PwC Growth Markets Centre –
Realising opportunities along the Belt and Road
June 2017

Repaving the ancient Silk Routes

In this report

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Foreword

Belt and Road – a unique trans-national opportunity

Few people could have envisaged what the Belt and Road (B&R) entailed when President Xi of China first announced the concept back in 2013. However, four years later, the B&R initiative has amassed a huge amount of economic momentum.The B&R initiative refers to the Silk Road Economic Belt and the 21st Century Maritime Silk Road initiatives. The network connects Asia, Europe and Africa, and passes through more than 65 countries and regions with a population of about 4.4 billion and a third of the global economy. In many ways, the initiative serves as a blueprint for how China wants to further connect itself into the global economy and strengthen its influence in the region. The initiative has added fresh impetus to China and the rest of the world to promote regional cooperation and presented numerous opportunities for foreign companies to be involved.

A role for foreign companies

What was once perceived as China's dream is gradually now becoming reality, as the initiative matures. PwC has estimated that in 2016, the value of announced infrastructure projects across the regions within the B&R initiative surged by 47%. To realise an endeavour of this scale and maintain its momentum, Chinese enterprises are increasingly looking to partner with foreign companies which can play a pivotal role, not only with their world class skills and capabilities, but specifically in bringing their experience of delivering and managing projects in developing markets and establishing workable local relationships.

Foreign companies such as the American conglomerate General Electric and the French power equipment player Alstom have already become meaningfully involved in this trans-national, multi-sectoral initiative. General Electric reported that its total orders from Chinese engineering, procurement and construction (EPC) companies have increased threefold in the past year, of which 40% of equipment will be manufactured in China.

Not your typical infrastructure projects

However, despite the vast range and number of B&R opportunities, many of these are developed in complex conditions, not least because they are located in growth markets where institutional voids can prove to be hard to navigate. Inconsistencies in regulatory regimes and underdeveloped credit markets, together with weak existing infrastructure and a maturing talent market all combine to add further complexity for companies trying to deliver and manage these projects.

In addition to the challenges which are characteristics of operating in growth markets, companies also need to be cognisant of the specific B&R considerations. Given the transnational nature of these projects, geo-politics will play a greater role than normal, as regimes may change multiple times during a project's lifespan and companies must also anticipate greater operational challenges.

Preparing for success

Our report, *Repaving the ancient Silk Routes*, not only describes what the B&R initiative entails and China's motivation for driving such a significant programme, but more importantly explores where the real opportunities lie for foreign companies which are looking to get involved. It also provides insights as to how companies can successfully evaluate potential B&R projects and prepare themselves to navigate the specific challenges which characterise them. We firmly believe that with the correct approach, foreign companies can successfully navigate through these uncertainties and benefit from participating in the largest trans-continental infrastructure initiative the world has ever known.

As the Chinese saying goes, "树大招风" – which literally means "a tall tree attracts the wind" – a major strategy such as the Belt and Road Initiative inevitably finds itself having to navigate numerous obstacles. Only with the long-term development of assets can companies succeed in B&R. This is an exciting time of development not only for China and all those countries along the Belt and Road, but for the world.[1]

David Wijeratne
Growth Markets Centre Leader
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Mark Rathbone
Capital Projects and Infrastructure
Asia-Pacific Leader
Partner, PwC Singapore

Frank Lyn
Markets Leader
PwC China and Hong Kong

Chapter 1: Belt and Road – A global game changer

Gaining momentum

Since the announcement of the Belt and Road (B&R) initiative by the Chinese government in September 2013, the subject has generated considerable discussion and speculation, but several questions still remain unanswered, especially for those with a commercial interest. What is the B&R all about and how does it align with China's growth plans? What constitutes a B&R project, and if there any commercial opportunities for foreign companies, where are they and what are their chances of success?

However, despite the global desire for more official details and specifics, the Chinese government has continued to keep the details of the B&R vague and broadly defined. This has led many people to, perhaps too narrowly, conclude that it is purely part of China's geopolitical agenda, to balance and complement its progressive outbound acquisitions and investments in the developed markets. Furthermore, the initiative's focus on high growth developing markets has cast doubt as to its operational viability and investment returns due to the complex and unpredictable business conditions in these markets.

This information vacuum has resulted in cautiousness across the international community and deterred some investors from further exploring the commercial opportunities of the B&R initiative.

> *"In many ways, the initiative serves as a blueprint for how China wants to further connect itself into the global economy and strengthen its influence in the region. The initiative has added fresh impetus to China and the rest of the world to promote regional cooperation and presented numerous opportunities for foreign and Chinese companies to be involved. It is a driver for long term growth and expansion as well as corporate profitability. Therefore, strategically, companies need to be involved at an early stage to reap the long term benefits."*
>
> **Frank Lyn**
> Markets Leader
> PwC China and Hong Kong

To fill this information vacuum one needs to look into China's history. The B&R initiative is not a new idea, but rather the regeneration by the current Chinese government of the old and highly successful Silk Route dating back to the 2nd century BC, during the Han Dynasty era of China. The Silk Road was initially established around 130BC when Zhang Qian, a Chinese imperial official and diplomat, was sent westward by the Han Emperor Wudi to form alliances against the nomadic Xiongnu tribes. His journey to the West was viewed as the first step of Chinese contact with the Western world, and over the subsequent years the Silk Road became an important trade route and took significance as the beginnings of commercial relations between China and Western world. At its peak, the Silk Road stretched from Eastern China to the Mediterranean Sea.[2] The Silk Road underwent numerous periods of revitalization and decay over centuries. However, the overland trade route with European trade significantly diminished following the fragmentation of the Mongol Empire in the 13th century.[3]

The foundations of the new Silk Road Economic Belt were laid in 1999, prior to President Xi Jinping taking office, when the Chinese government made a concerted effort to promote overseas Chinese investments with its 'Go Out' policy.[4] Led by its state-owned enterprises (SOEs), China's overseas investments rose from US$3bn in 1991 to US$35bn in 2003.[5] This included the Chinese government initiating many discussions with developing countries and signing bilateral agreements to collaborate in financing and developing infrastructure in these countries. In 2013 President Xi Jinping took office[6] and the Silk Road Economic Belt was proposed during President Xi's trip to Kazakhstan later that year[7], followed by the Maritime Silk Road on a trip to Indonesia.[8] This culminated in the announcement of the B&R initiative in May 2014 at the Conference on Interaction and Confidence Building Measures in Asia (CICA).[9] Following this, the Chinese government established national policies under the B&R initiative, expedited existing outward-focused projects with the re-signing of the existing bilateral agreements and Memorandums of Understanding (MOUs), while other new projects were initiated.[10]

Figure 1a: The ancient Silk Road

Source: China.com[11]

Within the first year following the B&R announcement, in a show of its strong commitment to the programme, the Chinese government established the Silk Road Fund (SRF) with US$40bn.[12] Separately in January 2016, the Asian Infrastructure Investment Bank (AIIB) opened, and to date it has 57 signatories including China, with a further additional 20 prospective members.[13] By the end of 2016, it had approved the lending of US$1.73bn.[14] The AIIB has also engaged in co-funding projects with other international funding organisations such as the World Bank and the Asian Development Bank (ADB).[15]

Since the B&R announcement in September 2013, Chinese President Xi Jinping and his senior officials have visited some 37 countries across Asia, Europe, Africa, Latin America and Oceania to promote the B&R initiative. This has resulted in more than 100 countries and international bodies committing to participate in the B&R initiative and 56 countries and regional organisations issuing joint statements and proposals, with China announcing a commitment to bilateral cooperation for implementing the B&R initiative. China is also working with more than 20 countries on capacity-building projects in the manufacturing sector.[16]

At the time of writing, Latvia is the latest country – and the first in the Baltic Sea – to sign a Memorandum of Understanding (MOU) with China, effectively signalling its participation in the B&R initiative in November 2016.[17] China and 17 other countries along the B&R routes have also jointly built 46 China Overseas Economic and Trade Cooperation Areas (OETCAs), creating more than 60,000 jobs for locals.[18]

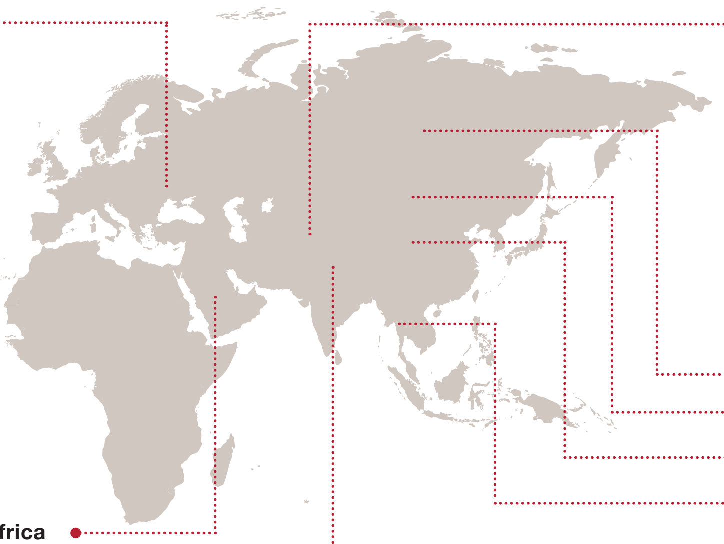
These agreements have led to an estimated US$900bn worth of projects being planned, with some already completed.[19] China has also reportedly established 75 overseas economic and trade cooperation zones in 35 countries as part of the B&R initiative.[20]

Figure 1b: Countries included in China's vision of B&R initiative

The Belt and Road initiative currently spans 65 countries, but more might be added as the initiative expands

Central and Eastern Europe

- Albania
- Belarus
- Bosnia and Herzegovina
- Bulgaria
- Croatia
- Czech Republic
- Estonia
- Hungary
- Latvia
- Lithuania
- Macedonia
- Moldova
- Montenegro
- Poland
- Romania
- Serbia
- Slovakia
- Slovenia
- Ukraine



Central Asia

- Afghanistan
- Armenia
- Azerbaijan
- Georgia
- Kazakhstan
- Kyrgyzstan
- Tajikistan
- Turkmenistan
- Uzbekistan

Russia

Mongolia

China

Southeast Asia

- Brunei
- Cambodia
- Indonesia
- Laos
- Malaysia
- Myanmar
- Philippines
- Singapore
- Thailand
- Timor-Leste
- Vietnam

West Asia, Middle East and North Africa

- Bahrain
- Egypt
- Iran
- Iraq
- Israel
- Jordan
- Kuwait
- Lebanon
- Oman
- Palestine
- Qatar
- Saudi Arabia
- Syria
- Turkey
- United Arab Emirates
- Yemen

South Asia

- Bangladesh
- Bhutan
- India
- Maldives
- Nepal
- Pakistan
- Sri Lanka

Source: Map from 'Vision and actions on jointly building the Silk Road Economic Belt and 21st Century Maritime Silk Road' document (March 28, 2015), Chinese Academy of Social Sciences

Following the launch of the B&R initiative in 2013, a number of keynote projects were announced, including a coal-fired power plant project in Pakistan by the China Gezhouba Group in 2014.[21] Furthermore, other projects which had been previously announced, but had yet to start, actually commenced. One such example is the first phase of the logistics terminal in the port of Lianyungang, in Jiangsu, China, which was jointly built by China and Kazakhstan. The terminal cost US$98mn and is considered a key platform for the transportation of goods from Central Asia to overseas markets.[22] Furthermore, in January 2017, the first China–UK transnational freight train completed its journey, departing Yiwu in eastern Zhejiang province and travelling through Central Asia, Russia and Eastern Europe to reach London 18 days later.

