNG	325	Apr 2010	Floating rate note
Electranet	50	Nov 2009	Floating rate note
	100	Aug 2010	Inflation linked
Envestra	175	Nov 2009	Floating rate note
	150	May 2011	Floating rate note
	100	May 2011	Inflation linked
ETSA	750	Apr 2010	Floating rate note
Lane Cove Tunnel	150	Dec 2011	Bond
Melbourne Airport	654	Jul 2011	Bank debt
	232	May 2011	US placement
	250	Jun 2011	Bond
Powercor	350	Jun 2011	Floating rate note
Singapore Power	370	Sep 2010	Floating rate note
Snowy Hydro	127	Feb 2010	Floating rate note
Sydney Airport	450	Sep 2009	Bank debt
	184	Dec 2009	Bank debt
	400	Sep 2011	Bank debt
	400	Nov 2011	Floating rate note
Transurban	459	Jun 2009	Project Debt
	516	Nov 2009	Project Debt
	150	Dec 2009	Bond
	500	Jun 2010	Project Debt
	500	Dec 2010	Project Debt
Total	**8492**		

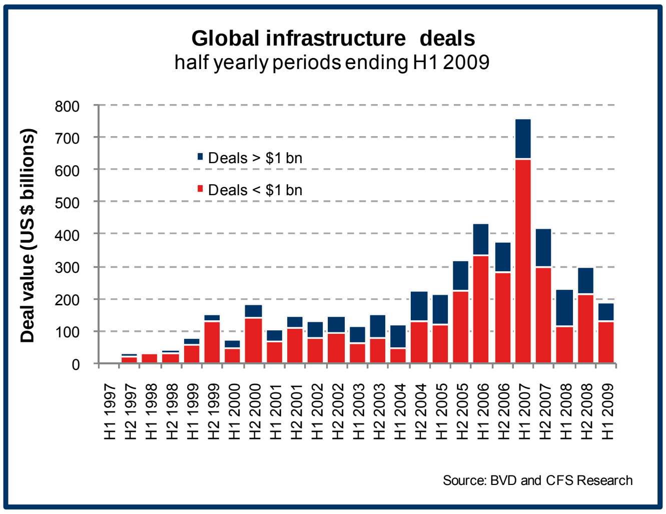
Source: RBS Group/AFR and CFS Research

Those on this list that fail to refinance will need to consider options such as cutting distributions, dilutive equity raisings, or asset sales.

The best opportunities for well-capitalised private sector investors will emanate from distressed sellers, given the active role assumed by the public sector in funding Greenfield projects. Interestingly, the wave of asset sales widely predicted has not yet materialised. The lack of transaction activity thus far can be attributed to three main factors:

Bidders are finding it difficult to raise the finance required for large 'mega' deals. As Figure 2 highlights, infrastructure transaction activity has fallen significantly, with mega deals being hit particularly hard due to tighter debt markets. Debt constraints mean bid structures require a greater proportion of equity. In some cases, such as Morgan Stanley's US $1.2 billion purchase of Chicago's parking meter system, bids are even being 100% equity financed.

Figure 2



Morgan Stanley, however, was fortunate to complete its round of fund raising prior to the worst of the credit crisis, as noted earlier. Raising equity in the current environment is an altogether different proposition. For example, the landmark US $2.52 billion sale of Chicago's Midway Airport was cancelled in April 2009, after the winning consortium failed to secure the all-equity financing for the upfront lease payment.

Across the Atlantic, the sale process for London's Gatwick Airport has also experienced issues. Following a warning by Standard and Poor's that any bid structure with debt equivalent to more than 50% of Gatwick's regulated asset base (RAB) would only receive a BBB- rating, a consortium was forced to seek additional equity, and subsequently withdrew from the bidding process.

A second consortium's bid was rejected due to concerns around its financing package. The remaining bidder is yet to finalise an agreement with all the banks in its debt consortium, casting doubt over the entire sale process.

