ARCADIS Design & Consultancy for natural and built assets

# THIRD GLOBAL INFRASTRUCTURE INVESTMENT INDEX 2016

## BRIDGING THE INVESTMENT GAP

# FOREWORD

Our world is facing major challenges from rapid urbanization requiring better mobility for citizens, to climate change being taken evermore seriously, with COP21 seeing countries commit to lowering greenhouse emissions. As a result the urgency for new and improved sustainable infrastructure in countries around the world is increasing. However infrastructure projects are continually delayed through lack of investment, even though the appetite to invest is evident.

In this environment, there is growing global awareness that private investment in infrastructure can deliver much needed projects more cost effectively, and crucially quicker, than government sponsored schemes. In addition, tighter government spending in core markets means that project sponsors are increasingly turning to private finance to bridge the investment gap. The infrastructure market is truly global. Contractors and operators alike are looking for new market frontiers, with investors searching further afield for assets to invest in. However structuring the deals to be "bankable" remains a challenge for many organizations.

The Third Arcadis Global Infrastructure Investment Index (GIII) shows which markets are most attractive to both public and private investors, and the analysis highlights why this is the case, revealing where core opportunities lie. It also explores the issues affecting each region and the conclusions support investors, contractors and project sponsors alike in ensuring that the investment gap is bridged successfully.

Rob Mooren

Global Director, Infrastructure

> *Infrastructure is an increasingly popular asset class. In times of trouble and uncertainty the desire to invest in infrastructure increases. It is long term, stable and will be around in 30 years. The biggest market still massively undeveloped is the US, and we can all get excited about that.* **Matthew Cutts, Global Leader - Financial Institutions, Arcadis**

# INTRO

The World Economic Forum estimates that the current global investment gap for infrastructure is $1tr per annum against an annual global investment demand of $3.7tr. Between now and 2030 the world is facing a vast $14tr shortfall.

At the same time the world is struggling with the economic impact of low oil prices which is slowing growth, lowering commodity prices, and creating political instability. A greater focus is placed on climate change and global urbanization, increasing population density. This is further driving infrastructure demand, meaning that sustainably building, and effectively operating the kind of infrastructure that boosts economic growth is more vital than ever before. Better transit, efficient freight networks, reduction of congestion, improved connectivity, greater capacity, better communications, more efficient water systems, clean energy, stable power supplies and growing aviation assets are vital tools in creating stronger, better connected economies.

Infrastructure as an asset class is therefore becoming increasingly attractive to private investors, from pension funds looking for low risk, economically regulated assets, to banks working with experienced contractors to finance large scale projects. With an abundance of private money in the market, privatization of core infrastructure assets in mature markets is fetching values far in excess of those originally anticipated, and raising much needed capital for the public sector. In many cases this is subsequently being reinvested in infrastructure and a new trend of asset recycling is emerging.

Yet for many reasons there remains a shortage of projects that are structured in a way that gives investors the long term certainty that they need, and there is a growing desire among the public sector to tackle this. The investment gap can be closed by structuring projects in a way that satisfies all stakeholders, from governments, to the general public and investors.

To lower (long term) risks private investors pay increasingly more attention to benchmark projects on sustainability. For existing portfolios they look to improve their returns by optimizing operations of their existing assets through asset management. Contractors are focussed on ways to improve their processes and control their costs better, for example by implementing new technologies or by restructuring their supply chain.

# HIGHLIGHTS

- **Singapore** remains the most attractive market for infrastructure investment for the third consecutive edition of the GIII
- **The US** is one of the most attractive markets for investors with a ranking of 8th, supported by massive investment needs and a huge pipeline of opportunities
- **Germany** and the **Netherlands** both rose one place in the index since 2014 confirming their status as stable, legally sound markets with good deal flows
- At 9th place the **UK** is among the highest risers in the index gaining 4 places since 2012
- The €315bn Juncker Plan is creating more interest in Public-Private Partnerships (PPP) deals in **Europe** as it highlights opportunities and provides enhanced transparency
- Stable Middle Eastern countries such as **Qatar** and the **UAE** which rank 2nd and 3rd in the index, could use their high ranking to encourage more private investment in infrastructure as budgets come under pressure from lower export earnings
- **Saudi Arabia** fell three places to 15th from 12th due to a decline in the relative size and dynamism of the market and the impact of relatively low infrastructure scores
- **Australia** has seen its ranking fall from 9th to 11th through lower scores on business risk and ease of doing business, however new opportunities are still attracting leading investors
- **China** has held stable at 17th place despite slower than anticipated growth, yet new opportunities could interest private finance
- **Chile** remains the most attractive infrastructure investment market in Latin America
- **Argentina** may be one of the least attractive investment markets today in 40th place, but recent political changes are creating some market optimism among investors
- **Brazil** has become less attractive to investors as the country struggles with political instability following a huge ongoing corruption investigation
- Eastern European markets are attracting much interest from contractors and investors illustrated by **Romania's** five place rise on the index since 2012 to 32nd from 37th
- Short term risks may act as barrier to project funding as we see four of the top ten countries ranked in the Index carrying a higher risk.

# RESULTS

The findings of the Third Global Infrastructure Investment Index (GIII) 2016 highlight that the most attractive markets for investors remain those with the strongest growth potential, most secure business environments, well established legislative and regulatory systems and stable political environments. As a result, markets such as Singapore, Canada, Qatar, the UAE, Norway, Sweden, Malaysia, UK, USA and the Netherlands remain the top 10 locations in the world in which to invest in infrastructure.

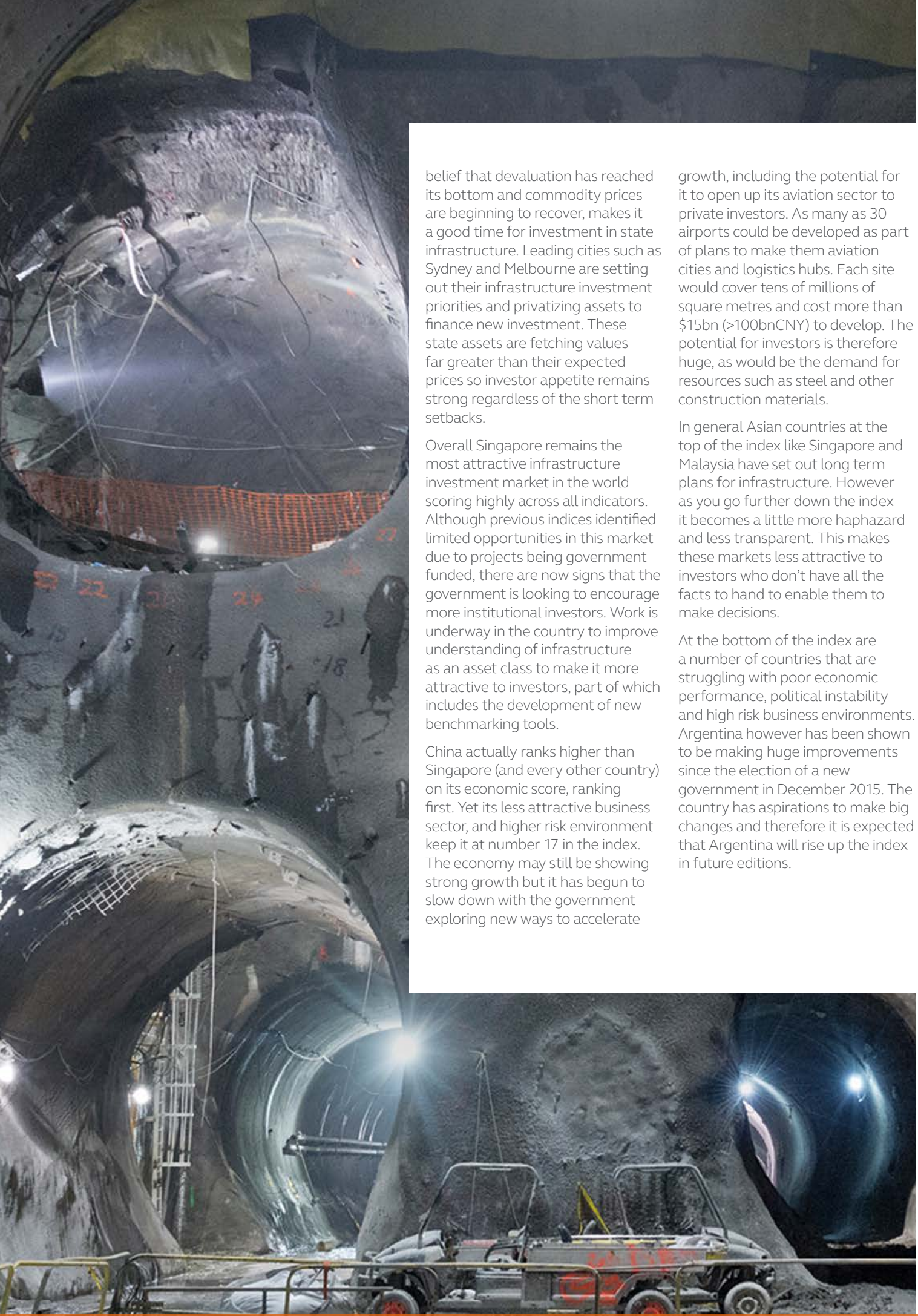
The USA in particular is seeing a great deal of interest, moving it up the index from 11th in 2012 to 8th in 2016. This rise is driven by its recently revived solid economic position, low risk environment and strong financial sector. Given the massive opportunities in the country, there is a lot for investors to get excited about. In the transport sector alone the investment gap is estimated at around $86.5bn per annum (see regional analysis). States are under more pressure than ever before to bring in private investment and new models have been developed to satisfy investor risk appetites (see pages 10-11).