> ***"China's One Belt, One Road initiative is one of the government's top priorities and a plan identified closely with President Xi Jinping. It is an ambitious vision coupled with generous government funding and should create business opportunities for foreign companies who can support the plan's objectives. Our members are paying close attention."***
>
> **Kenneth Jarrett**
> President
> The American Chamber of Commerce in Shanghai

The first authoritative progress report, released by the Belt and Road Progress Research Team of Renmin University in September 2016, noted that several big Chinese SOEs had signed construction contracts for 38 large keynote transportation infrastructure projects over the last three years. These focused on port cooperation and infrastructure improvement, along key trade routes spanning 26 countries.[23] China has also invested in some of the world's least developed countries, as well as some landlocked countries, and has since surpassed Russia to become the largest trade partner and investor in the Central and Western Asia region, and the most sought-after investor in Africa, even surpassing South Africa.[24]

China's overseas investment activities have also helped to initiate reforms and the internationalisation of its SOEs. This has in part been driven by its trend of progressive acquisitions of globalised foreign firms from the US and Europe to acquire new technologies, capabilities and know-how, as well as its increased exposure to working with foreign multinationals (MNCs) with more prior global experience in managing such major projects.

There is a growing acceptance of involving foreign construction companies which can offer technology and advanced know-how as well as previous experience in reducing project and operational risks. In fact, China has openly sought foreign investors in a B&R push.[25] Among the most high profile is General Electric, which started off as an equipment supplier to Chinese engineering, procurement and construction (EPC) companies, but is both expanding and deepening its collaboration with Chinese SOEs outside and within China.[26] Alstom (now owned by General Electric) rebuilt a turbine factory to supply materials for the Three Gorges Dam, while General Electric has continued to supply power-plant related equipment for projects in the China-Pakistan Economic Corridor (CPEC).[27]

This PwC Growth Markets Centre report focuses on analysing the potential commercial opportunities for foreign MNCs within the B&R initiative.

At first glance, given the massive scope of the B&R initiative, there appears to be an abundance of opportunities across several sectors for foreign companies to bring their world-class expertise. These are attractive projects not only because they have significant Chinese financing but also because they are being driven by Chinese SOEs, which enjoy strong political support, helping address potential political and financial risks. Furthermore, the B&R's association with global funding entities such as the World Bank and the Asian Development Bank (ADB) further demonstrates its much-emphasised commercial focus.[28] Some foreign companies are already reaping benefits from involvement in the B&R initiative, such as General Electric, whose orders from Chinese EPC companies increased threefold last year.[29]

Despite these attractions, the complexity of these trans-continental B&R projects, which are planned to last many years and involve multiple stakeholders from several countries, brings a number of challenges which heighten the risks of delays or even the cancellation of projects. These projects are more complex than any other developing market's infrastructure project. For example, work on the Jakarta-Bandung railway has stalled temporarily halfway due to some paperwork that remains to be completed and some issues that needed to be resolved.[30]

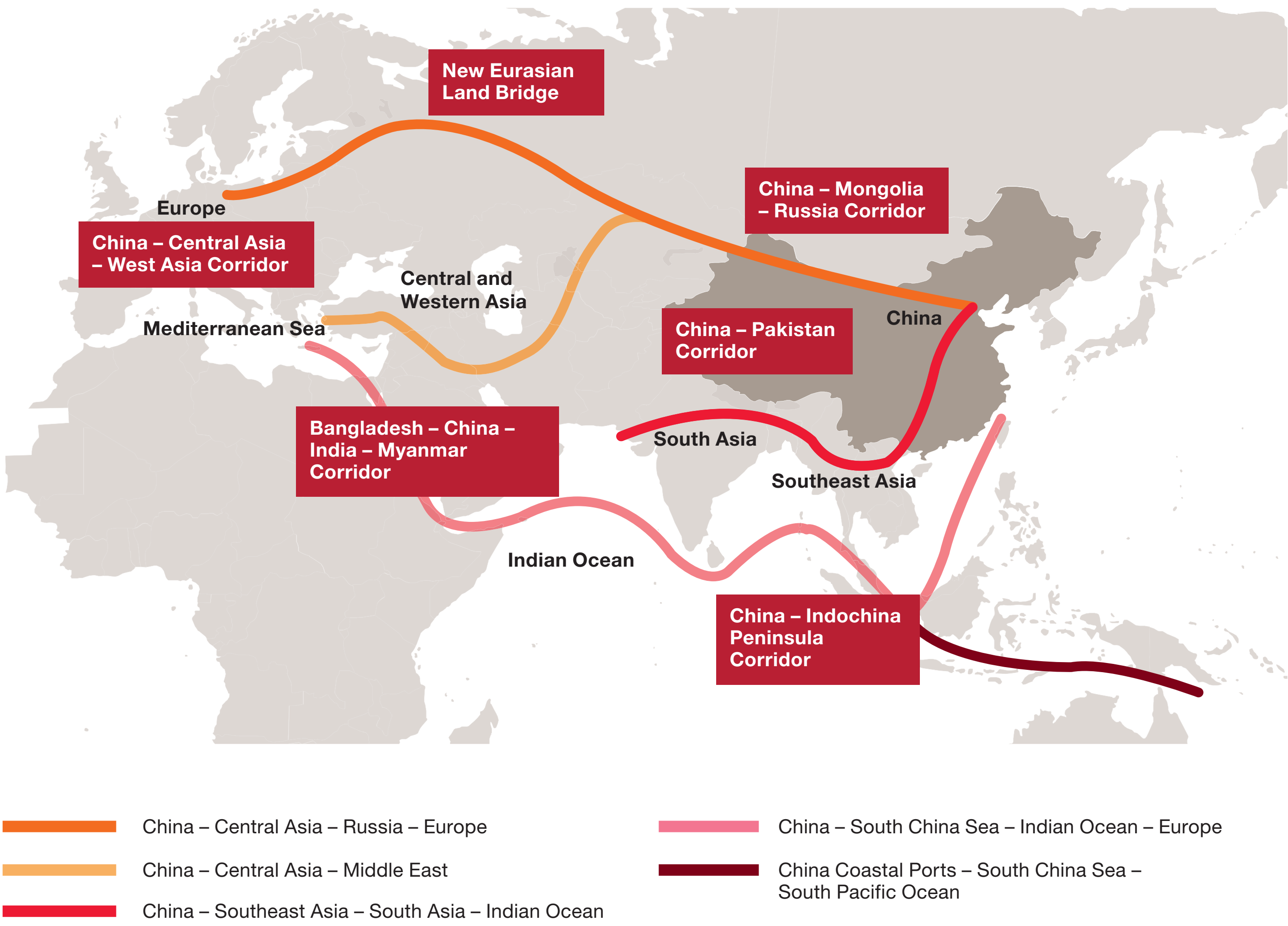
A transnational B&R project is exposed to uneven economic development across B&R countries, with varying degrees of 'trade openness', different political environments, regulations, operating standards and cultural differences. Security threats as a result of strife, conflicts and terrorism compound matters. Furthermore, given the length of each project, it is likely that different governments will be in power during its lifespan, which may have differing policies towards foreign investments, resulting in delays due to renegotiations mid-project.

Therefore the excitement surrounding B&R projects should be kept in perspective – this massive Chinese investment is creating many opportunities that are hard to ignore, but its associated complexities and risks need to be clearly identified in order to ensure commercial success. With this in mind this report aims to highlight the hotspots of B&R activity and identify the different potential risks and how to mitigate them. We will also provide suggestions as to how foreign MNCs can select opportunities for investment, identify considerations and methods to increase their chances of profitability and finally provide a view as to how foreign MNCs can position themselves for success.

In brief: *What is the Belt and Road Initiative?*

The Belt and Road Initiative is China's global engagement and integration strategy which will stretch across the next few decades. At its current stage, it includes mostly outbound investments in infrastructure, and features resource and industrial cooperation between China and countries along the key routes. In subsequent phases, it could potentially drive activities in media, culture, software and innovation, to name a few. Its investments focus on rebuilding the 'One Belt' which is the land network connecting China to Europe via Central Asia, and the maritime route 'One Road' from China to Southeast Asia, South Asia, the Middle East and Eastern Africa.

Figure 1c: The Belt and Road covers three key land routes via the historical 'Silk Road Economic Belt' and two main ocean routes via the '21st Century Maritime Silk Road'



Source: Map from 'Vision and actions on jointly building the Silk Road Economic Belt and 21st Century Maritime Silk Road' document (March 28, 2015). Actual routes may differ and may also extend to encompass other territories as the project develops.

Chapter 2: China's goals for the Belt and Road

What the Belt and Road initiative means to China

The B&R initiative is a significant platform of China's global connectivity plan. In its March 2015 press release entitled *'Visions and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road'*, the Chinese government indicated that the key objectives of the B&R initiative are to enhance China's cooperation with countries along the routes, in order to increase market access, promote trade, enhance transportation and logistical efficiencies, and ultimately to drive economic development along the routes, including increasing people-to-people exchange.

Primary objectives

Fulfilling these objectives will benefit China in a number of ways. On the surface it is clear that the B&R initiative will provide markets to digest China's industrial overcapacity and facilitate trade between the participating countries, whilst also potentially strengthening its diplomatic relations globally. But there are also many other associated benefits.