The gap between buyers and sellers' expectations of price has not yet closed. Returning to the example of Gatwick Airport, the seller - Ferrovial-owned BAA - was originally seeking bids of as much as £2 billion when it began the sale process in September 2008. However, revised bids from two of the final consortia have fallen in the range of £1.36-£1.4 billion – even below the airport's regulated asset base (RAB) value of £1.58 billion

In Australia, some high profile listed infrastructure companies have been forced to revise their expectations. After vehemently stating that it would not be selling its large assets earlier in the year, Babcock and Brown Infrastructure (BBI) put up a minority stake in its prized Dalrymple Bay Coal Terminal in November 2008. As its share price continued to plummet, it was forced to put the entire asset up for sale. Interestingly, BBI had reportedly received an offer for the entire asset as far back as September 2008 – but knocked it back due to the big gap in price expectations between BBI and the potential buyer.

Similarly, Asciano knocked back a $2.9 billion offer from TPG and Global Infrastructure Partners in August 2008, dismissing the bid as opportunistic and undervalued. However, since then it has variously sought to sell a stake in its coal business, the entire coal business, its container ports business - and more recently, a complete takeover has been touted. While there has been intense speculation around the sale process, no deals have yet been finalised.

In June 2009, the Queensland government's decision to privatise A$15 billion worth of infrastructure assets added another twist to the sale prospects of BBI and Asciano. Three of the assets for sale – Queensland Rail's coal freight business, the Port of Brisbane and the Abbot Point Coal Terminal – are rival assets to Asciano-owned Pacific National rail, Patrick ports operations and BBI's Dalrymple Bay coal terminal. These developments add further pressure on the sellers to accept the prices of existing bidders.

The decision also highlights the fact that State governments – which generally face tighter fiscal constraints than their Federal counterparts – are not able to unequivocally ramp up spending on infrastructure. In the months preceding the announcement of its asset sales, Queensland had its credit rating cut by ratings agencies.

Continued uncertainty over the macroeconomic environment. Part of the reason for the price expectations gap described in the previous point is the uncertainty over the future economic climate. The level of economic activity is linked to patronage/volume levels of cyclical infrastructure assets such as airports and ports. The aggressive forecast assumptions of pre-crisis bids have now vanished, with pricing reflecting far more moderate implied growth levels.

Taking these factors into account, investors have some clear investment strategies in the short term:

- Existing asset owners may **defer capex** plans in the face of slower or negative demand growth and instead focus on deleveraging and **recapitalisation**. This is already evident in the domestic airport sector, with almost every major Australian airport having deferred planned capex projects in the short term.
- Acquisitive investors may seek **smaller assets** during this period, given the difficulty of organizing finance for mega deals.
- Investors must be prepared to exercise patience with regard to distressed sellers. The current impasse cannot persist for much longer, and investors can expect a greater number of **secondary market** opportunities to arise, consisting of better-quality assets, and at more favourable prices.

One point to note is that the opportunity set will vary by region. Analysis by UBS[1] shows that in the listed sector at least, the Australian and to a lesser extent North American markets are the most highly geared. These markets are expected to account for the bulk of distressed sellers. Europe, on the other hand, features a greater share of utilities, which tend to be lower geared. Asset sales in this region, therefore, are more likely to be driven by regulatory factors.

A final point worth highlighting relates to the distinction between distressed sellers and distressed assets. It is clear that distressed sellers may have to accept prices below the intrinsic value of assets – the example of bid prices falling below RAB value in the Gatwick sale

[1] UBS Investment Research report: *Balance sheet health check* (9/3/09)

illustrates this. However, owners of conservatively and prudently managed assets do not face the same problem. While it is inevitable that a weaker economic environment will affect asset valuations, this does not imply that the assets themselves are necessarily distressed.