European countries remain among the most stable, mature and attractive investment markets, with eight of the top 20 ranked markets in Europe. Strong deal flows and years of experience with PPP mean that investors have much needed certainty in these markets particularly in the Nordic states, UK, France, Germany and the Netherlands. Among the most attractive markets is the UK which has risen from 13th in 2012 to 9th in 2016.

However, economic challenges have affected the whole region particularly in Continental Europe, limiting growth and prompting the European Union to launch a vast program to mobilize investment in economic infrastructure known as the Juncker Plan. A key part of this €315 billion initiative is to create a European database of projects providing an open platform for PPP deal flow across Europe. By increasing both opportunity and transparency for private investment, the program is addressing issues that have held back investment in economic infrastructure. Investors are keen to invest in these markets but a lack of well structured "bankable" projects is resulting in limited opportunities.

Opportunities have also been limited in Middle Eastern countries despite their high ranking in infrastructure investment attractiveness. However, falling export revenues are putting pressure on future spending. Qatar and the UAE have traditionally funded infrastructure through the public sector, but recent new legislative changes in Dubai show that the UAE is opening up to private finance.

Australia has also been hit by economic turbulence in the past two years which has seen its ranking fall from 9th to 11th. Looking ahead though, there are many reasons to be enthused about the market. The



belief that devaluation has reached its bottom and commodity prices are beginning to recover, makes it a good time for investment in state infrastructure. Leading cities such as Sydney and Melbourne are setting out their infrastructure investment priorities and privatizing assets to finance new investment. These state assets are fetching values far greater than their expected prices so investor appetite remains strong regardless of the short term setbacks.

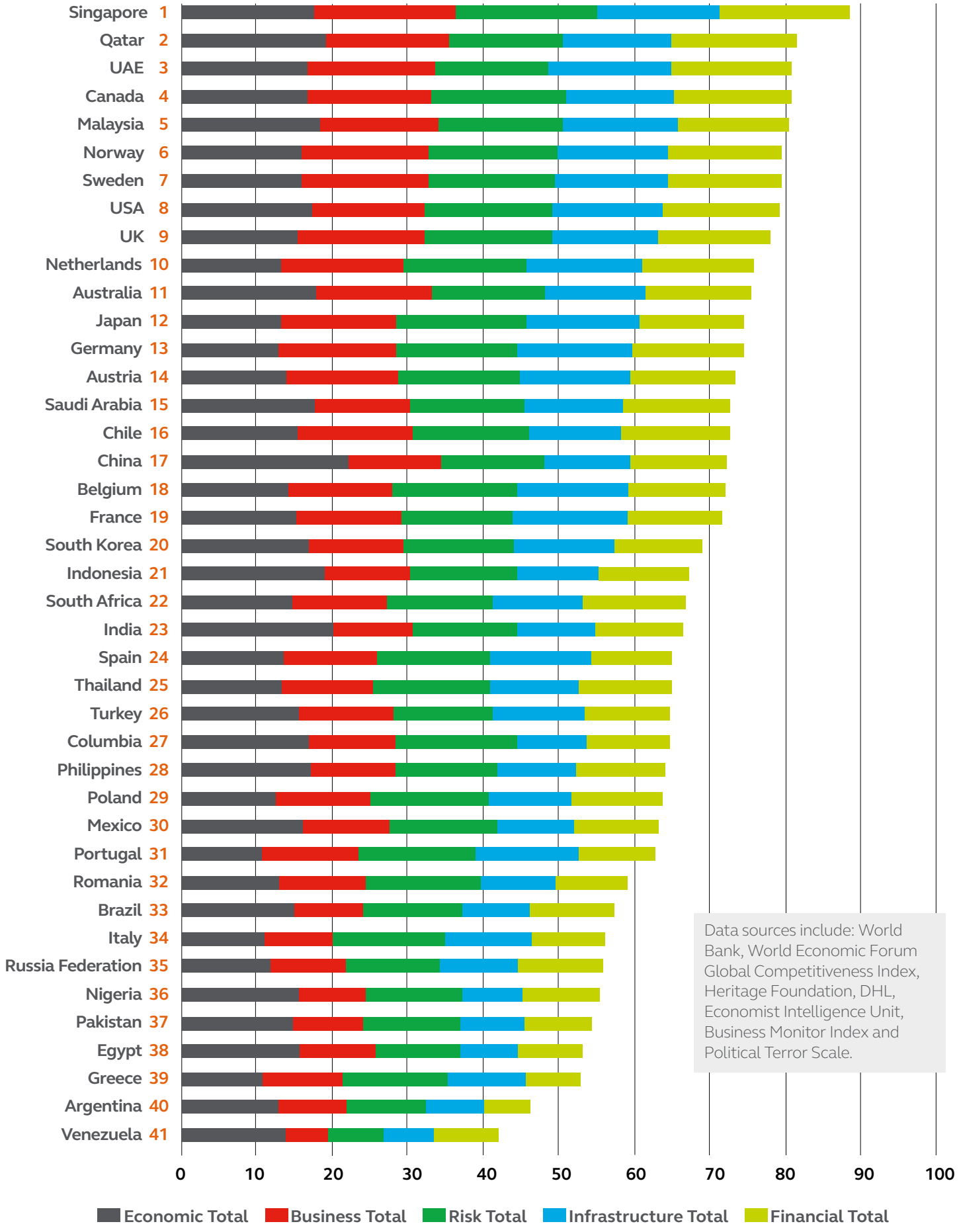
Overall Singapore remains the most attractive infrastructure investment market in the world scoring highly across all indicators. Although previous indices identified limited opportunities in this market due to projects being government funded, there are now signs that the government is looking to encourage more institutional investors. Work is underway in the country to improve understanding of infrastructure as an asset class to make it more attractive to investors, part of which includes the development of new benchmarking tools.

China actually ranks higher than Singapore (and every other country) on its economic score, ranking first. Yet its less attractive business sector, and higher risk environment keep it at number 17 in the index. The economy may still be showing strong growth but it has begun to slow down with the government exploring new ways to accelerate growth, including the potential for it to open up its aviation sector to private investors. As many as 30 airports could be developed as part of plans to make them aviation cities and logistics hubs. Each site would cover tens of millions of square metres and cost more than $15bn (>100bnCNY) to develop. The potential for investors is therefore huge, as would be the demand for resources such as steel and other construction materials.