Figure 2a: China's rationale for the Belt and Road strategy

Primary goals

Increase exports and facilitate trade

- Trade between China and Belt & Road countries have exceeded US$916bn in 2016, which is 25.9% of China's total foreign trade volume
- Chinese companies have since established over 70 overseas economic and trade cooperation zones

Address surplus in industrial capacity

- China has surplus industrial output which can be beneficially utilised along the B&R
- The Asian Development Bank (ADB) forecasts 580mn tonnes of cement is needed yearly for infrastructure projects in Asia alone, which is a quarter of China's output
- Construction of railways, pipelines and other projects along the B&R trade route may create demand for 272mn tonnes of steel

Enhance geopolitical relations

- Over 100 countries and international bodies are already participating in B&R, 50 co-operation agreements have been signed between governments, as of March 2017, >20 nations are co-operating on industrial projects
- For bigger countries, B&R enhances relationships
- For smaller developing countries, B&R is a 'defining feature of bilateral ties with China' and a 'crucial trigger for trade and investment'

Additional strategic goals

Establish global infrastructure capability

- Jakarta–Bandung high speed railway, the Hungarian–Serbian Railway, the hydropower extension project and construction of a national motorway in Pakistan, and the Carmel Tunnel project in Israel
- Chinese SOEs are taking up main contractor roles in Belt and Road projects

Internationalise currency and diversify currency risks

- In line with China's 'Go Out' outbound investment policy, and massive funding of B&R projects by China
- China has conducted Renminbi (RMB) bilateral swap agreements with nations that stretch new Silk Routes
- Expands circulation of RMB and internationalises its currencies

A part of China's economic reform

Aligns with China's overall development policies to 'set up development – oriented financial institutions so as to form a new pattern of all round opening'

- Transition away from traditional manufacturing capacity
- Form a community of mutual interests

Source: Asian Development Bank, State Council of the People's Republic of China, The Guardian, yicaiglobal.com, HSBC report 'Belt & Road - China's great gambit', HSBC 'China's One Belt One Road - Opportunities for Chinese and Foreign Businesses' July 2015, Hoover Institution 'Views and commentary on the One Belt One Road initiative' July 2015, Shanghai Daily 'Belt and Road initiative to embrace greater achievements' 29 September 2016.

Additional strategic goals

Beyond its primary goals, the B&R initiative also complements China's national economic reform strategy, reinforcing its 'Go Out' policy launched in the 1990s, which encouraged its enterprises to invest overseas. The B&R initiative provides China with the opportunity to amass vital global credentials and establish its industrial prowess, by designing and building projects such as high-speed railways and nuclear power plants. In construction and infrastructure, for example, Chinese SOEs have begun to achieve this by reforming their internal procedures to enable them to assume the main contractor roles in B&R projects, targeting complex projects, in difficult environments, and against strong competitors.[31] These reforms have also been complemented by the procurement of know-how and capabilities through progressive acquisitions and partnerships with foreign MNCs. Together it is hoped that these new and enhanced capabilities and skills will lead to global recognition across the various infrastructure sectors. Live examples to date include the Hungarian–Serbian Railway, a hydropower extension project, construction of a national motorway in Pakistan, and the Carmel Tunnel project in Israel.

The B&R also complements with China's 13th Five-Year Plan released last year, which further deepens the implementation of the Made In China 2025 strategy, announced in 2015 to focus on upgrading China's industries. The overarching aim is to evolve China's traditional manufacturing sectors to higher-value and higher quality manufacturing with innovation and the latest technologies, while transitioning to a consumption-driven economy.

Finally, the B&R initiative is also expected to drive greater capital flows overseas from China, resulting in a further internationalisation of the RMB, expanding its circulation globally and diversifying currency risks. This could open up its financial institutions to a greater extent and accelerate financial reforms.

> ***"The Chinese government is not just trying to export higher end industrial goods through B&R but also to encourage the acceptance of Chinese technological and engineering standards. Beijing's campaign to market its high speed railway technology is perhaps the best example of how it intends to use B&R to further develop China's industry. For example, the Jakarta–Bandung project is the first major project to fully adopt Chinese railway technological standards and it is widely regarded as a flagship B&R project."***
>
> **Peter Cai**
> Non-resident Fellow
> Lowy Institute for International Policy

Scope of Belt and Road kept broad and inclusive

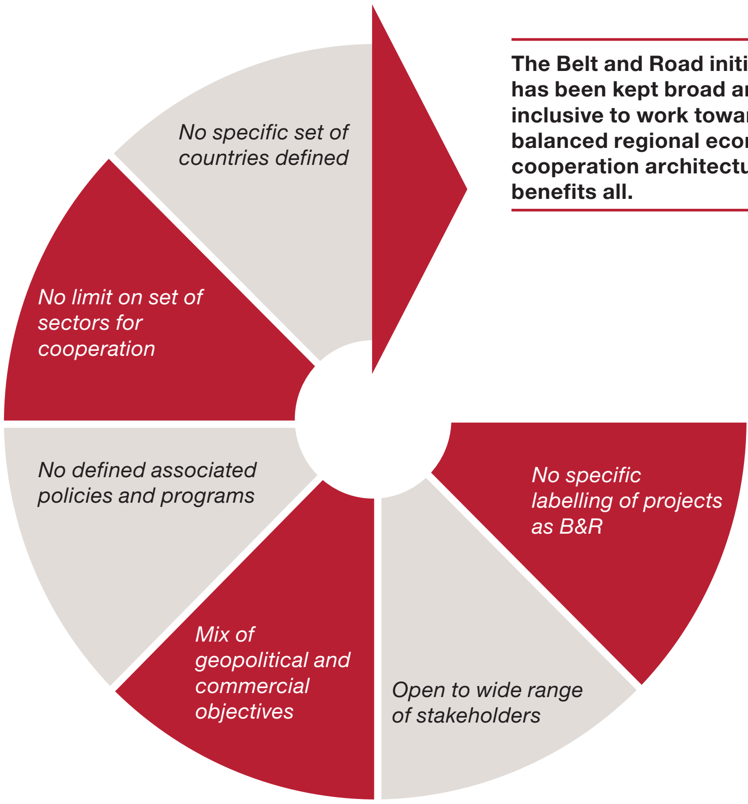
To date the Chinese government has kept the definition of the B&R initiative quite broad, without detailing the scope of its geographical boundaries or industries, or outlining specifics in types of activities. In fact no specific project has actually ever been labelled a B&R initiative.

Instead, the B&R initiative has been inclusive and broad. Senior Chinese officials have emphasised that the B&R initiative is not limited to the area of the ancient Silk Road and is 'open to all nations, and not limited by geography'.[32] In this case the lack of a definition allows an unlimited variety of projects to fall under the B&R umbrella, which could be indicative of China's ambitions.

So far, the most widely referred to list of countries along the B&R routes is of the 65 countries identified in Fig 1b on page 4 and is the only one compiled by a government research institution, the Chinese Academy of Social Sciences. In spite of this, China has worked on establishing relationships with countries beyond the list, such as those in Latin America and Africa.

Therefore the B&R initiative can be perceived more as a foundational pillar of China's global foreign policy rather than being confined to just the countries along the B&R routes.

Figure 2b: Inclusive and broad scope of the Belt and Road initiative



The Belt and Road initiative has been kept broad and inclusive to work towards a balanced regional economic cooperation architecture that benefits all.

Source: PwC analysis

Belt and Road's impact beyond China

Aside from strengthening China's economy, industrial capabilities and geopolitical standing, the B&R initiative is also a catalyst for infrastructure development in some of the least developed countries in the world, whilst simultaneously driving economic growth by stimulating trade and creating domestic jobs.

A modern and well-functioning infrastructure is fundamental to the development of a country into a developed market economy, as it not only provides the foundation for other industries to develop, but it also creates jobs, which in turn fuels economic growth. According to Standard and Poor's estimates, an increase in government spending of 1% of real gross domestic product (GDP) on infrastructure could result in as high as a 2.5 times multiplier effect, creating jobs and growing GDP.[33]

In this regard, the B&R's infrastructure investments impact at least two-thirds of the world's population, as the 65 countries along its key routes have an estimated total population of 4.4bn. As these developing countries are characterised by their very young working populations, the B&R initiative has the 'potential to address the massive and urgent need to create hundreds of millions of jobs'.[34]

Furthermore, the B&R initiative also provides a method to address the significant financing needs in the least developed countries in the world along its routes. It has been estimated that US$49tn will be needed to finance global infrastructure from 2015 to 2030. Emerging Asia alone, excluding China, needs US$6tn of that.[35] This is not too far from the US$8tn that will be needed between 2010 and 2020, as forecast by the ADB. This is accounted for by exponentially growing needs due to rising urbanisation in developing Asia, such as in Indonesia and the Philippines, which will trigger greater need for physical infrastructure and power generation capacity. The focus of the two countries also differ, with Indonesia investing in mass transit, toll roads and airport development, while the Philippines prioritises energy projects, expressways and ports.[36]

According to World Bank estimates, Africa requires US$38bn for infrastructure financing annually, and a further US$37bn annually in operations and maintenance, which is about 12% of its GDP. Currently, the funding gap remains substantial at US$35bn, and therefore Africa has welcomed China's investments to partially fill this gap.[37] China's significant funding and its willingness to venture into the risky and volatile market environments of developing countries have been welcomed by most countries in need. In Southeast Asia, China has begun work on a planned US$23bn investment in railways in order to connect Kunming with Singapore.[38]

> *"China's Belt and Road initiative has the potential to accelerate economic growth and development in neighbouring countries. The ten nations of the Association of Southeast Asian Nations (ASEAN), for example, will see their collective urban population expand by 20,000 people every day for the next ten years, creating significant demands for new infrastructure. The Belt & Road initiative is well placed to support that process."*
>
> **Justin Wood**
> Head of Asia Pacific
> Member of the Executive Committee
> World Economic Forum

> *"The B&R initiative is a potential global 'game-changer' with its core impact in key sectors including infrastructure, energy, engineering, logistics and financial and professional services. Its secondary impact is in the consequent economic growth and trade expansion in Belt and Road countries. The UK is well positioned to complement Chinese business advantages when setting foot into unfamiliar markets across the world."*
>
> **Jeff Astle**
> Executive Director
> China-Britain Business Council

Need for foreign partnerships

Despite China's significant investments, the scale of the B&R initiative and the associated financing requirement far exceeds the current available funding.[39] For example, the SRF's US$40bn, although dedicated to B&R projects, is not sufficient to sustain the realisation of all projects announced to date.[40] Therefore, the Chinese government has been strongly promoting the B&R initiative and seeking foreign investments.[41]

> ***"Given the scale of Belt and Road and projected massive spending that will potentially dominate global infrastructure spending, it is increasingly unlikely for foreign companies to remain uninvolved."***
>
> **Rashid Gaissin**
> Head of Eurasian Legal Practice
> Partner, PwC Kazakhstan

In addition to funding, the Chinese government has sought foreign partnerships to access expertise, new technologies and equipment, as well as management and operational experience in managing similarly large scale, complex infrastructure projects.[42] Chinese construction enterprises can benefit from partnerships with foreign companies on gaining experience in large scale infrastructure projects involving multiple countries and stakeholders, which might be new to them. Foreign companies may have previous experiences operating in developing countries, making them familiar with the infrastructure, the host country's geophysical landscapes, regulations, social and cultural norms that may otherwise be challenging for Chinese SOEs who have not operated in these markets to this scale before.