3. The medium term: stimulus and impetus (18 months – 5 years)

Investment environment

The medium term outlook for the infrastructure sector is positive, with a number of tailwinds expected to materialise. We discuss each of these below:

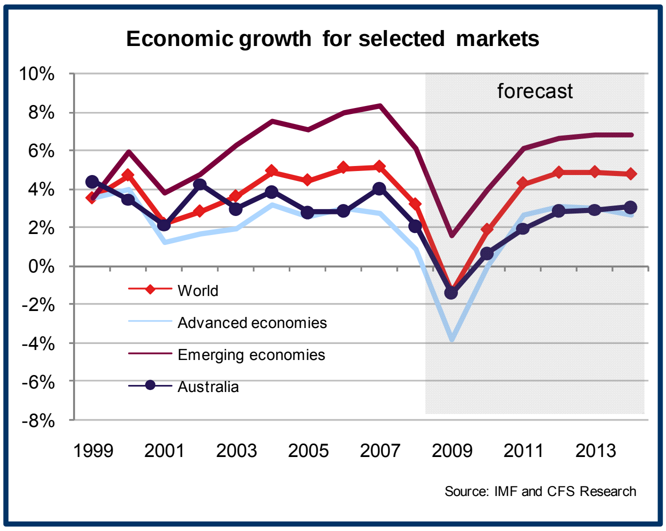
- **Capital markets resume normal service.** Barring further unforeseen events, capital markets are likely to normalise within 18 months or so. It is important to specify that 'normalise' in this context does not suggest a return to the frenzied markets witnessed prior to the financial crisis. That period is likely to be viewed as an aberration through the lens of history.

  Debt and equity costs are both expected to moderate slightly from their current levels, though not to pre-crisis levels. The overall cost of debt is determined jointly by underlying reference rates and credit spreads. While these generally tend to offset each other (policy rates tend to be eased during economic downturns, which is precisely when defaults, and credit risk premia tend to rise); on balance, debt costs are expected to be higher, primarily due to higher expected reference rates. The cost of equity will fall as equity markets recover and investor confidence returns

  Gearing levels are expected to remain stable at the levels attained post-deleveraging throughout most of this period, reflecting investors' desire to preserve infrastructure's defensive qualities. Moreover, this gearing is likely to exist primarily at the asset, rather than the fund level.

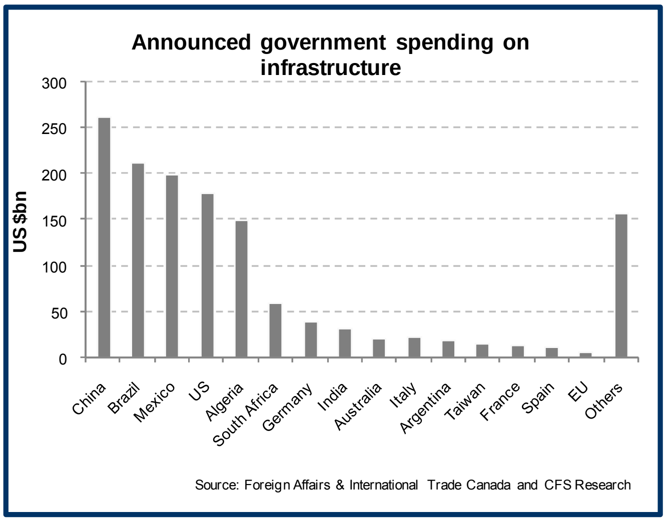
- **Economic recovery**. During this period, the global economy will also enter a recovery phase. According to the IMF, global growth is expected to recover to 4.3% in 2011, after -1% and 1.9% in 2009 and 2010 respectively. However, as Figure 3 reveals, there are expected to be significant differences between emerging and advanced economies. While emerging economies are expected to grow at a compound annual growth rate (CAGR) of 5.3% to 2014, the corresponding figure for advanced economies is only 1.2%.

Figure 3



- **Government infrastructure stimulus**. This period will also feature the bulk of government infrastructure spending contained in the fiscal stimulus packages announced recently. The total amount of fiscal stimulus announced (as at the end of May 2009) is US $2.6 trillion, according to UBS. According to our analysis, just over half of this is dedicated to infrastructure, amounting to approximately US $1.3 trillion. Figure 4 provides a breakdown of this amount by country, with further details available in Appendix A. Exactly when the money will be spent is less clear, but the majority of the funds have been earmarked for deployment over the next two to three years. The stimulus-related spending represents a significant increase in the supply of Greenfield infrastructure investment opportunities in a historical context, following decades of underinvestment in infrastructure.