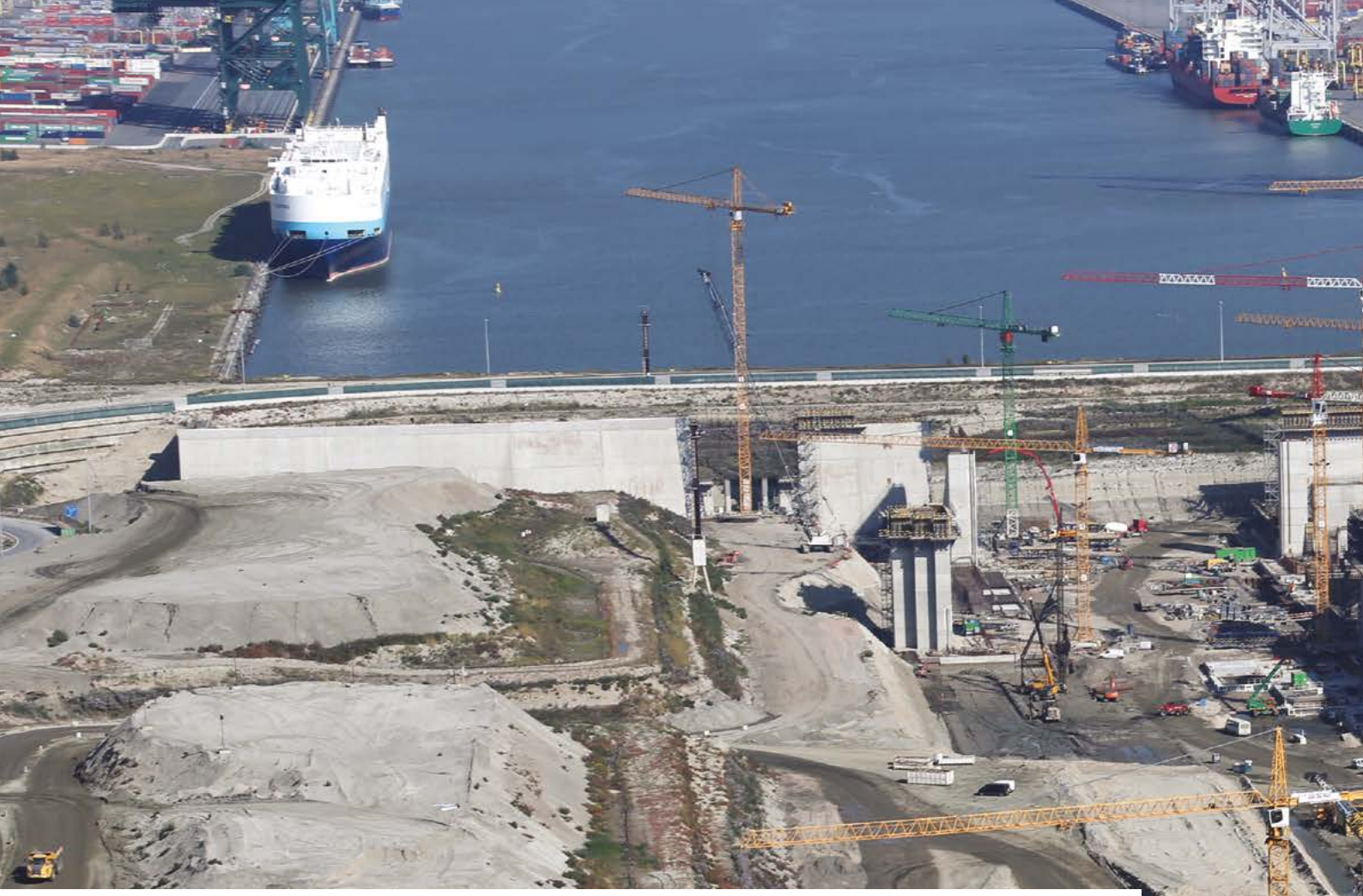
In general Asian countries at the top of the index like Singapore and Malaysia have set out long term plans for infrastructure. However as you go further down the index it becomes a little more haphazard and less transparent. This makes these markets less attractive to investors who don't have all the facts to hand to enable them to make decisions.

At the bottom of the index are a number of countries that are struggling with poor economic performance, political instability and high risk business environments. Argentina however has been shown to be making huge improvements since the election of a new government in December 2015. The country has aspirations to make big changes and therefore it is expected that Argentina will rise up the index in future editions.

FIG 1 - **GLOBAL INFRASTRUCTURE INVESTMENT INDEX 2016**




Data sources include: World Bank, World Economic Forum Global Competitiveness Index, Heritage Foundation, DHL, Economist Intelligence Unit, Business Monitor Index and Political Terror Scale.



# METHODOLOGY

The Global Infrastructure Investment Index (GIII) ranks countries according to their relative attraction to infrastructure investors in the long run (5+ years). This assessment is based on national statistics and open source data focused on anticipated demand for infrastructure investment, ease of doing business and comparable levels of investment risk. A high weighting is given to indicators of dynamism in a national economy.

The ranking uses 24 indicators across five categories:

1) Economic environment (relative strength of demand for infrastructure investment, based on indicators such as GDP growth, population growth, etc.)
2) Business environment (how attractive a country is for investment, based on indicators such as ease of doing business and freedom from corruption)
3) Risk (how much risk a country poses to the security of investment returns, based on indicators such as the political terror scale, strength of investor protection etc.)
4) Infrastructure (relative scale of infrastructure opportunity and capacity to deliver, based on indicators such as overall quality of infrastructure, local supplier quality, etc.)
5) Financial environment (degree of support to infrastructure investment provided through the financial environment, based on indicators such as extent and effect of taxation, availability of financial services, etc.)

The GIII measures the long term attractiveness of countries as destinations for infrastructure investment. However, short term fluctuations in commodity prices and political stability for example, could potentially introduce short term turbulence affecting investment decisions related to specific countries.

In the 2016 GIII, we have compiled additional indicators for strength of currency, credit rating, political stability and dependence on commodity earning that are used to highlight the degree to which a country has been exposed to short term economic turbulence. Our view is that these factors could potentially have a material effect on investment decisions over the next 2-3 years, and as a result are an important aspect of a country's overall ranking.

# SHORT TERM RISKS

For a better overall picture of the potential to invest in a country's infrastructure, the short to medium term factors which act as a barrier to investment were also considered in 2016. These barriers include currency devaluations, exposure to weak commodity prices, loss of credit worthiness and increased insecurity, as well as the global slowdown driven by China's deceleration in growth. The fact that four of the top ten locations are exposed to multiple material short-term changes in business and security environments highlights how essential it is to also now analyze these short to medium term factors.

Figure 2 analyses the short term risks and highlights the potential investment barriers in light grey. In the final column we use a Red (high risk); Amber (medium risk) or Green (low risk) analysis to identify the short term threat to infrastructure investment[2]. For example, the resource exposure of hydrocarbon exporting countries is causing a large decrease in income and threatens to affect spending in these locations. In some instances, for example in the UAE, this could in turn open up more opportunities for private investment, as governments seek alternative funding mechanisms for their projects. In other cases it means project pipelines may be re-evaluated as has happened in Saudi Arabia (see short term RAG rating on page 22).

FIG 2

| REGION | GII RANK 2016 | CURRENCY PER 1 USD (% CHANGE SINCE AUG 14) | CREDIT RATING (% CHANGE IN 12 MONTHS) | RESOURCE EXPOSURE (% OF GDP = COMMODITY EXPORTS) | TERRORISM (GTI SCORE) TERRORISM (GTI SCORE) | SECURITY (CHANGE IN PEACE INDEX %) | RAG |
|---|---|---|---|---|---|---|---|
| Singapore | 1 | 13% | 0% | 32.6% | 0 | -1 | G |
| Qatar | 2 | 0% | -1% | 57.3% | 0 | 7 | A |
| UAE | 3 | 0% | -4% | 45.0% | 1.045 | 5 | R |
| Canada | 4 | 24% | -1% | 6.0% | 2.297 | 2 | R |
| Malaysia | 5 | 25% | -3% | 9.0% | 3.579 | 0 | R |
| Norway | 6 | 29% | 0% | 21.1% | 2.738 | 3 | R |
| Sweden | 7 | 20% | -1% | -1.8% | 3.083 | 2 | G |
| USA | 8 | 0% | 0% | -1.6% | 4.613 | -2 | G |
| UK | 9 | 16% | 1% | -2.8% | 5.613 | -8 | G |
| Netherlands | 10 | 19% | 1% | 1.0% | 0.429 | 0 | G |

# REGIONAL ANALYSIS

# AMERICAS

## REDISCOVERING AMERICA

The US has risen to 8th position from 11th in 2012 in how attractive it is for investing in its infrastructure. This rise is driven by the country's overall more recent solid economic position, low risk environment and strong financial sector. When this environment is coupled with the multitude of opportunities becoming available in the country there is a lot for investors to get excited about.

After the absence of a long term budget, transport infrastructure has suffered from widespread under investment and reactive maintenance. However in December 2015 the government finally approved the Fixing America's Surface Transportation (FAST) Bill, giving certainty to states over the level of investment in transport infrastructure to be received for the next five years. The American Association of State Highway Transport Operators (AASHTO) has stated that $57.5bn of the $305bn budget is to be directed into highways and transit related infrastructure over the next five years during this time. Although this ends previous stagnation and is a very positive sign of progress, sadly it is still less than half of the $120bn to $144bn per year that AASHTO says is required.