In this case, foreign MNCs with advanced capabilities and prior experience in these markets, and which have established relationships with local authorities and stakeholders, could be valuable partners to Chinese SOEs and target market entities. Given the scale of investments from China, there is reason to believe that projects associated with the B&R initiative will drive a large part of future global infrastructure spending.[43] As such there will be many opportunities for global MNCs with world-class construction expertise to get involved – not only making these a commercial and operational success, but also playing a vital role in the nation building of these developing markets.

Chapter 3: Key sectors and economic corridors

Identifying Belt and Road projects

The first challenge for any foreign MNC looking to participate in a B&R project is to identify an appropriate one. Acknowledging this, we established in Chapter One that the B&R initiative focuses on the development of not only infrastructure in transportation (ground, land, sea), energy and utilities (oil and gas, power, water), communications and technology, but also the construction of industrial parks and investment in supporting social infrastructure such as healthcare and education. We also noted that the B&R spans across 65 countries, but is also open to participation from other countries. Some B&R projects can be easily identified as a part of a specific economic corridor, such as projects listed under the China-Pakistan Economic Corridor (CPEC), probably the most developed corridor in terms of the extent of cooperation and projects. Projects listed under CPEC benefit from tax and duties exemptions.[44]

B&R projects can be further identified through government-to-government collaboration, typically at a high level, reinforced by policy coordination. This follows previously established platforms such as the Shanghai Cooperation Organisation (SCO), a pact formed in 2001 between China, Russia and four Central Asian countries – Kazakhstan, Krygyzstan, Tajikistan and Uzbekistan – featuring political, economic, defence, science and technology, education and cultural cooperation. It also includes establishing bilateral, multilateral and regional agreements and signing respective MOUs.[45]

Despite these defined parameters as to the type and location of a B&R project, we have seen that even projects which were commissioned before the announcement of the B&R initiative in 2013 are labelled as falling under the initiative, especially if they display the qualifying characteristics of location and sector, are led by Chinese SOEs and enjoy Chinese financing through the Export-Import Bank of China (China EXIM Bank) or the SRF.[46]

Belt and Road funding and investments

As of 2016, major multilateral banks, policy banks and commercial banks have announced a total of at least US$186bn issued in loans or invested in countries along B&R.[47] In line with these announcements, China has said that it would invest a cumulative US$4tn in B&R countries.[48]

> ***"There is enough data on B&R spending that estimates it to reach several hundred billion dollars over the next few decades."***
>
> **Meredith Sumpter**
> Director of Asia Practice
> Eurasia Group

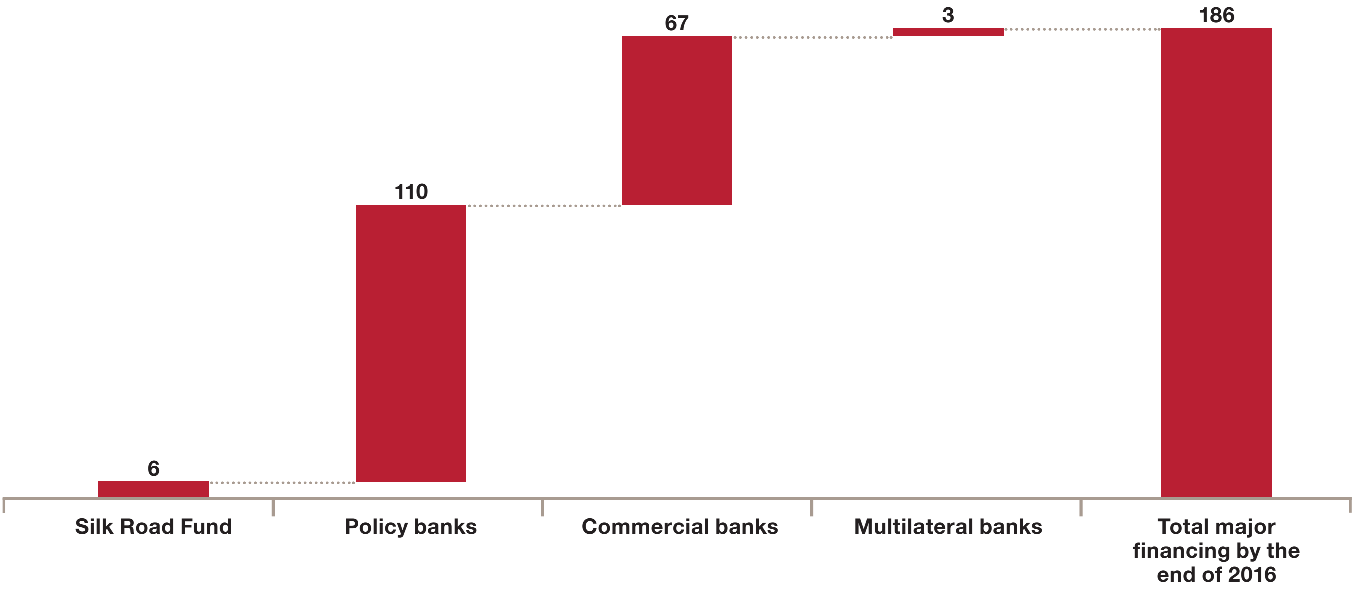
According to official figures released by the Ministry of Commerce, People's Republic of China (MOFCOM), China's direct investment into B&R countries totalled US$14.5bn in 2016; total overseas newly signed contracted projects in B&R countries reached US$126bn, making up about half (51.6%) of China's total overseas contracted project value in 2016. In addition, the average B&R project value across sectors has grown quickly at a compound annual growth rate (CAGR) of 33%, from 2012 to 2016 according to a PwC report, *China and Belt and Road Infrastructure 2016*, which tracks deals and project activities in infrastructure both globally and in Belt and Road countries. In China alone, the average B&R project value has grown at a CAGR of 27% between 2012 and 2016.

According to the report's review of capital projects and deal activity across the B&R region, projects and deals announced in 2016 were across seven core infrastructure sectors: utilities, transport, telecommunications, social, construction, energy and environment. A third of all these were in China, with the remainder spread across the rest of the region.[49]

In order to understand where China's infrastructure investments have been focused from a geographic perspective, we need to look into activities across the six key economic corridors marked out as key focal points of B&R activities along the B&R routes.

Figure 3a: Major sources of financing provided in B&R countries

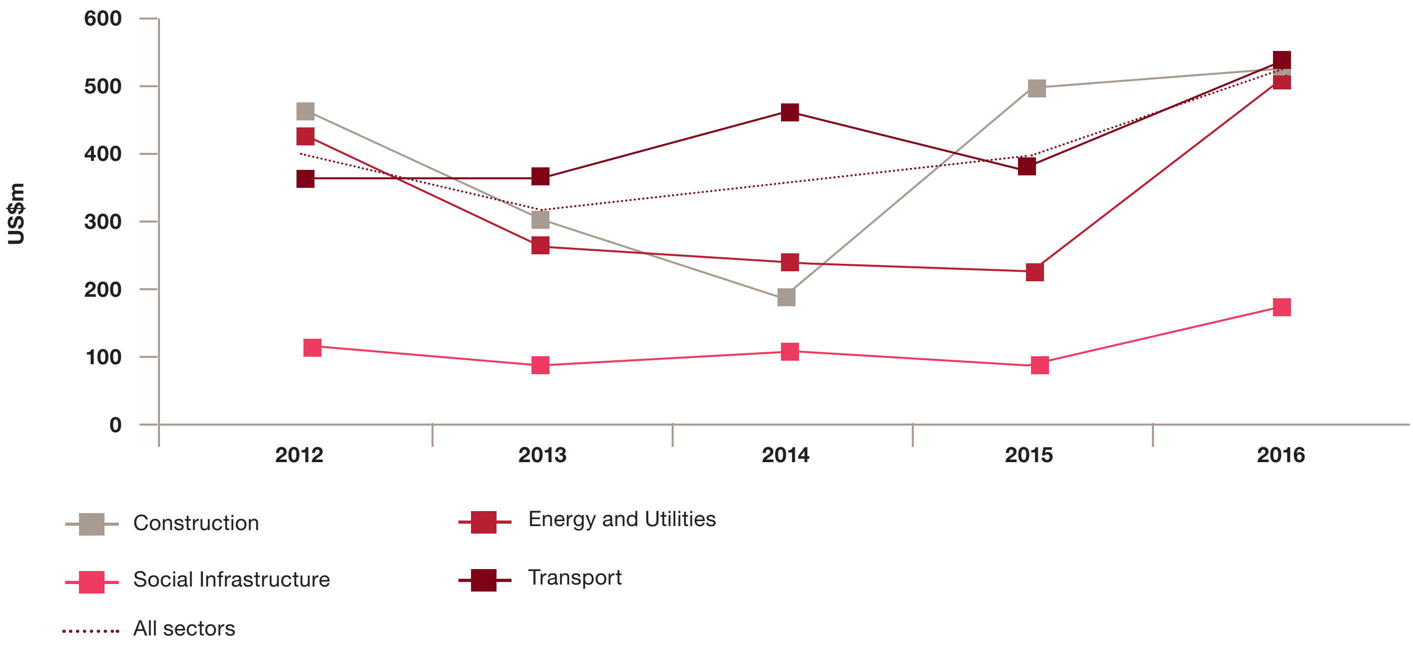
Issued in loans or invested by the end of 2016, US$bn



Note: In the Belt and Road Summit on 15 May 2017, President Xi Jinping further announced the expansion of Silk Road Fund by RMB 100 bn in addition to its starting capital of USD 40bn. The policy banks are also setting up the Belt and Road Multi-Currency Special Lending Schemes at a total of USD RMB 380 bn equivalent.