Figure 4



- **Maturing of infrastructure as an asset class**. As institutional investors worldwide re-evaluate their portfolio structures and investment strategies, infrastructure will emerge as a popular option. Conservative investors, such as defined-benefit pension funds and insurance funds with a liability-driven investment (LDI) strategy, will seek yield-oriented assets with low volatility, inflation protection and low correlation with other asset classes.

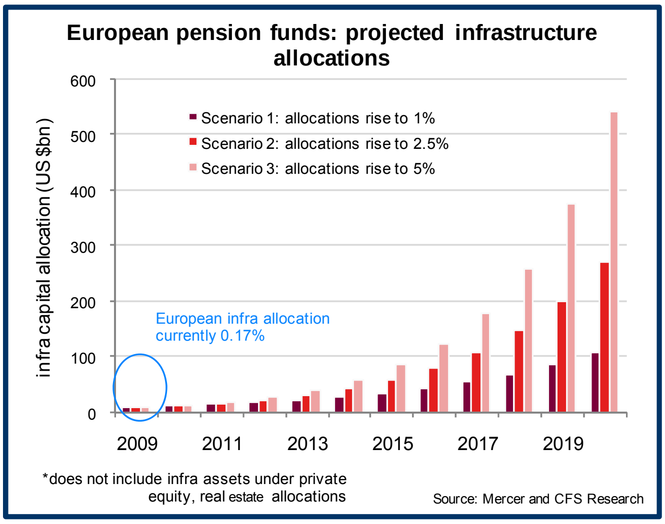
  Importantly, this shift will driven by structural, rather than cyclical factors. The pressures of ageing populations and rising longevity, enforcement of more stringent accounting regulations, as well as greater awareness and familiarity of infrastructure as an investment option in key markets all point to greater permanent allocations to infrastructure. Direct infrastructure, in particular, will gain recognition as a legitimate companion to real estate – currently the third major asset class after equities and bonds.

  Mercer's 2009 European institutional asset allocation survey included infrastructure as a separate asset class for the first time. Allocations to infrastructure are currently a miniscule 0.17%; although this figure understates the true exposure to infrastructure as it does not capture those infrastructure assets under private equity or real estate allocations.

  In more mature markets, however, allocations to infrastructure are significantly higher – and growing. Australian super fund allocations to infrastructure (both listed and unlisted) are 3.6%, according to Rainmaker. Large Canadian public pension fund allocations to unlisted infrastructure are around 1.3%, behind real estate (6%) and private equity (2%). Figure 5 illustrates the enormous growth potential that exists for the European pension fund market in dollar terms, using various growth scenarios.

  It must be noted that pension funds are simply one category of institutional investors, and that similar potential exists with insurance funds, sovereign wealth funds and high net worth investors. While extending this analysis to all investor bases, and all geographical markets is not currently possible due to limited data availability, these numbers are indicative of the enormous growth opportunity for infrastructure.

Figure 5



Risks and opportunities

Gearing levels in the AREIT sector have risen dramatically since 1994. Increasing from around 10% to 34% as at April 2009, although it has reached as high as 38%. The increased use of gearing in the sector is attributable to: a low and stable interest rate environment, greater focus on capital management to expand and generate enhanced returns, and low levels of 'perceived' risk in property investment.

As projects get underway, governments will look to maximise private sector involvement. While direct assistance for PPPs may gradually be withdrawn, appropriate risk-sharing arrangements may still be necessary, particularly in social infrastructure projects. Investors with higher risk tolerances will find abundant opportunities in the form of stimulus-driven Greenfield projects, which will collectively represent a significant increase in the supply of assets.

Competition for mature assets, on the other hand, will be more intense. There is a risk that increased capital flows into the sector will not be matched by a commensurate increase in mature asset investment opportunities. Both acquisitive investors and those focused on organic growth will be accommodated for, with sources of mature asset investment opportunities including:

- **Privatisations** – as fiscal pressures build, and Greenfield projects reach completion, privatisation opportunities will start to emerge in some markets. While highly sought after, the supply of privatisation opportunities during this period is expected to be somewhat sporadic.
- **Capex for existing assets** – given the capex deferrals in the preceding period a backlog of capex

plans is likely to exist at this point, offering relatively lower risk levels than pure Greenfield projects. Active management will come to the fore for these assets.