State transport authorities are therefore turning their attention to attracting private investment, and international involvement more than ever before. However, concessionaires must be mindful that for these states (some of which are new to private finance), there is a requirement to maintain local involvement. This is due to the increasingly powerful link between

| COUNTRY | 2016 | 2014 | 2012 | TREND | RAG* |
|---|---|---|---|---|---|
| Canada | 4 | 4 | 3 | ←→ | R |
| US | 8 | 9 | 11 | ↑ | G |
| Chile | 16 | 14 | 10 | ↓ | A |
| Colombia | 27 | 27 | 28 | ←→ | R |
| Mexico | 30 | 26 | 27 | ↓ | G |
| Brazil | 33 | 32 | 31 | ↓ | R |
| Argentina | 40 | 39 | 39 | ↓ | R |
| Venezuela | 41 | 41 | 41 | ←→ | R |

*SHORT TERM RAG RATING

> *In the US it is very challenging to really quantify where the long term operational and maintenance costs are going to be. It is therefore harder to make deals and get the private sector to commit to maintain and operate facilities long term, and so appetite for that is slowing. As that occurs we know that there is still large demand, and as a result design-build gap-finance is becoming more popular.* **Wassim Selman, North America Leader - Infrastructure, Arcadis**

transport investment and job creation, and because public opinion is key when garnering support for projects.

However, the US scores relatively lower in the GIII for its business environment due to many states having underdeveloped government legislation, low transparency and in some states and institutions a framework that doesn't encourage private investment. In fact, according to the World Bank, 33 of the 50 states currently have legislation in place for private investment in infrastructure. If they do not have the legislation in place for private investment it not be possible to encourage private investment. However, of these 33 states California, Texas, and Florida (receiving the highest portion of highway and transportation infrastructure spend) are included, showing that progress is happening and, crucially, happening in the right locations.

Change is afoot however, with states increasingly pursuing private finance and putting legislation forward to support this. At the same time, the US is also seeking to use methodologies that suit the risk appetite of transport agencies, investors and contractors, as well as politicians and the general public. A reluctance to define long term operation and maintenance costs, and uncertainty over toll revenues means that traditional PPP contract structures are falling out of favor and design-build gap-financing is gaining ground. This kind of structure commonly sees concessionaires financing construction using low interest bank finance or cash from institutional funds, which is repaid through annual availability payments from the asset owners. In addition, this model is allowing the states to raise local revenue from the new asset by charging for the use of "managed lanes". In this structure the revenue risk remains with the state and the availability payments are instead fixed based on quality criteria. Another advantage of this structure for the states is that they have an alternative financing source, to the bond markets that in some cases have been over used.

Not surprisingly, given the attractiveness of the market, projects currently under development are seeing aggressive competition on cost and an increase in the number of contractors bidding for them. High profile projects such as multi-billion dollar bridges are particularly sought after, with recent tenders attracting more than 10 consortia per project.

Against this backdrop there remains a mixed picture regarding acceptance of private investment. To really bridge the infrastructure investment gap and ensure that economic development moves forward, more incentivization from federal government is needed.

One market where federal government has acknowledged this need is neighbouring Canada, which is ranked 4th in the GIII for the second time in a row. This is thanks to its mature financial sector, low risk profile and strong business environment. For major schemes to secure federal funding, around 25% of private finance is required. Like the US, Canada has suffered from years of under investment in its infrastructure. This is something that the government is seeking to tackle, most notably through the 2014 New Building Canada Plan which earmarked $53bn in investment over the next decade. This was further compounded by the 2016 federal budget which is aimed at growing the economy by investing in public transit, clean technologies and housing. It outlined investment of $120bn over the next 10 years. Development impacts from this are expected to be significant, with Toronto expected to be a major focus. Given the private sector is already investing in highways, rail, hospitals and airports, Canada is considered to be wide open for investors as the government seeks to catch up on infrastructure delivery.

# LATIN AMERICA

A climate of poor business confidence continues to hold South American countries back in the GIII, and low commodity prices and currency depreciations have negatively impacted on the region. Most significantly Brazil – Latin America's biggest economy – is wrestling with the fall out of a corruption investigation that has targeted the biggest companies in the country and gone straight to the heart of government. Uncertainty over who will be charged next and what will happen with the political leadership of the country is holding back investment in infrastructure and blocking international interest.

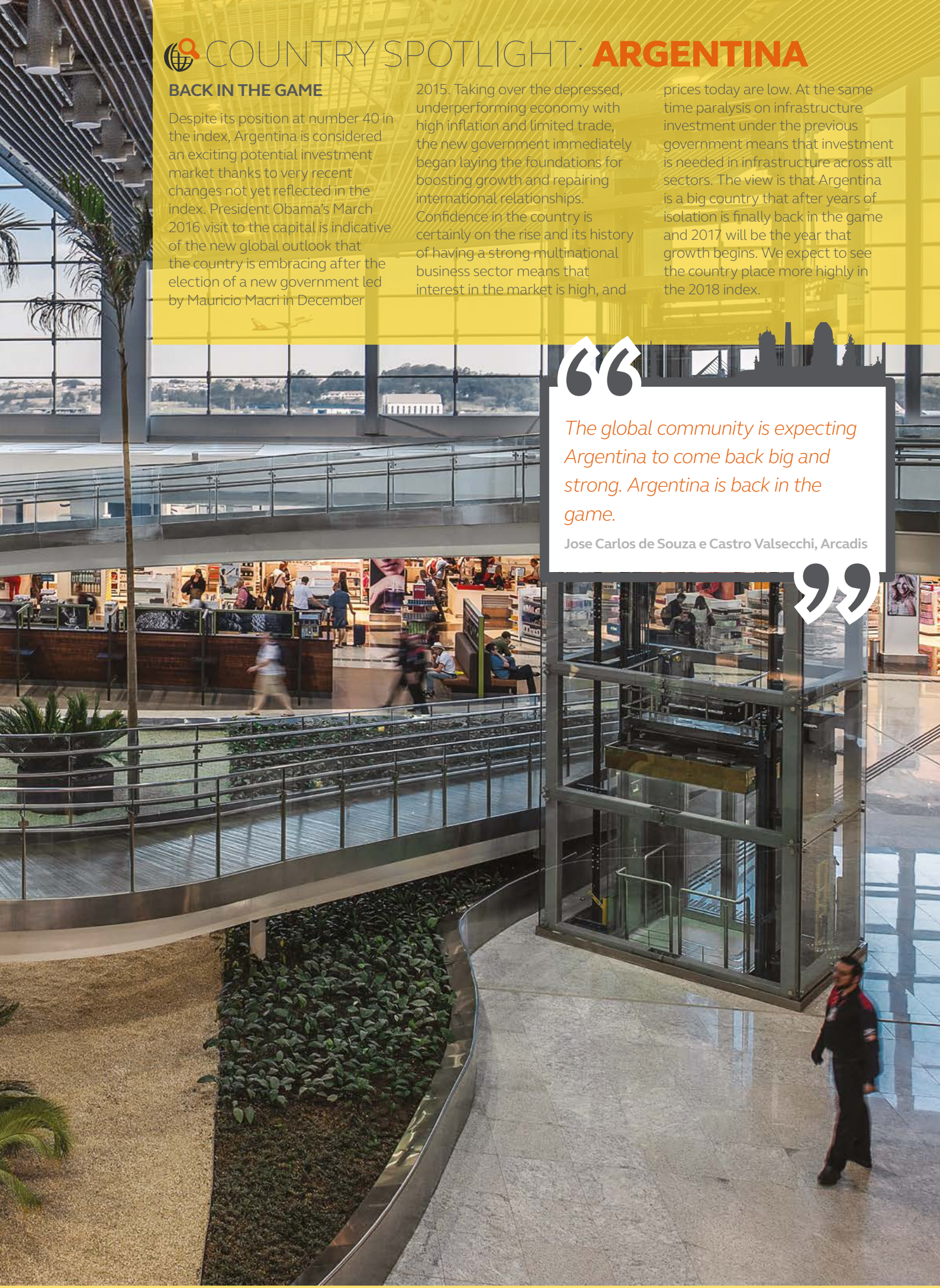
That said, there is a strong feeling that once the political fallout from the scandal is concluded Brazil will again become a high potential market thanks to its large economy, and major infrastructure needs. Its regulations and institutional capacity for private finance are good and the current investigations have triggered a process of change within government. But the political uncertainty will not be resolved in the short term, and for now the country is playing a waiting game as the investigations are concluded.