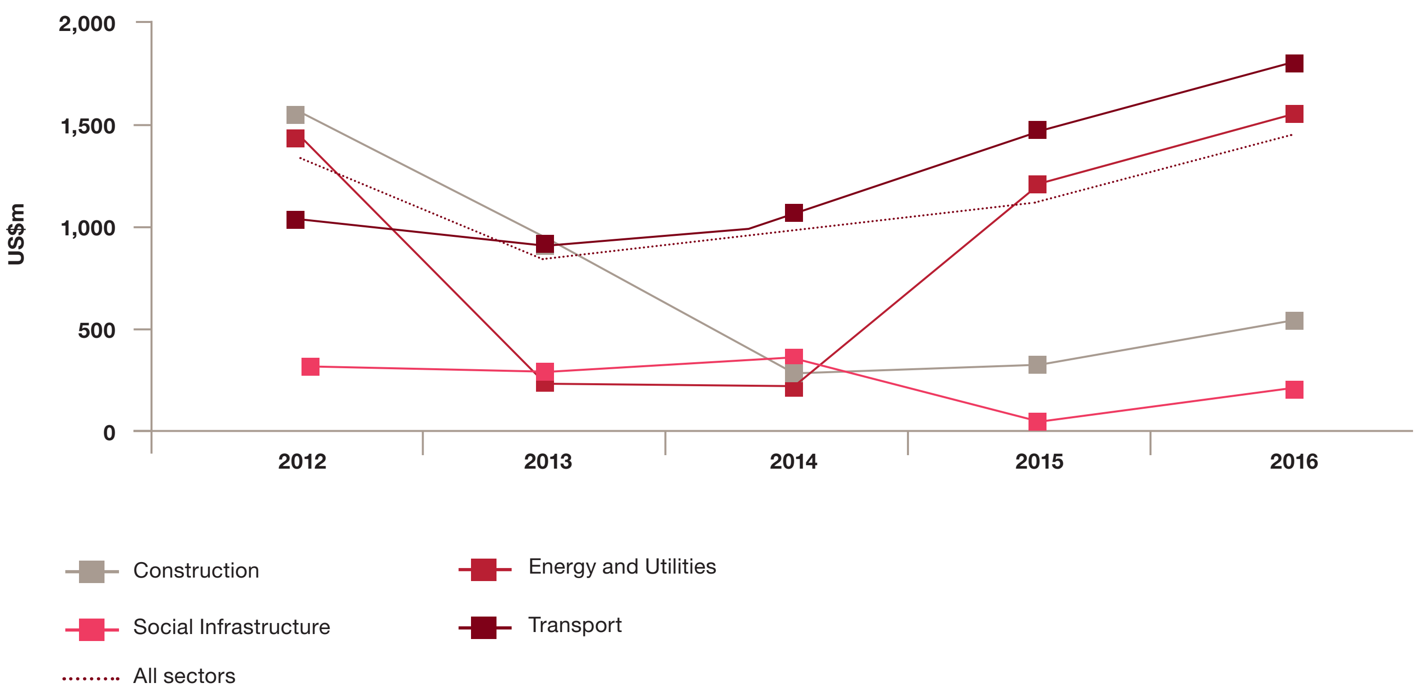
Source: Ministry of Commerce, People's Republic of China, Official Belt and Road Portal under the Leading Group on the Construction of the Belt and Road Hosted by the State Information Center, Official websites of the multilateral banks

Figure 3b: Average Belt and Road project value by sector



Source: PwC China and Belt and Road Infrastructure 2016 review and outlook

Figure 3c: Average China project value by sector



Source: PwC China and Belt and Road Infrastructure 2016 review and outlook

"The average project value in B&R countries rose by 47% and by 14% in China, despite growing uncertainties and weaker growth in regional markets, where investors and public authorities tend to invest in less risky, more essential ventures. We expect this trend to continue moving forward."

Gabriel Wong
Capital Projects and Infrastructure Leader
Partner, PwC China and Hong Kong

"[Our] review of capital projects and deal activity across the B&R region, projects and deals announced in 2016 were across seven core infrastructure sectors, including utilities, transport, telecommunications, social, construction, energy and environment. A third of these were in China, with the remainder spread across the rest of the region."

Simon Booker
Partner
PwC Hong Kong

Belt and Road project highlights

With reference to the *Belt and Road Progress Report* by Renmin University of China, September 26, 2016

a. Transportation and logistics

Figure 3d: Key milestones in transportation and logistics

Milestones as of April 2017

Starting or under construction

- Lahore Orange Line construction underway
- Port construction projects ongoing in Pakistan, Sri Lanka, East Africa and Greece
- Progress made on China–Mongolia and Singapore–Malaysia Railway
- Moscow–Kazan high speed rail may receive a financing boost from BRICS New Development bank (BRICS)

b. Energy, power and utilities

China has stepped up the pace of its exports of energy infrastructure and has constructed power plants, electricity transmission facilities and oil and gas pipelines across 19 B&R countries. Chinese nuclear power companies have also launched cooperation projects in Romania, the UK, Pakistan and Argentina. Chinese hydropower companies worked on cooperation projects in Angola, Brazil, Nepal, Pakistan and Argentina. In particular, the Karot Hydropower Project in Pakistan was the Silk Road Fund's first overseas investment project in Pakistan.

c. Communications

Chinese telecommunication service providers such as China Unicom and China Mobile are speeding up cross-border transmission projects in B&R countries to expand international telecommunication infrastructure. China has established communication connectivity with countries through submarine communication cables or overland cables, and is leading the global mobile data transmission technology (TD-LTE) initiative to offer 5G networks.

d. Industrial cooperative zones

China has been engaged in the joint construction of 70 cooperative zones through projects such as the construction of industrial parks, with more than US$8bn invested. These zones are expected to realise an annual output of at least $20bn, and provide up to 200,000 jobs.

e. Social and urban development

China has been also cooperating with B&R countries in developing social infrastructure and enhancing urban development. This includes cooperating on education, tourism, healthcare, science and technology.

Economic corridors – Hubs of infrastructure development

China's outbound infrastructure investments have been concentrated primarily in key regions including Southeast Asia, South Asia and Central Asia, among others. All of these hotspots fall within the six economic corridors (EC) of the B&R.

Four of these economic corridors are primarily land routes, including the New Eurasian Land Bridge, which follows the historical Silk Road, and the new China–Mongolia–Russia, China–Central Asia–West Asia, and China–Pakistan corridors. The two other corridors, the Bangladesh–China–India–Myanmar corridor and the China–Indo China Peninsula corridor make up the '21st Century Maritime Silk Road' ocean route (See Figure 3e).

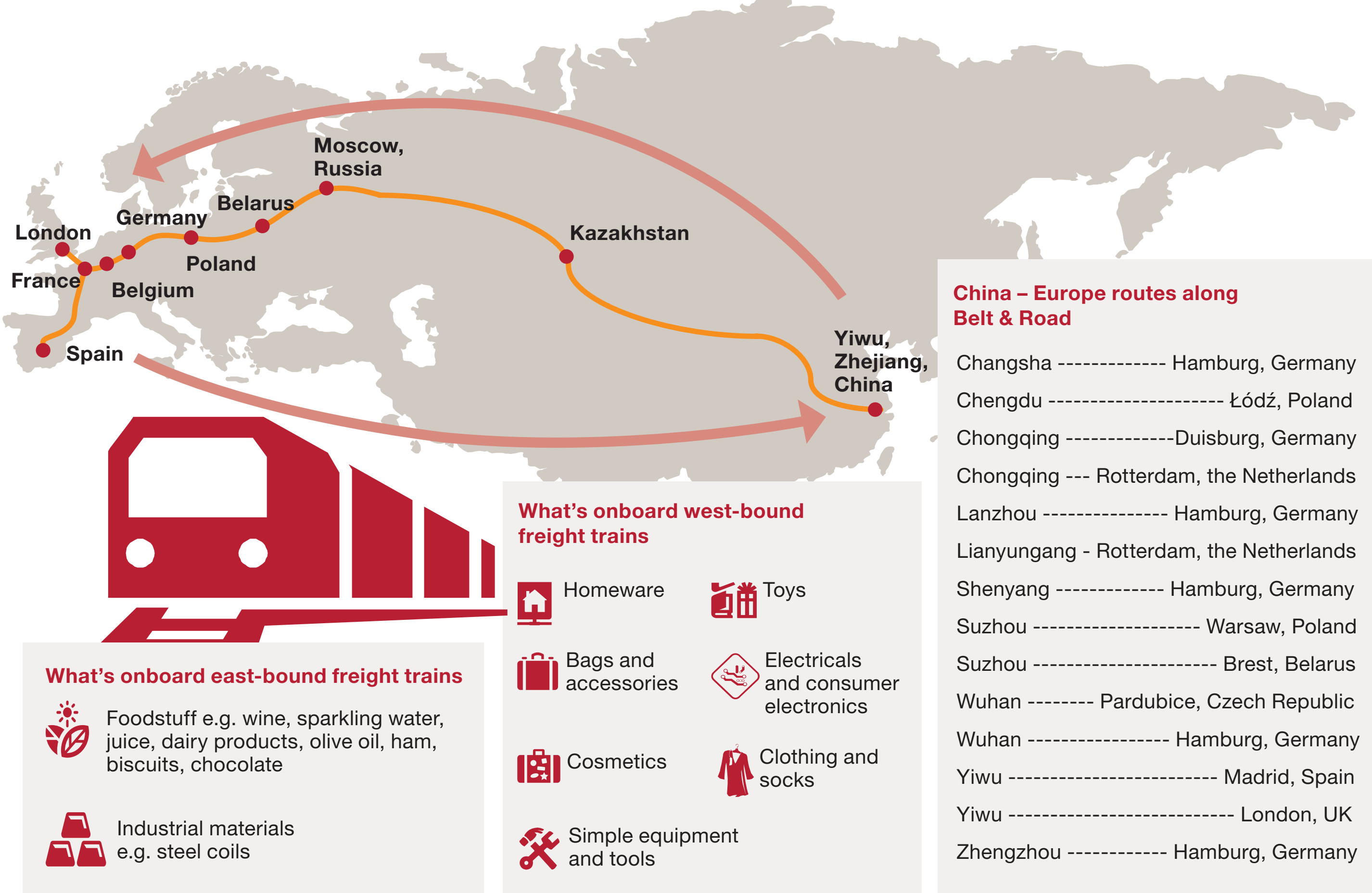
Each of these economic corridors acts as an ecosystem, facilitating nation building and fuelling prosperity. Key industrial hubs give rise to new energy and transport infrastructure needs, including power stations and electricity grids, high-speed railways, highways, waterways, shipping ports and new airports.