As highlighted earlier, the improving economic climate will be a positive factor, with stronger demand for infrastructure services and rising inflation providing a boost to asset values. However, given the weight of capital likely to be chasing assets, investors making acquisitions during this period will need to wary of overpaying in strongly contested auctions likely to feature new entrants to the sector.

4. The long term: structural change (5 years and beyond)

Investment environment

The long term performance of infrastructure assets is governed primarily by fundamental factors such as the economic environment and structural changes, rather than cyclical capital market conditions.

The economic environment during this period is likely to be one of robust growth, driven by the development of emerging markets. However, unlike the decade preceding the global financial crisis, this may not be accompanied by low inflation. We make this prediction based on expected rising emerging market demand, which will place upward pressure on prices of food, energy and commodities globally. Previously, large low-cost producers such as China had been 'exporting deflation' to advanced economies via lower prices on manufactured good exports. This deflationary dividend is diminishing as these economies increase their consumption levels and labour costs rise.

Larger, increasingly foreign currency-denominated debt burdens also raise the risk that some governments seek to monetise their debt – i.e. allow inflation to erode the real value of their debt obligations.

This higher-inflation environment, in turn, would have a number of implications:

- Tighter monetary policy in response to price pressure will raise the nominal cost of debt.
- As higher inflation erodes the purchasing power of retirement savings and diminishes the real value of portfolios, inflation-edging investments such as commodities, inflation-indexed bonds, and **regulated infrastructure assets** should outperform other asset classes. The latter will appeal due to in-built mechanisms such as explicit CPI-linked tariff increases.

A number of other structural changes will shape the infrastructure sector during this period. The most obvious and critical of these is the transition to a low carbon economy, but other demographic and political trends will also play critical roles. Specific examples of these include:

- The incorporation of carbon pricing. As conventional electricity generation sources are supplanted by renewable energy sources such as wind, solar and geothermal power, infrastructure portfolios will need to evolve to reflect this changing generation mix.
- Carbon pricing will also have a profound impact on the relative growth prospects of different modes of transport (road, rail, sea, air).
- New transmission networks will be required due to the dispersed nature of new generation sources.
- Political tension and energy security concerns will also motivate countries to seek new and varied distribution channels, with new gas supply pipelines and ports likely as a result.
- As water shortages become more acute, owners of water utilities will have to comply with greater environmental regulation and efficiency measures. New infrastructure in the form of pipelines, desalination and water recycling plants will be needed. Water pricing is also likely to increase significantly.
- Urbanisation, particularly in developing countries, will generate enormous infrastructure needs, such as mass transit and other high-density social infrastructure.

Finally, as populations in developed countries age, investor preferences will shift toward more conservative asset classes. The stable, inflation-linked returns offered by infrastructure will be highly sought after, with demand for core, mature-assets in particular demand due to their yield-oriented investment return.

Risks and opportunities

As the infrastructure market develops globally, investors will have the ability to diversify geographically. Wide geographic exposure will be necessary to access the entire risk spectrum of infrastructure investments effectively: the bulk of Greenfield opportunities will be found in emerging markets, while advanced economies will be oriented toward mature asset opportunities. We consider the different dynamics of these markets below:

- **Emerging markets** - as highlighted earlier, the strong global economic growth in this period will be largely driven by emerging markets. However, while the growth prospects of these countries are exciting, investors must also be wary of the political and regulatory risks involved.

A good example is India, projected to become the most populous nation by 2050. The country has enormous infrastructure needs, and requires significant foreign and private sector finance. However, it is also notoriously bureaucratic, politically rigid and lacks the stable, mature regulatory regimes of more advanced economies.