On the opposite side of the continent, Chile remains the most attractive Latin American market to invest in at number 16 in the index. Thanks to its hard earned reputation as a stable and serious market, Chile's classification of lower risk therefore makes it more attractive to investors. It has embraced PPP for some of its infrastructure but project opportunities remain limited for the 6th largest economy in Latin America (according to the IMF).

# COUNTRY SPOTLIGHT: ARGENTINA

## BACK IN THE GAME

Despite its position at number 40 in the index, Argentina is considered an exciting potential investment market thanks to very recent changes not yet reflected in the index. President Obama's March 2016 visit to the capital is indicative of the new global outlook that the country is embracing after the election of a new government led by Mauricio Macri in December 2015. Taking over the depressed, underperforming economy with high inflation and limited trade, the new government immediately began laying the foundations for boosting growth and repairing international relationships. Confidence in the country is certainly on the rise and its history of having a strong multinational business sector means that interest in the market is high, and prices today are low. At the same time paralysis on infrastructure investment under the previous government means that investment is needed in infrastructure across all sectors. The view is that Argentina is a big country that after years of isolation is finally back in the game and 2017 will be the year that growth begins. We expect to see the country place more highly in the 2018 index.



> *The global community is expecting Argentina to come back big and strong. Argentina is back in the game.*
>
> **Jose Carlos de Souza e Castro Valsecchi, Arcadis**

# REGIONAL ANALYSIS

## ASIA PACIFIC

Singapore has maintained its position as the world's most attractive market for infrastructure investment. Ranking consistently high across business, risk, infrastructure and financial indicators, and despite a slightly lower score for economic factors, it maintains a strong economic environment.

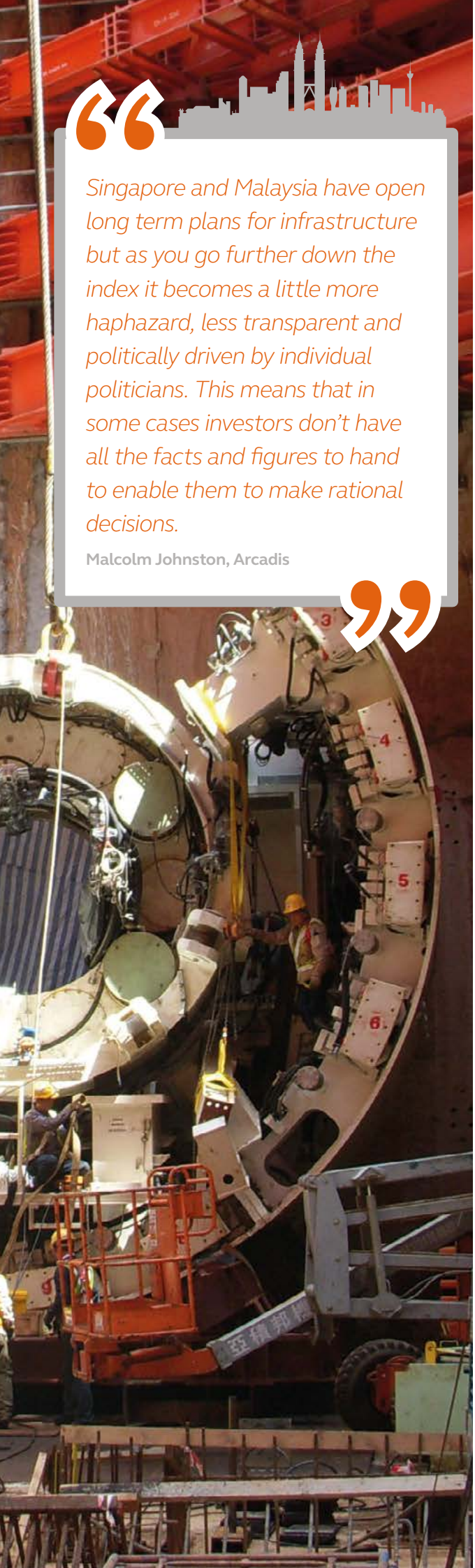
The government has consistently maintained spending on infrastructure, prioritizing this as a mechanism to support its growth ambitions. Currently the country invests around 5% of its GDP on infrastructure, equivalent to $20bn in 2015, and this continues to rise. By 2020 the country aims to invest 6% of GDP, the equivalent of $30bn, which makes the market even more attractive for investment. Priority schemes are planned in healthcare and transport, including expansion of Changi airport through the construction of a new fifth terminal.

Historically projects have been publically financed with some bank involvement during construction phases. However, the government is seeking to develop further involvement from institutional investors, with efforts led by the Monetary Authority of Singapore (MAS). Research is ongoing into improving the quality of information available surrounding infrastructure investment. In February 2016 a new initiative aimed at developing equity and debt investment benchmarking, was revealed by business school EDHEC, working in partnership with MAS.

Other attractive infrastructure investment markets in the region include Malaysia and Japan, both of which rose up in the GIII in 2016 compared to 2014 and 2012. Malaysia's strong economic performance and long term continued investment in infrastructure, for example its capital city's metro system, have made the market attractive for investment. However, in the short term investment is threatened by a number of risks including its currency depreciation against the dollar and a high profile, high level corruption scandal that has delayed some projects.

Japan has continued its rise up the index gaining four places to 12th from 2012. This is driven by high quality of infrastructure, low risk and a good business environment, with the government spending heavily to combat the effects of the recession. Nevertheless, the market continues to be held back by a poor economic environment.

Conversely China remains number one in the world in terms of its economic environment with strong growth continuing, albeit it at a slightly slower pace than previous years. Yet its less attractive business sector and higher risk environment keep it at number 17 in the index. In the short term, a decrease in political stability in the peripheral regions and peace in China could present challenges. China lost 15 places in the Global Peace Index, reflected in part by a 1% loss in credit worthiness over the past year.



> *Singapore and Malaysia have open long term plans for infrastructure but as you go further down the index it becomes a little more haphazard, less transparent and politically driven by individual politicians. This means that in some cases investors don't have all the facts and figures to hand to enable them to make rational decisions.*
>
> **Malcolm Johnston, Arcadis**

| COUNTRY | 2016 | 2014 | 2012 | TREND | RAG* |
|---|---|---|---|---|---|
| Singapore | 1 | 1 | 1 | ←→ | G |
| Malaysia | 5 | 7 | 7 | ↑ | R |
| Australia | 11 | 9 | 9 | ↓ | A |
| Japan | 12 | 15 | 16 | ↑ | G |
| China | 17 | 17 | 18 | ←→ | A |
| South Korea | 20 | 21 | 20 | ←→ | G |
| Indonesia | 21 | 23 | 26 | ↑ | A |
| India | 23 | 23 | 25 | ←→ | A |
| Thailand | 25 | 20 | 21 | ↓ | G |
| Philippines | 28 | 29 | 32 | ↓ | A |

*SHORT TERM RAG RATING

Despite its high economic position the slowdown of China's growth is likely to impact its position in the future. One of the ways that the government is seeking to mitigate the slowdown is by considering opening up its aviation sector to private investors. As many as 30 airports could be developed as part of plans which would see each become aviation cities and logistics hubs. With each site covering tens of millions of square metres and costing more than $15bn (>100bnCNY) to develop, the potential for investors is huge - as would be the demand for resources such as steel and other construction materials.

The plans remain at feasibility study stage, and more progress on aviation privatization has recently been made in the Philippines, which sits at number 28 in the index. Although it has risen from 32 in 2012, its strong economic performance is held back by a lack of transparency and concerns around corruption within government. However, opportunities exist in the market with a pipeline of PPP projects under development and many moving forward. According to the government's dedicated PPP office in Manilla, two major PPPs are under construction; the $832bn Metro Manilla Skyway (MMS) Stage 3 toll road and the $1.54bn MRT Line 7. A further 12 schemes have been awarded, and 14 more are in the procurement stages including development, operation and maintenance contracts for five airports. At the same time the country has been strengthening its legislation in a bid to attract more investors.

In the middle of the index Asia Pacific countries India and Indonesia have gained two places, and South Korea has gained one, mainly driven by strong economic rankings. The opposite is true for Thailand, where the low (31st) economic ranking and a relatively poor business environment has contributed to a loss of 5 places in the index.

The current slowdown in China, which is likely to influence the economies of the whole region, is not reflected in this long run data, but we can expect to see an impact, lowering the attractiveness of the region. In addition, high levels of dollar denominated debt, and significant depreciations against the dollar across the region (Malaysia 25%, Thailand 10%, Singapore 13%, South Korea 14%) could present significant short term barriers to investment as countries risk debt crises. Strong reliance on commodity exports for some countries could also present a challenge with low oil and gas prices. This is a concern for Indonesia (commodity exports 6.5% of GDP), Malaysia (9%), and particularly Singapore (32.6%).