EC 1: New Eurasian Land Bridge (land route)

The New Eurasian Land Bridge, which connects China to the Netherlands via Central Asia and Eastern Europe, is already a major logistics passageway. In fact as recently as October 2016, the China–Europe Freight Rail Development Plan, which lays out plans for a transcontinental rail service linking China, Russia, Central Asia and Europe has been released.[50]

Following the release of the rail development plan in October 2016, the journey of the first freight train from Zhejiang in eastern China to Barking, East London, in the United Kingdom, taking 18 days to traverse 12,000 km took place in April 2017. This new rail route reduced the transportation time between the two countries by half, whilst simultaneously providing access to seven countries including Kazakhstan, Russia, Belarus, Poland, Germany, Belgium and France, and numerous cities along the way.[51]

Figure 3e: New Eurasian Land Bridge – Rail connections between European cities and Yiwu, one of China's most prosperous manufacturing hubs



Source: National Railway Administration, China Railway Express Five Year Plan 2016-2020, 19 October 2016

China is one of the UK's largest trading partners, and its freight trains depart from the manufacturing hub of Yiwu in Eastern China, carrying clothing, bags and household goods worth about US$5.2mn.[52]

The route passes through Kazakhstan and Russia, before entering Europe in Belarus and crossing Poland, Germany, Belgium and France, before arriving in London, UK. This new transcontinental railway joins the existing 39 routes connecting 16 Chinese cities to 12 European cities. The UK is the eighth country to be added to the China–Europe railway service, with London becoming the 15th city.[53]

Further emphasising the importance of this corridor to China, it was reported to be planning a US$150bn investment in various high-speed railway projects linking China to Turkey via Kazakhstan, Turkmenistan and Iran.[54] One such project is the Moscow–Kazan high speed railway (HSR). It will be Russia's first HSR to connect key economic zones and is predicted to reduce journey times between the two cities from the current 14 hours to only 3½ hours, whilst serving over 25mn passengers.[55]

EC 2: China–Central Asia–West Asia corridor (land route)

The China–Central Asia–West Asia corridor has routes closely linked to and overlapping with the Eurasian Land Bridge corridor. This route starts from Xinjiang in Western China, known to be an important stop on the old Silk Road, and joins railway networks across five Central Asian countries (Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan) through to Western Asia across Iran, Iraq and Turkey before reaching the Mediterranean coast.

The close cooperation of these countries actually began prior to the B&R, with the Shanghai Cooperation Organisation (SCO) founded in 2001, and since then Chinese companies have made several infrastructure-related investments along this route. In energy, China has invested in oil production in Kazakhstan, gas exports from Turkmenistan, and US$15bn of gas and uranium deals with Uzbekistan, whilst in transportation, it has part-funded a new freight railway starting from a major logistics centre in Xinjiang through to Kazakhstan's Almaty on a new route mainly to transport auto parts, clothing and household goods. Furthermore, new roads and railroad bridges complement the new railroads stretching over 1,500km between Urumqi in Xinjiang, Western China, to Almaty in Kazakhstan.[56]

Figure 3f: The China–Central Asia–West Asia economic corridor

Source: Hofstra University, The New Eurasian Land Bridge report, John Hopkins University, School of Advanced International Studies, globalsecurity, nationalinterest.org

EC 3: China–Mongolia–Russia corridor (land route)

To the North is the China–Mongolia–Russia corridor, which supports China's goals to strengthen its links and trade with both Russia and Mongolia. One of the most significant projects here is the Amur Bridge, which is a 2,197m long railroad bridge over the Amur River that borders Russia and China. The new bridge is due to be completed in 2019 linking Tong Jiang, a city in Hei Long Jiang in northern most China, to Nizhneleninskoye in south-eastern Russia with a high speed railway which can handle up to 21mn tonnes of cargo traffic annually. This will mainly be iron ore imported by China to Russia. It aims to reduce the distance by 700km compared to other rail routes, cutting transportation time and boosting trade.[57]

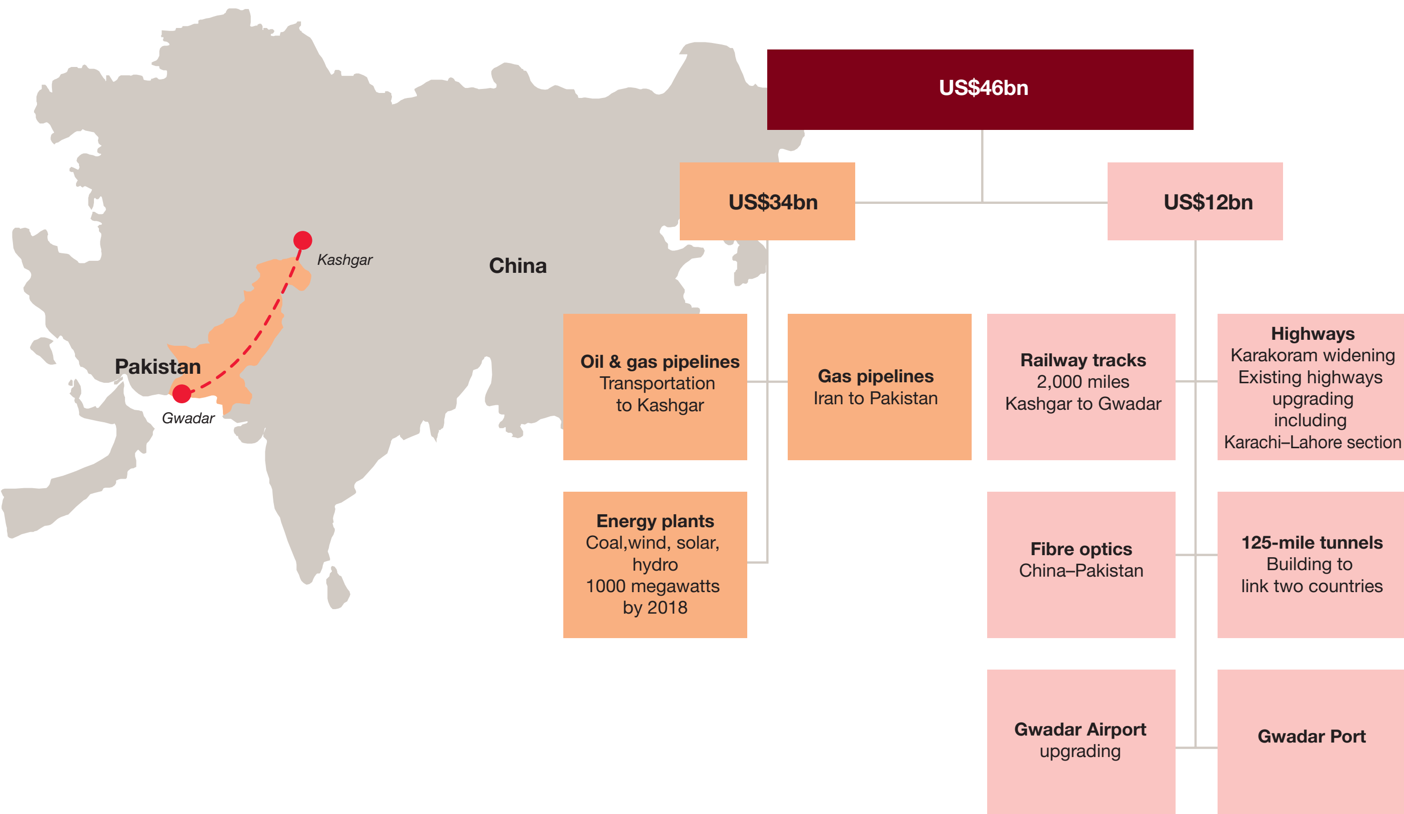
EC 4: China–Pakistan corridor (primarily land, ending in Gwadar Port along ocean route)

The most extensive cooperation on the B&R initiative is probably seen in the China–Pakistan corridor, which extends from Kashgar in Xinjiang, North China, to Southern Pakistan's Gwadar Port. Gwadar Port also lies along the fifth corridor – the ocean route, connecting China with Myanmar, India and Pakistan.

According to the government of Pakistan and the United States Agency for International Development (USAID), the Chinese government has committed to investments totalling US$46bn, with the majority (74%) of this allocated to energy infrastructure such as building coal mining and power plants, oil and gas pipelines and hydropower stations, and exploring renewable energy sources. The remaining investment is expected to be for transportation infrastructure projects, including railways, highways, bridges, Gwadar Port and communications, including laying fibre-optic networks.

Both the Chinese and the Pakistani government have mapped long-term plans stretching up to 2030, with early harvest projects planned for completion by 2018 to 2020.[58]

Figure 3g: The China–Pakistan economic corridor's US$46bn investment commitment



Source: Wall Street Journal; Journal of Economics and Sustainable Development, 'One Belt One Road: Does China–Pakistan Economic Corridor benefit for Pakistan's Economy?', vol 6 No 24, 2015

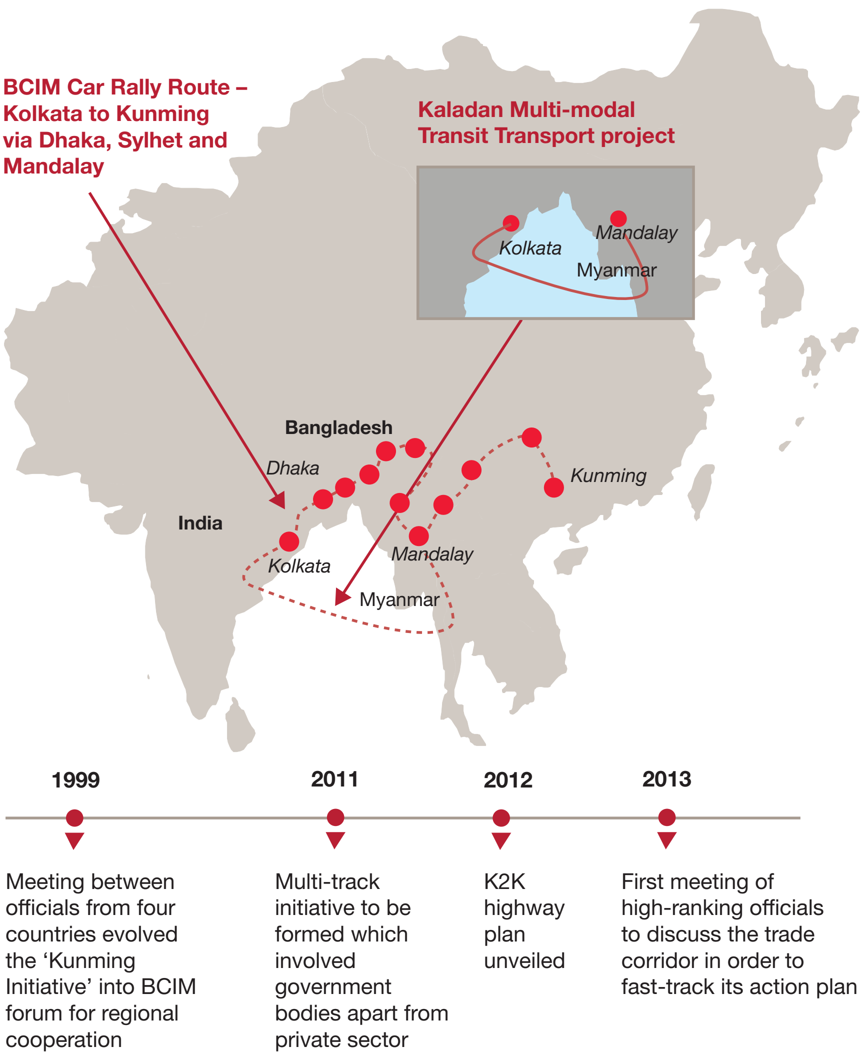
EC 5: Bangladesh–China–India–Myanmar corridor (hybrid land-ocean route)

Complementing these four land corridors are two sea routes. The first is a hybrid land–sea route, situated to China's south, called the Bangladesh–China–India–Myanmar (BCIM) corridor. This is a multi-modal corridor made up of both land routes mainly via the Kolkata and Kunming (K2K) highway, and sea routes mainly via the Kaladan multi-modal transit transport project. The routes generally start from Kunming in Southern China, passing through Myanmar and Bangladesh through to Kolkata in India, featuring a combination of road, rail, water and air linkages with a total estimated cost of US$22bn. Trade is expected to flourish, especially in the most-traded goods, including cotton, copper, electrical machinery and electronic media equipment, chemicals and minerals, mostly exported from India.