Greenfield investors entering emerging markets must be aware that projects carry significant risks of delays and obstacles, while investors seeking regulated, mature assets will be wary of outcomes such as political interference derailing tariff rises in a high-inflation environment. In addition to regulatory risk, negative attitudes to foreign ownership are common in emerging markets (although this is not exclusively an emerging market phenomenon, as examples from Japan, France, the United States and even Australia attest).

- **Developed markets** - In developed markets, the balance of investment opportunities will gradually skew towards mature infrastructure assets. Mounting fiscal pressure in advanced economies is likely to accelerate the privatisation pipeline during this period, as governments in deficit seek to return to budget surpluses and reduce their debt burden. The US government now has debt in excess of US $10 trillion, Japan's net debt exceeds its gross domestic product, while the Australian Federal budget – one of the healthiest in the OECD – isn't projected to return to surplus until 2015-16.

  National and state governments are also likely to experience pressure on their credit ratings during this period. Standard and Poor's has already changed its UK government credit rating outlook to 'negative,' as a result of rising debt. This means that an actual ratings downgrade is more likely in the medium to long-term. Other countries are likely to follow suit, with the United States' mounting debt attracting particular attention.

  If this scenario eventuates, there may also be greater involvement in PPP financing for the private sector due to the erosion of the public sector's lowest-cost advantage. The proportion of 'mega' projects will increase on account of both the scale of required investment as well as the increased presence of larger institutional investors such as sovereign wealth funds, although this will be subject to political appetite for foreign investment.

  It is important to note that while Greenfield projects will continue to arise in most developed markets, the nature of these opportunities will be shaped by structural trends. For example, populations in some regions such as Japan and Eastern Europe are forecast to decline. Greenfield opportunities that do exist in these markets, therefore, are more likely to be driven by factors such as the replacement of emission-intensive assets with greener infrastructure, rather than population growth.

5. Summary and conclusions

Figure 6 provides a high-level summary of the three periods discussed in this paper. It reinforces the dynamic investment environment and diverse opportunities that await infrastructure investors – as well as the numerous risks. The optimal investment strategy, of course, is dependent on the investor's preferences and objectives.

A more risk-tolerant investor with an appetite for Greenfield risk may view the medium term as the most opportune time to commit capital, and focus on a manager or fund that specialises in these. By contrast, more conservative investors seeking defensive, lower-risk exposure to mature assets may wish to commit capital now in order to take advantage of the imminent wave of distressed sales in the sector.

One issue faced by institutional investors is that strict adherence to asset class weightings may effectively preclude them from committing new capital to infrastructure in the short term. Some investors are already avoiding this counterproductive situation by becoming more flexible with their asset allocations, while other investors have opted to increase their strategic asset allocations to infrastructure as part of a general re-evaluation of investment strategy in the aftermath of the global financial crisis.

Indeed, the case for a permanent, rather than temporary allocation to the sector is compelling, as improving macroeconomic conditions underpin performance in the medium term, before structural trends bring a further boost to the sector, along with increased opportunities for subsector and geographical diversification.

Given that infrastructure investment opportunities are large-scale, global, and long-term in nature, it is important that managers in this sector possess the necessary ingredients of scale, global focus, and a long-term investment horizon. Having active management skill is also important, as this is a source of value throughout the investment cycle, and is therefore an omnipresent opportunity over the short, medium and long-term.

The short-term nature, opaqueness, volatility and illusory benefits of several other asset classes have arguably contributed to the global financial crisis. While some infrastructure players have suffered by relying on unsustainable financial practices, infrastructure in its pure, unadulterated form has been recognised by governments as a solution to the problem, rather than part of the problem. Investors searching for answers in the wake of the financial crisis may well reach the same conclusion.