# COUNTRY SPOTLIGHT: AUSTRALIA

## ASSET RECYCLING IS CREATING NEW OPPORTUNITIES

The new trend emerging from the world's 11th most attractive infrastructure investment market, Australia, is asset recycling. Public infrastructure assets are being sold to private investors and the money is being directly re-invested in other infrastructure schemes. Legislation has just been passed in Melbourne enabling sell off of its large container port, and the cash raised will go into easing pinch points in the metropolitan road system. In Sydney the AUS$10bn privatization of electricity transmission assets under a 99 year lease deal will be reinvested in road and rail projects over the next 8 years.

This privatization of state assets in energy and ports follows on from the successful privatization of the airports sector in the late 1990s. Consistent cost effective investment in the airports has ensured both efficient operations and strong returns on investment, and other sectors are now looking to follow suit. However, there has been less success in the model for PPP highway projects. There were some high profile failures where concessionaires carried use and price risk, but found that traffic forecasts were over ambitious. The result was that revenues were substantially below those expected, meaning that there is much less interest in these types of schemes today.

However, as a mature infrastructure investment market Australia has learned from its early forays into private involvement, and is continuing to attract high profile global investors into other types of opportunities. The November 2015 New South Wales Transgrid privatization, for example, included a Canadian pension fund and Middle Eastern investors partnering with local infrastructure funds.

Even so, some recent issues have seen Australia slip down in the GIII from 8th position in 2012 to 11th in 2016. Its risk profile has increased thanks to the devaluation of its currency against the dollar and low commodity prices affecting income. For a developed country its quality of infrastructure is also considered to be low. At the same time the politicization of infrastructure is an issue in some locations. For example state elections in Victoria in November 2014 saw the incoming labour government cancel a huge East-West Link Road, despite the 30 year concession contract having been signed and construction already being underway. Such a move sends out worrying signals to investors and contractors alike.

Despite these concerns, the horizon is bright for infrastructure in Australia and there are many reasons to be enthusiastic about the market. The belief that devaluation has reached its bottom and commodity prices are beginning to recover makes it a good time for investment in state infrastructure. Leading cities such as Sydney are setting out their infrastructure investment priorities and sticking to their plans. With state assets fetching values far greater than expected, investor appetite remains strong regardless of some short term setbacks.

> *Big money is being paid for Australian infrastructure assets at the moment, so in a way the drop in the index is more on historical issues rather than the current situation.*
>
> **Gareth Robbins, Arcadis**

# REGIONAL ANALYSIS

## EUROPE

European countries remain among the most stable, mature and attractive investment markets in the world. Strong deal flows and years of experience with PPP mean that investors have much needed certainty in these markets, particularly in the Nordic states, UK, France, Germany and the Netherlands.

However, economic challenges have affected the whole region, particularly Continental Europe. This has limited growth and prompted the European Union to launch a massive program to mobilize investment in economic infrastructure known as the Juncker Plan. A key part of the €315bn initiative – apart from providing additional funding - is to create an open database providing a platform for PPP deal flow across Europe. Known as the European Investment Project Portal, promoters are currently being invited to submit their projects under the sub-sectors of energy union, transportation, digital economy, social infrastructure and resources and environment. One of the positive side effects of the plan is that it is expected to accelerate Europe's transformation to low carbon energy generation, and the pipeline in deal flow for both new renewable and secondary projects is increasing.

By increasing both opportunity and transparency for private investment the program is addressing some of the key issues that have held back investment in economic infrastructure in Europe. Investors are keen to invest in these mature and stable markets but a lack of pipeline and well structured "bankable" projects has limited opportunities.

One market that remains strong in terms of deal pipeline is Germany, which at number 13 in the index offers good visibility of long term deal flow. But as a mature market with a strong supply chain risks are low and returns limited. It is also highly competitive; most activity is focussed in transportation and energy with investment needed in its electricity network. Secondary deals in energy and waste are on the horizon and the water sector is expected to offer opportunities in the future. Social infrastructure is also an active market with opportunities in hospitals, schools and education. This is also the case in France, although it is considered to be a much less attractive investment location than Germany. At number 19 in the index France has suffered from a lack of political continuity with regard to infrastructure investment, and a dependence on large schemes which have government involvement in the last 3-5 years does not help long term confidence.

However, confidence remains strong in the Netherlands which ranked 10th in 2016, having returned to the top 10 after a fall to 11th in 2014 from 9th in 2012. The stable, well organized, politically quiet market has a good legal system in place and there is a good deal flow. Long term infrastructure plans are clearly articulated giving confidence to investors.

Although there has been some positive economic movement in Continental European countries such as Spain and Italy recently, they remain in the lower half of the attractiveness index. Both have the potential to offer stable and secure revenues streams but their overall economic challenges limit growth potential. Italy in particular scores low across the attractiveness indicators with its business environment 38th of the 41 countries. This is driven by a poor score for the indicators covering government regulation, transparency of government policy making, the prevalence of foreign ownership, and the efficiency of legal frameworks. At the same time its economic ranking is the lowest in the index at 41st driven by poor economic and population growth prospects. There is some optimism however that the Renzi government is undertaking reforms that will address many of these issues, and could see Italy rising up the rankings in future indexes.

| COUNTRY | 2016 | 2014 | 2012 | TREND | RAG* |
|---|---|---|---|---|---|
| Norway | 6 | 6 | 6 | ←→ | R |
| Sweden | 7 | 5 | 5 | ↓ | G |
| UK | 9 | 10 | 13 | ↑ | G |
| Netherlands | 10 | 11 | 9 | ←→ | G |
| Germany | 13 | 14 | 14 | ↑ | G |
| Austria | 14 | 16 | 15 | ↑ | G |
| Belgium | 18 | 18 | 19 | ←→ | G |
| France | 19 | 19 | 17 | ↓ | A |
| Spain | 24 | 24 | 22 | ↓ | G |
| Poland | 29 | 30 | 29 | ←→ | G |
| Portugal | 31 | 31 | 30 | ←→ | G |
| Italy | 34 | 35 | 33 | ←→ | G |
| Russian Federation | 35 | 34 | 35 | ←→ | R |
| Romania | 32 | 36 | 37 | ↑ | A |
| Greece | 39 | 40 | 40 | ↑ | A |

*SHORT TERM RAG RATING

# REGIONAL SPOTLIGHT

## EASTERN EUROPE

Although not included in the original 41 country rankings, this report has taken a closer look at three additional key Eastern European markets: Czech Republic, Hungary and Slovakia. Whereas Romania has been selected as an exemplary country for Eastern Europe in the Index, infrastructure investment activity is more prolific in these countries. This is partly due to the European Fund for Strategic Investments (EFSI) or Juncker Plan, which finances several initiatives for Small and Medium Sized Enterprises in these countries. On the other hand, private investor interest in these countries is evidenced by the recent tender results of D4R7 Highway PPP in Slovakia, which came in on a very competitive level. Shortly after the Czech Republic has announced a similar Highways PPP tender.

While both Slovakia´s and Czech Republic´s overall rank is comparable to Romania, both countries score in the top half in terms of risk. This makes these countries an attractive investment location, especially when business risk is reduced via availability based PPP schemes. There has been increasing interest in these countries partly due to the amount of capital that has to be deployed and the fact that this capital has driven prices up in Western European countries. Early entrants into these markets are likely to find deals at cheaper multiples with less competition.

> *In Europe there is a lot of social and public need, and many project ideas and plans. A substantial amount of private sector money is available but the basic problem is that there aren't enough investable and bankable projects. There has to be a way of bridging that gap and finding solutions where we can improve investment readiness.*
>
> **Don Hardy, Global Leader - Business Advisory Infrastructure, Arcadis**

# COUNTRY SPOTLIGHT: UK

## A MATURE MARKET RISING UP THE INDEX

Having climbed from 13th position in 2012 to 9th in 2016 the UK is becoming an increasingly attractive market for infrastructure investment. This is thanks to its mature, stable, low risk business environment. Despite investing a relatively low proportion of its GDP into fixed capital, the UK has recently reiterated its commitment to major infrastructure projects, targeting investment to sectors such as rail and housing. Schemes such as High Speed 2, a £56bn railway improving north-south transport links, the £27bn Crossrail 2 project to improve connections between north and south London, and HS3, a series of multi-billion pound improvements to upgrade road and rail links between northern cities, are all set to open up opportunities to investors.