The main artery of the BCIM corridor is a land route – the K2K highway stretches between Kolkata in India through to Kunming in China, passing through Bangladesh and Myanmar, spans 2,800km, and is nearly ready, as some segments are undergoing repair.[59]

Another route being developed via the Kaladan multi-modal transit transport project is a hybrid land-sea route connecting Myanmar to India. This is a transport loop that aims to provide maritime access of goods from Kolkata in India, via Myanmar's port of Sittwe, to Paletwa by inland water transport along the Myanmar river, Kaladan, and back via highway to Mizoram in northeast India. Compared with the land route, access via sea from Sittwe to Kolkata reduces the distance covered by land by 1,328km to a mere 539km. An initial agreement between India and Myanmar was signed in 2008, but progress has been slow, and the project is yet to be operational.[60]

Figure 3h: The Bangladesh–China–India–Myanmar economic corridor – multi-modal connection via combination of sea and land transport



- Multi-modal corridor to feature first expressway between India and China, passing through Bangladesh and Myanmar
- Via a combination of road, rail, water and air linkages (mix of sea and land transport) cost US$22bn
- To enhance flow of goods and people, trade, market access and logistics
- Envisioned mega cities, infrastructure, economic growth and better living for 440mn people across four countries
- Increased access to Southeast Asian markets along with regional trade agreements would constitute one of the largest free trade areas

Source: BCIM Economic Corridor, public news sources, Dezan Shira & Associates

EC 6: China–IndoChina Peninsula corridor (ocean route)

The final route of the six is the China–IndoChina Peninsula corridor, which captures many of China's connectivity projects within Southeast Asia. Ten cross-national highways, including one high-speed railway (HSR) from Bangkok to Singapore, form the backbone of the Greater Mekong Sub-region (GMS) transnational infrastructure network cutting across five key Southeast Asian nations.

A major project along this corridor includes the Kunming–Singapore railway by the China Railway Construction Corporation (CRCC), a US$23bn network of railways that is planned to connect China to countries across Southeast Asia down through to Singapore.

Apart from enhancing trade from China to developing countries in Southeast Asia, including accelerating cross-border e-commerce, the B&R initiative is pivotal to fulfilling huge infrastructure gaps and creating jobs in the emerging economies in the region.

At the time of writing, some progress had been made for parts of the railway network, including an agreement between China and Laos to fund the 417km railway from the Chinese–Laos border, through Vientiane, to Nong Khai in Thailand, at a cost of US$6.8bn. China has signed an MOU with the Thai government to work with it on linking that railway to Bangkok, and an agreement with Malaysia to develop the station for the HSR terminus in Kuala Lumpur. The most recently signed MOU is for the KL-Singapore High Speed Rail. Work is expected to begin on construction in 2018, with operations expected by 2026.[61]

Figure 3i: Nine cross-national highways form backbone of Greater Mekong Sub-region (GMS) transport infrastructure

Source: Hong Kong Trade Development Council (HKTDC)

Beyond the economic corridors

Whilst China has been focused on these six economic corridors, this has not limited it from collaborating with other nations across the world on similar infrastructure projects, which emphasises the earlier point that the B&R initiative is not confined to Asia, Europe, Africa and the Middle East, but has global aspirations.

Latin America

China's progressive imports of natural resources contributed to a natural resource boom, which has been instrumental in driving economic growth in Latin America. China's trade today with the region is 22 times higher than in 2000 and it is currently Peru's largest trading partner and largest export market.

Even when China's growth began to slow down, Chinese exports to the region did not fall by as much. China's key imports from Latin America are raw materials including copper, iron, oil and soy beans.

In November 2016, Chinese President Xi Jinping embarked on a tour across several South American countries including Ecuador, Peru and Chile, during which he encouraged Latin American countries to join the B&R initiative.

As part of his trip, free trade agreements were signed and enhanced with Ecuador, Peru and Chile, setting the basis for further cooperation in the B&R initiative, as these countries welcomed increased exchanges and continued Chinese investments in infrastructure, energy, mining, agriculture and communications.

Africa

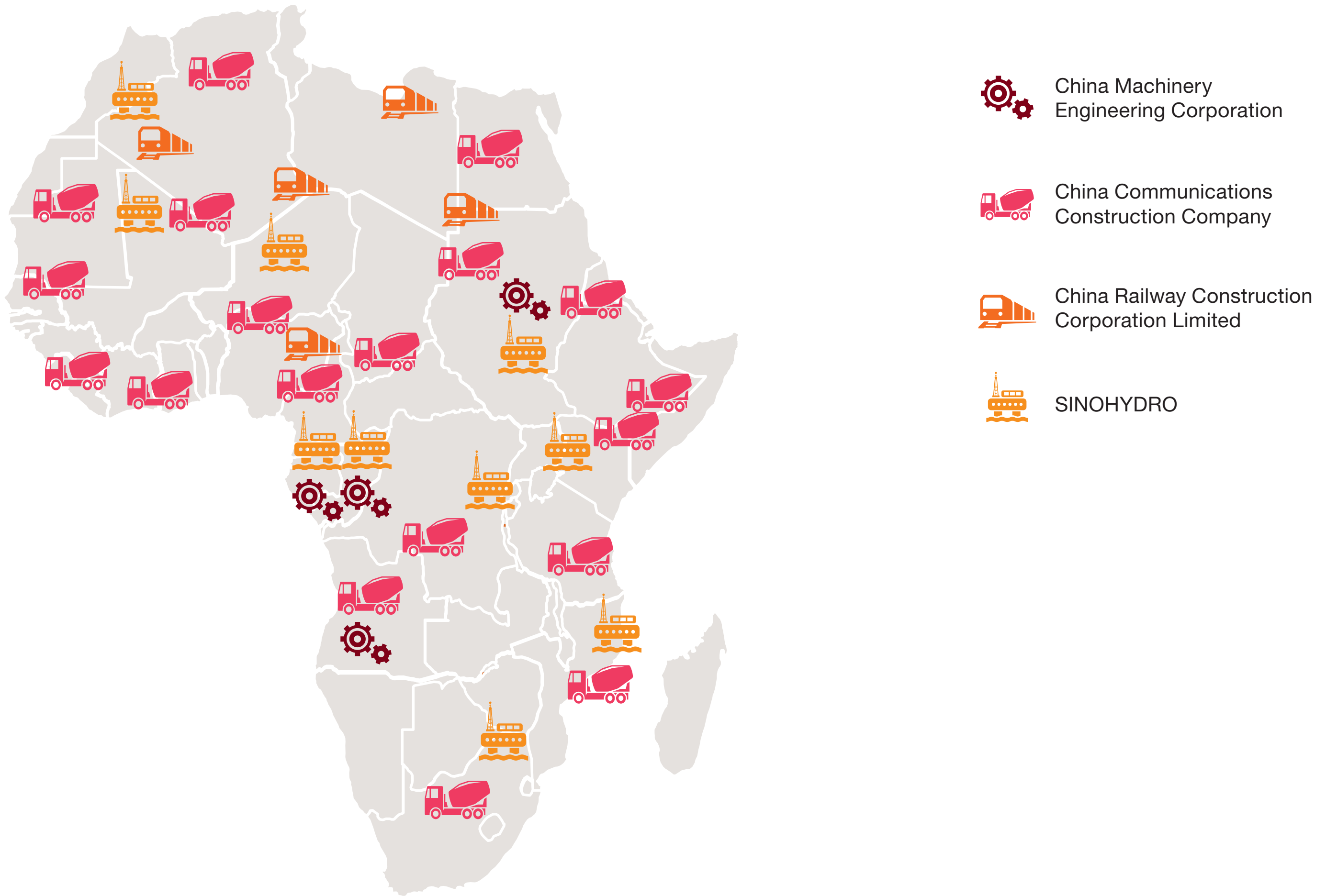
China's investment into the African continent is well known, and according to the *United Nations Conference on Trade and Development (UNCTAD) World Investment Report 2016*, three-quarters of African agencies have identified China as their most promising investor. Chinese investments jumped from $3.6bn in 2013 to $13.3bn in 2014, and this mostly went into Zambia, the Democratic Republic of the Congo and the Sudan, whose economies are driven by fuel and mineral exports. However, imports to China have since slowed as its economic growth model changes to focus on more value added industries and sectors.

In the United Republic of Tanzania, China has become the second largest foreign investor, having invested $2.5bn in about 500 projects, 70% of which are in manufacturing across product types including metal smelting, textile and garments, bags and luggage, automobile accessories and plastic pipes.

Beyond mining for local resources, China has taken on the development of many infrastructure projects across the African continent. One example of this is the construction of a 1,400km coastal railway in Nigeria, worth US$11bn, led by the China Civil Engineering Construction Corporation (CCECC) and the Federal Republic of Nigeria.[62] Another example is of the Bagamoyo Port in Tanzania. Funded by China Merchants Holdings and the Oman government, its construction was started in 2015 and on completion it is expected to handle up to 20 million containers annually.[63]

Overall, Chinese EPC firms are gaining more significance in developing markets. PwC Strategy& estimated the total value of signed contracts reached US$150bn in 2013 across developing markets, involving Chinese SOEs such as CITIC Construction, China Communications Construction Co. (CCCC), SINOHYDRO and China Railway Construction Corporation, among others.

Figure 3j: Footprint of Chinese state-owned enterprises in Africa



Source: PwC's Strategy&

Future infrastructure demand

Given the massive investments going into the B&R countries, the next natural question lies in projecting demand for infrastructure that will influence where investments and opportunities for involvement lie.

Projecting incremental infrastructure demand is an exercise that requires a careful balancing of existing assets with macro-economic, demographic and financial drivers. Performing this exercise on the scale of the B&R region further ramps up the complexity due to significant disparities in economic development and countries passing through different stages in their demographic transition.