Figure 6

	Short term constrained markets	**Medium term** stimulus and impetus	**Long term** structural change
	0 - 18 months	**18 months - 5 years**	**5 years +**
Investment environment	▪ Limited availability, high cost of capital	▪ Capital markets return to normal, albeit not to pre-GFC levels	▪ Moderately higher debt costs
	▪ Public sector filling void left by private investors	▪ Private sector investment picks up, governments begin to seek private sector investment	▪ More intense fiscal pressure will see direct government ownership of infrastructure fall further than pre-GFC
	▪ Capacity for institutional allocations to infrastructure limited by portfolio asset allocation constraints	▪ Strong capital inflows from new investors, increased allocations from existing investors	▪ Investor base continues to widen as ageing populations seek more conservative investments
	▪ Weak, disinflationary economic environment	▪ Economic recovery underway, with inflation picking up	▪ Higher inflation likely
Risks & opportunities	▪ Refinancing risk	▪ Greenfield, PPP opportunities from government stimulus spending	▪ Emerging market will account for bulk of greenfield opportunities
	▪ Distressed sellers the key opportunity for private sector	▪ CAPEX investment opportunities for existing assets, opportunity for active management	▪ Fiscal pressure to accelerate privatisation momentum in advanced economies, oriented to mature assets
	▪ Active management for existing assets	▪ Improving economic conditions will boost asset performance	▪ Ongoing opportunities from climate change, energy security, urbanisation, etc
	▪ Limited capital relative to investment opportunities	▪ Potentially limited mature asset opportunities relative to capital - acquisition price risk	▪ Greater balance between investment opportunities and available capital