However the UK has some setbacks which prevent it from being in the top five most attractive markets. Investors dislike the prolonged process that accompanies decisions on infrastructure which are highly politicized. In a bid to delink infrastructure from party politics the government has created an independent National Infrastructure Commission to oversee and develop a long-term strategic plan for building effective infrastructure. This is considered to be a welcome move by investors.

Efforts to rebalance the UK economy by promoting growth and development in the north of England, through the Northern Powerhouse initiative, are also opening up opportunities for investment. Additionally, proposed transport projects like HS2 and HS3 are creating real estate and housing opportunities alongside their development. Devolution of transport powers to cities in the UK through the election of City Mayors means new opportunities outside of London, and the creation of regional investment programs controlled at a local level. Delivering major infrastructure projects will be a new proposition in some areas and structural support may be required.

One cloud on the horizon for the UK is the vote on membership of the European Union. Investors are already carrying out pre and post vote analysis to examine the implications of an exit, and deal flow has slowed as banks and contractors alike wait for the result of the vote. European firms in particular, who are major investors in the UK, are expected to respond negatively to an exit and the overall business community view is that remaining in the EU is the most attractive option.

Regardless of the imminent political issues, the UK remains an attractive market for infrastructure investment as the recent £2bn purchase of London's City Airport by Canadian pension fund the Ontario Teachers' Pension Plan shows. In winning the sale the group narrowly beat two Chinese bidders with a huge uplift in price for the airport, which was purchased for £23.5m in 1995[3]. The pension fund now owns five European airports, three of which are in the UK.

*Image used with kind permission of Grimshaw Architects*

*Investors see the UK as a good place to do business. What they dislike is the length of time it takes to make decisions on infrastructure and that it is highly linked to party politics. I think that the government's move to appoint an independent body in the NIC, to make recommendations on infrastructure is a welcome move to delink infrastructure from party politics.*

**Mac Alghita, UK Leader - Infrastructure, Arcadis**

# REGIONAL ANALYSIS

## MIDDLE EAST

In 2015 Qatar was the world's third richest economy in terms of GDP per capita. Its business environment and financial sectors are strong, and the country is investing heavily in its infrastructure. These factors make it the second most attractive investment destination in the index and see it maintain its position since 2012. This is despite Qatar's high level of resource exposure which has led to it reprioritizing spending, and an increased risk profile due to political instability in the wider Middle East.

Priorities for the emirate include new systems for transportation and improving the country's connectivity. A new port has been developed, in part, to support the import of materials needed to deliver ambitious spending plans that both satisfy the 2030 national vision and the more immediate FIFA 2022 World Cup. Huge investments have been undertaken and major projects are underway in airports, the railway network, light rail, highways, water supply and power provision.

To date Qatar's infrastructure has been wholly government financed and there is no sign that the emirate will seek to harness private investment in the near future. Opportunities are more likely to be in the operation and maintenance of existing assets, particularly in healthcare and education as the government seeks to ensure that its infrastructure remains of a high standard.

Conversely the UAE, which was third in the index, maintaining its position from 2014 and rising from 4th in 2012, is expected to encourage private finance into its infrastructure investments in future. In September 2015 the Dubai government issued a new law designed to encourage its officials to entertain PPP and start formulating their approach toward PPP programs. Interestingly the law allows for Build, Operate and Transfer (BOT) as well as Build, Own, Operate and Transfer (BOOT) schemes, and encourages private companies to approach government agencies with proposals which do not have to be led by the public sector.

At the same time the government is seeking to learn more about the potential for private finance by including proposals within project tenders that ask contractors to provide alternative funding options. This is seeing contractors working with banks or their government funding institutions to get funding in place, a lot of support for which is currently coming from Asia and the UK.

Although the low oil price has affected the UAE, Dubai has maintained its commitment to priority projects, especially those related to the hosting of the 2020 World Expo. Extension of the metro system and a host of commercial developments are moving ahead, with developers capitalizing on lower commodity prices and cheaper construction costs. For contractors it remains a highly competitive market.

Saudi Arabia at number 15 in the index has seen its attractiveness for infrastructure investment fall by three spaces as it struggles with reduced oil income and financial demands of fighting in the war in Yemen. Major projects have been cancelled or delayed, contractors are struggling financially and labourers have been leaving the Kingdom, indicating that work has indeed slowed significantly. Despite many ongoing discussions over the use of PPP, particularly in the aviation sector, it remains a high risk for investors due to the high level of political involvement in infrastructure. More awareness on the long term benefits and value that can be derived from PPP is also necessary if the sector is to take off in the Kingdom in the future. In the long term however the market remains an interesting one as the scale of its project plans are so huge, and investors and contractors alike remain interested in the market, preparing themselves for oil price recovery and the return of political stability to the region.

| COUNTRY | 2016 | 2014 | 2012 | TREND | RAG* |
|---|---|---|---|---|---|
| Qatar | 2 | 2 | 2 | ←→ | A |
| UAE | 3 | 3 | 4 | ←→ | R |
| Saudi Arabia | 15 | 12 | 12 | ↓ | R |

*SHORT TERM RAG RATING

Looking at the short-term RAG rating of the Middle East markets, Saudi Arabia and the UAE both were identified as high risk. Overall the short term rankings identified that the resource exposure of hydrocarbon exporting countries is causing a large decrease in income and threatens to affect spending in these locations. However in the UAE, for example, this could in turn open up more opportunities for private investment, as governments seek alternative funding mechanisms for their projects. In other cases it means project pipelines may be re-evaluated as has happened in Saudi Arabia.

*The whole point of Dubai's new law is to encourage its officials within the government to entertain PPP and start addressing the approach toward PPP programs. In my opinion we will see a huge transfer in the procurement methodologies towards PPP and I believe that in the next few years we will see some existing projects run on a PPP basis.*

**Sameer Daoud, Middle East Leader – Infrastructure, Arcadis**

# CONTRACTING: GETTING THE RISK RIGHT

Key to the success of any infrastructure project is a strong supply chain, and the world's leading concessionaires and contractors have long understood that by getting this right, risk is low and investors more forthcoming. Generating long term income through the range of PPP structures (which requires a significant early capital investment from contracting teams) is a highly attractive proposition for firms. So it is therefore not surprising that contractors today are using a number of strategies to enter into emerging high potential markets, deemed to have a big future in PPP/PFI/Design, Build, Finance, Operate and Maintain projects (DBFOM) and major project investment.

A decade ago this meant European contractors were investing in Canada, which has historically been an international leader in PPP arrangements and offered high returns to investors. This experience is now being transferred to the US, Latin America, Eastern Europe, Australia and the Middle East. By taking positions on smaller contracts, or by buying up local contractors, leading construction giants are familiarizing themselves with key growth markets and at the same time securing local supply chains, and understanding how the local legislation and procurement policies of major clients work.

At the top of the list is North America with its huge investment backlog. In the highways sector alone this is estimated by the American Association of State Highway Transport Operators to require between $120bn and $144bn per year between 2015 and 2020. However the allocated transport spend under the long awaited FAST Act is just $57.5bn per year. State transport authorities are therefore seeking private investment, and international involvement more than ever before, but it is essential that concessionaires and contractors remember that for these states, some of which are new to private finance, local involvement must be retained. The local market must be understood and utilized, especially if firms are to be successful beyond qualification stage when concessionaires and contractors inevitably find themselves in a price war.

However, to get the best price Departments of Transport (DoTs) and agencies must be prepared to pass on the risk aspects of the scheme. Holding on too tightly to risk in such projects prevents concessionaires and contractors from employing innovative construction and financing methods that will ensure infrastructure is delivered at the best possible value. It also means more cost to government agencies who have to ensure that resources are in place to manage these risks. This is not to say that agencies can't retain some control. The most effective contracting arrangements ensure that project owners and concessionaires can strike a balance creating true public-private partnerships.

Looking more long term, Latin American countries with poor infrastructure are at the top of the list for some contractors who have been buying smaller contractors to familiarize themselves with the markets. Argentina, Mexico and Chile in particular are attracting construction firms, who despite the financial and business risks see long term potential, and have confidence that measures currently being implemented to strengthen and increase transparency in procurement, will make projects more attractive.

The same strategy is being employed in Australia and Eastern Europe, where companies are establishing themselves today with a view to delivering the infrastructure of tomorrow. Bridges, highways, rail, transmission and power systems are all in critical need of investment and experienced firms are preparing to deliver as the markets for private finance mature.