Source: CFS Research

6. Appendix A – Government stimulus plans

Country	Amount (US $m)	Details
China	263	In November 2008, Premier Wen Jiabao announced a fiscal stimulus package of CNY4 trillion (US$600 billion) with infrastructure spending estimated in the range of US$270 billion to US$470 billion. Key sectors of opportunity will include railways, airports, electricity, oil and gas. Recently approved expenditures include: ▪ CNY167 billion to be spent on infrastructure in the Wenchuan Earthquake affected area (e.g. expressways, trunk roads, railway, civil aviation, telecom, power transmission, water resources) ▪ CNY93 billion to be spent on the West-to-East Natural Gas Transmission Project (Phase 2) ▪ CNY95.5 billion on expanding the Yangjiang Nuclear Plant in Guangdong and the Qinshan Nuclear Plant in Zhejiang ▪ CNY17.4 billion will be spent on water conservancy projects and on new airports and expansion of existing airports
Brazil	213	While no new infrastructure spending has been announced under Brazil's fiscal stimulus package, the government has committed itself to maintaining funding levels for the "Program of growth acceleration" (PAC) which came into effect over the past two years. PAC consists of BRL503.9 billion (US$212.6 billion) for projects focussed in three areas: ▪ logistics (railways, roads, ports, airports and seaways) ▪ energy (electric generation and grids, oil and gas, renewable energies) ▪ social infrastructure (sanitation, housing, urban transportation, access to electricity and potable water)
Mexico	200	Planned spending on the National Infrastructure Development Program will total MXN2.5 trillion (about US$200 billion) over the next five years and includes spending for ▪ roads (MXN287 billion) ▪ railroads (MXN49 billion) ▪ airports (MXN59 billion) ▪ hydro-agriculture and flood control (MXN48 billion) ▪ ports (MXN71 billion) ▪ drinkable water and drainage (MXN154 billion) ▪ telecommunications (MXN283 billion) ▪ refining, gas & petrochemical (MXN379 billion) ▪ electricity (MXN380 billion) ▪ hydrocarbons production (MXN822 billion).
US	180	In January 2009 announced spending of approximately US$180 billion for infrastructure over two years, focussed on areas such as ▪ roads and bridges (US$30 billion) ▪ rail and transit (US$10 billion) ▪ health information technology (US$20 billion) ▪ broadband for underserved areas (US$6 billion) ▪ projects aimed at 'greening' America such as smart electrical grids (US$11 billion) ▪ energy efficiency of public buildings at the federal, state and local level as well as low-income family homes (US$53 billion) ▪ construction, repair and upgrade of schools and hospitals (US$23 billion) ▪ environmental projects such as flood control, sewage and water treatment systems (US$19 billion)
Algeria	150	A new infrastructure and public works five year plan (2009-2013) is to be announced. This plan is expected to be around US$150 billion, and will mainly be spent on infrastructure projects (roads, ports, public utilities), as well as the construction, transportation and water works sectors.
South Africa	60	The 2008 budget committed the government to spend a cumulative US$60 billion over the next three years on infrastructure. A large portion of this spending will go to power generation, with the revamping of power-stations and two new coal fired power plants. US$8 billion will go to transportation, including the improvement of rail infrastructure, expanding harbors and ports and the construction of a liquid fuels pipeline.
Germany	40	In January 2009 the government passed a package including €17 billion to be devoted to public infrastructure projects such as roads, schools and hospitals. An earlier stimulus package in November 2008 included: ▪ funding an energy efficiency program from 2009 to 2011 (€3 billion) ▪ raising state development bank KfW's infrastructure programs for local authorities (€3 billion) ▪ establishing an innovation and investment program for transport with €1 billion in both 2009 and 2010 ▪ €200 million for specific regional projects.
India	34	The government has released two fiscal packages (in December and January) with an infrastructure focus. Highlights include: ▪ announced funding to support a Public-Private-Partnership (PPP) program of US$20 billion in the highway sector and port and power projects ▪ India Infrastructure Finance Co Ltd (a govt-owned special-purpose enterprise) authorized to raise US$2.1 billion by March 2009 to support financing of around 60 highway projects through PPP ▪ IIFCL authorized to raise an additional US$6.25 billion in tax-free bonds for refinancing bank loans to infrastructure projects ▪ Non-bank finance companies dedicated to infrastructure financing have been allowed to raise funds from multilateral or regional institutions and will be provided with additional liquidity of up to US$5.15 billion
Australia	21	On December 12 the government announced an A$4.7 billion (US$3.1 billion) infrastructure program. The program will be financed with A$2.5 billion of new money and A$2.2 billion of previous commitments. The package covers three years but is frontloaded with most of the spending happening in the next two years. It includes A$1.2 billion to be spent on railway construction. The package will also bring forward A$711 million in road funding and another A$1.6 billion will fund construction projects on the nation's university and college campuses. The 2009 budget announced in May included a further A$22 billion on infrastructure over four years. The largest component is for transport (particularly rail), with funding also available for the Clean Energy Initiative, education and health
Italy	23	The government has announced a three-year fiscal stimulus package including €16.6 billion (US$23.7 billion) dedicated to infrastructure spending - the largest portion of the package. The packiage includes projects such as ▪ a suspension bridge linking the island of Sicily to the mainland ▪ the national rail network (first phase of the high speed rail link Milan-Genoa) ▪ public transport (metros in Sicily and the third metro line in Rome) ▪ the MOSE of Venice (flood barriers) ▪ national highways, broadband internet, school building modernisation and renewable energies
Argentina	21	In December 2008, the Argentine Ministry of Public Works launched a ARS71 billion (US$20.7 billion) public works plan. ▪ 60 percent of resources will be allocated to road infrastructure projects and social improvements ▪ 40 percent will be dedicated to improving and expanding the power, natural gas and public transport sectors.
Taiwan	17	In January 2009, Premier Liu announced a stimulus package to invest an additional TWD500 billion (US$16.6 billion) in public infrastructure over the next four years. Major projects which had already recieved US $133 bn in funding cover transportation network, industrial development, urban and rural development, and environmental protection
France	15	Measures unveiled in early December 2008 include: ▪ €4 billion on infrastructure (including expenditures on roads, highways, and hospitals), research and universities, defence and security ▪ €4 billion for modernizing railways, energy and postal services ▪ €2.5 billion to local or municipal governments for various infrastructure-related projects
Spain	13	In November 2008 Spanish PM Zapatero outlined a package including the following infrastructure-related priorities: ▪ €8 billion for municipal public investment in urgent public works (effectively doubling the current budget for municipal infrastructure projects) ▪ €600 million for "environmentally friendly" projects in energy conservation and municipal water management ▪ €400 million for improvements to police and military installations ▪ €30 million for the tourism sector.
EU	8	The European Investment Bank will provide €6 billion (US$8 billion) worth of additional lending for energy, climate change and infrastructure, in addition to new infrastructure spending at the member state level

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