Saudi Arabia too is considered to be a key future market. With a huge pipeline of schemes, particularly in the transport sector, being held back by low oil prices, contractors are expecting to capitalize on the opportunities once price recovery has been sustained.

Whatever the market, world scale concessionaires and contractors are carefully weighing up the risks and the opportunities before investing in new territories and bringing in their investors. For countries with huge infrastructure backlogs this is a very welcome development,

> *An investor needs to be able to capitalize on what is in place by coming up with innovative and cost effective solutions. If they can't do that they won't play in that market. Contractors are looking at where they can make a difference.*
>
> **Bob Learmouth, Global Leader - Contractors, Arcadis**

but to succeed these markets must work on strengthening their institutional readiness and ensure that government agencies are prepared to place the risk with the parties most able to manage it.

Top 10 countries by local supplier quality

| RANK | COUNTRY | SCORE |
|---|---|---|
| 1 | Japan | 300.00 |
| 2 | Austria | 292.62 |
| 3 | Germany | 290.47 |
| 4 | Belgium | 283.62 |
| 5 | Netherlands | 274.69 |
| 6 | USA | 269.77 |
| 7 | Sweden | 267.05 |
| 8 | Norway | 265.73 |
| 9 | UK | 265.60 |
| 10 | Canada | 265.33 |

Source: Arcadis' Third Global Infrastructure Investment Index 2016

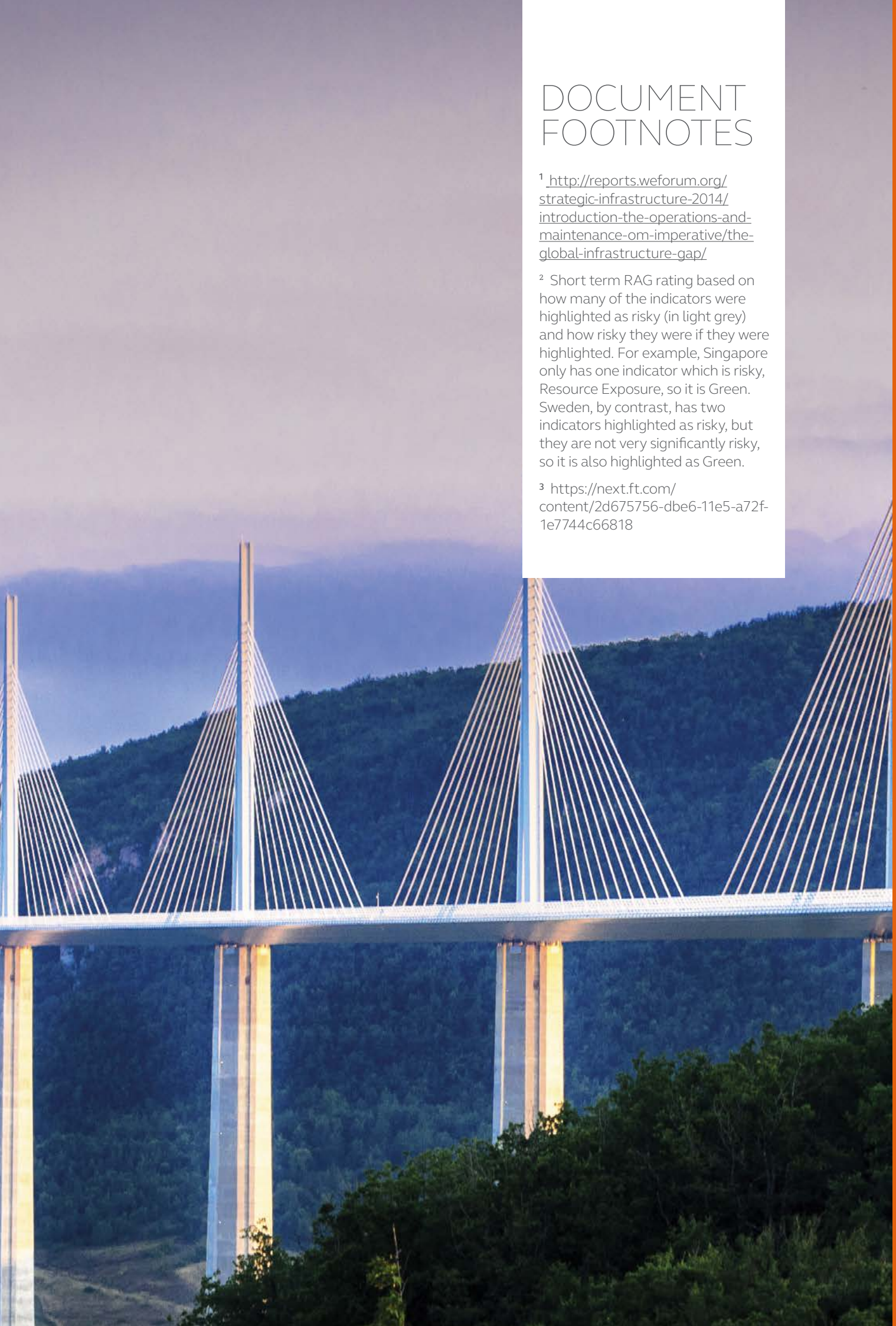
# CONCLUSIONS

Overall there is an urgent need for dialogue between the public and private sectors to close the funding gap, and unlock the huge community and business benefits from infrastructure investment. Political leaders need to scrutinize their preferred rules of engagement with the private sector, then set about creating the best possible conditions to deliver the targeted investment. As there are investors covering most risk profiles and infrastructure asset classes, the opportunity for improved infrastructure is huge, both in the short and long term. Contractors and concessionaires must also embrace new technology and understand local market nuances to achieve success. Only then can the best social, economic and environmental outcomes can be achieved for all parties.

- Robust and mature economies are generally the most attractive for long term infrastructure investment, however some of these markets offer relatively small opportunities. North America therefore with its mature, stable economy, major infrastructure backlog and massive investment gap has massive potential for investors.
- Infrastructure investment in a number of attractive markets has been hit by negative short term impacts such as currency devaluation, oil price decline and the slowdown of Chinese economic growth. Such impacts could affect the attractiveness of these markets in future indices. Similarly some positive short term changes, particularly those regarding changes of government or new project pipelines will impact countries positively.
- For investors these short term impacts can create opportunities. Governments with strong balance sheets may seek more investment from the private sector to maintain infrastructure spending. And for countries with devaluation issues dollar investors can expect to see the value of their assets rise in the longer term. For countries that have experienced a change in government the policy of an incoming government may be much more international and open to private investment.
- An abundance of private finance means that investors are seeking more "bankable" projects and turning to infrastructure as an asset class. Schemes such as the Thames Tideway in London demonstrate that private finance can be secured at competitively low rates – where the cost of capital itself was tendered – for major construction projects. By creating a secure and stable regulatory regime and offering low risk, stable returns the project will be delivered more cost effectively and at lower cost.
- Investors have different risk appetites and for some of the world's leading contractors high potential markets such as the US, Argentina, Mexico, Eastern Europe and the Middle East are key targets. By taking positions on smaller contracts, or by buying up local contractors, leading construction giants are familiarizing themselves with key growth markets and at the same time securing local supply chains, and understanding the local legislation and procurement policies of major clients. This effort will lower risk in these markets and encourage investors to participate in future schemes.
- Another measure which attracts investors is the creation of clearly articulated, long term infrastructure investment plans. More transparency over government plans is needed in many countries if private investment is to be achieved and the investment gap is to be bridged with private finance.

# APPENDIX

The 41 countries included for the Global Infrastructure Investment indices have been selected on the basis of where Arcadis' biggest infrastructure markets are located. However, for the 2016 Index additional research has been conducted to look specifically at wider Eastern European countries, covering Slovakia, Hungary and Czech Republic. Given the lack of data from previous editions on these markets, the rankings exist outside of the overall Index and feature as a spotlight in the European section.



# DOCUMENT FOOTNOTES

[1] http://reports.weforum.org/strategic-infrastructure-2014/introduction-the-operations-and-maintenance-om-imperative/the-global-infrastructure-gap/

[2] Short term RAG rating based on how many of the indicators were highlighted as risky (in light grey) and how risky they were if they were highlighted. For example, Singapore only has one indicator which is risky, Resource Exposure, so it is Green. Sweden, by contrast, has two indicators highlighted as risky, but they are not very significantly risky, so it is also highlighted as Green.

[3] https://next.ft.com/content/2d675756-dbe6-11e5-a72f-1e7744c66818

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