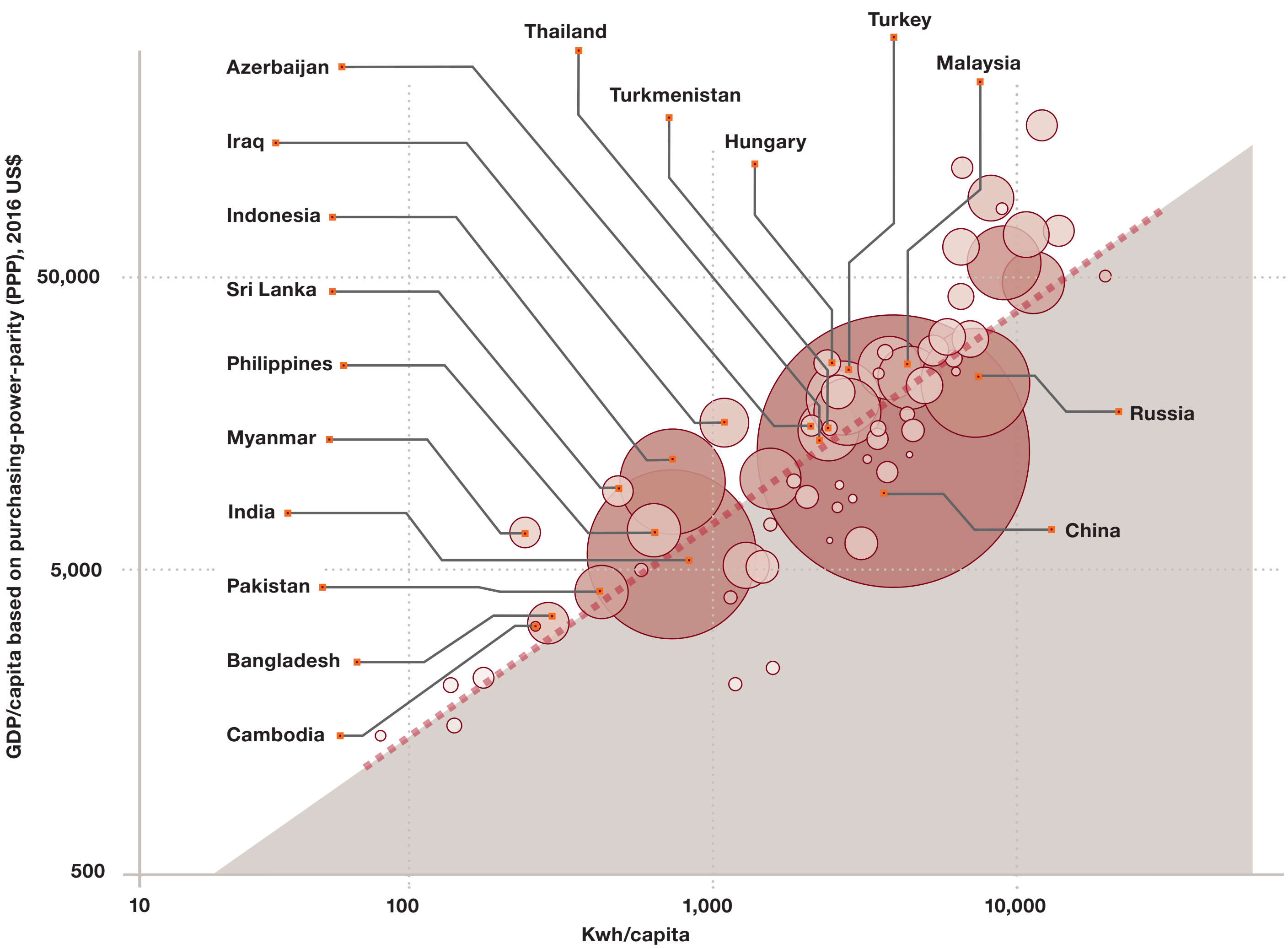
A recent PwC study, *China and Belt and Road Infrastructure 2016 review and outlook*, not only captures past and current infrastructure deals and projects, but also further forecasts infrastructure demand via an optimisation modelling exercise. The study indicates potential for significant growth in power utilities in a number of middle-income countries where rising standards of living have been outpacing power consumption per capita. Middle-income countries in this group will experience some of the B&R initiative's highest GDP and population growth rates and this will have a tightening effect on power fundamentals.

Countries further down the development curve such as Pakistan and the Philippines should experience continued rises in industrial power consumption. Meanwhile, countries higher up the development curve such as Turkey and Malaysia will likely experience rising household income and residential power demand.

The study points to the potential for a significant ramp-up in power projects as governments and private players seek to bridge the gap. Regulation, political instability and access to capital markets could, however, act as a drag on a case-by-case basis.

Forecasting infrastructure demand indicates where Chinese investment may be headed, and thus where foreign companies who want to tap into these opportunities may look to be involved. After identifying these opportunities, the next part of the report further delves into how foreign companies can work together with Chinese enterprises in B&R projects and, in the vast sea of opportunities, offers some guiding principles to identify risks and evaluate projects with commercial potential.

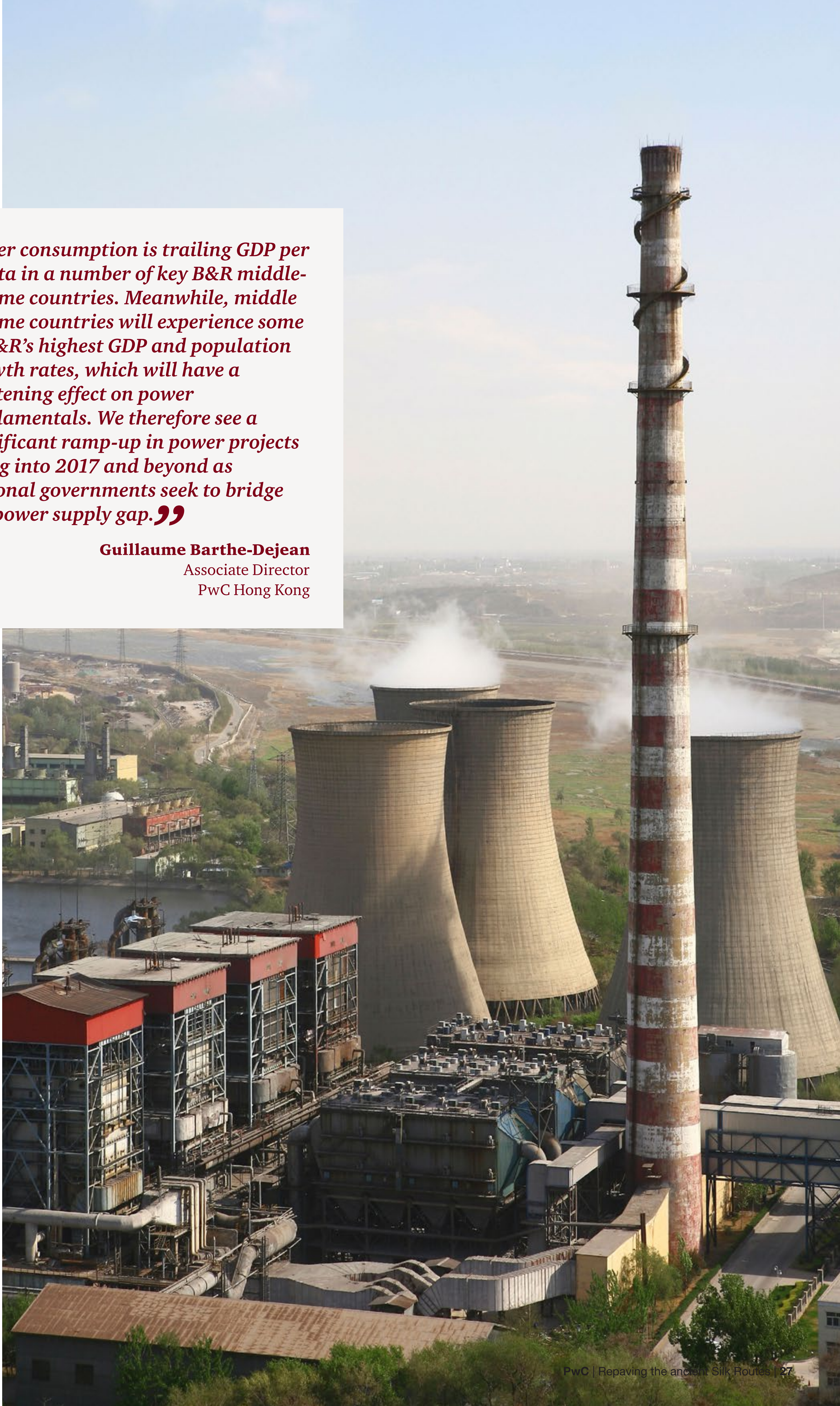
Figure 3k: Belt and Road: GDP per capita vs power demand per capita



Source: IMF, World FactBook, PwC China proprietary

"Power consumption is trailing GDP per capita in a number of key B&R middle-income countries. Meanwhile, middle income countries will experience some of B&R's highest GDP and population growth rates, which will have a tightening effect on power fundamentals. We therefore see a significant ramp-up in power projects going into 2017 and beyond as regional governments seek to bridge the power supply gap."

Guillaume Barthe-Dejean
Associate Director
PwC Hong Kong



Chapter 4: Opportunities for foreign companies

International partnerships

Since the late 1990s, China has sought to internationalise in order to enhance its competitiveness on the global stage. Its increased focus on overseas acquisitions has been a progressive approach to build on existing capabilities and create access to new markets, which has been further emphasised in China's 13th Five-Year Plan announced last year.

From the Growth Markets Centre's conversations with the Chinese players, we have found that they continue to be keen on partnering with global players, especially those from developed markets. Such partnerships not only help further push the boundaries of capability development for Chinese enterprises, but also offer a way to work with experienced companies across the value chain, in order to drive the optimisation of asset management. Partnering with other international players which have prior experience in markets can help Chinese enterprises benefit on many fronts.

Collaboration between China and foreign companies on B&R projects offers benefits for both parties in two main categories: 'knowledge exchange' for Chinese SOEs and 'access to new mega projects' and the associated ecosystems for foreign companies.

With this in mind, we believe that foreign companies, MNCs and financiers can partner with Chinese companies in B&R activities on three levels: supplies, construction partnerships, and financing and/or divestment.

> ***"Chinese companies now have greater demand and acceptance of working with foreign companies in infrastructure projects. Chinese companies will increasingly not bring just their EPC capabilities, but also their financial prowess to B&R countries. The Chinese companies' transition from construction contractor to investor and operator is new to them – not least abroad – and in this they will benefit and seek partnerships from a wide range of multinational companies and financiers."***
>
> **Joshua Yau**
> Principal - Infrastructure
> PwC Strategy& China

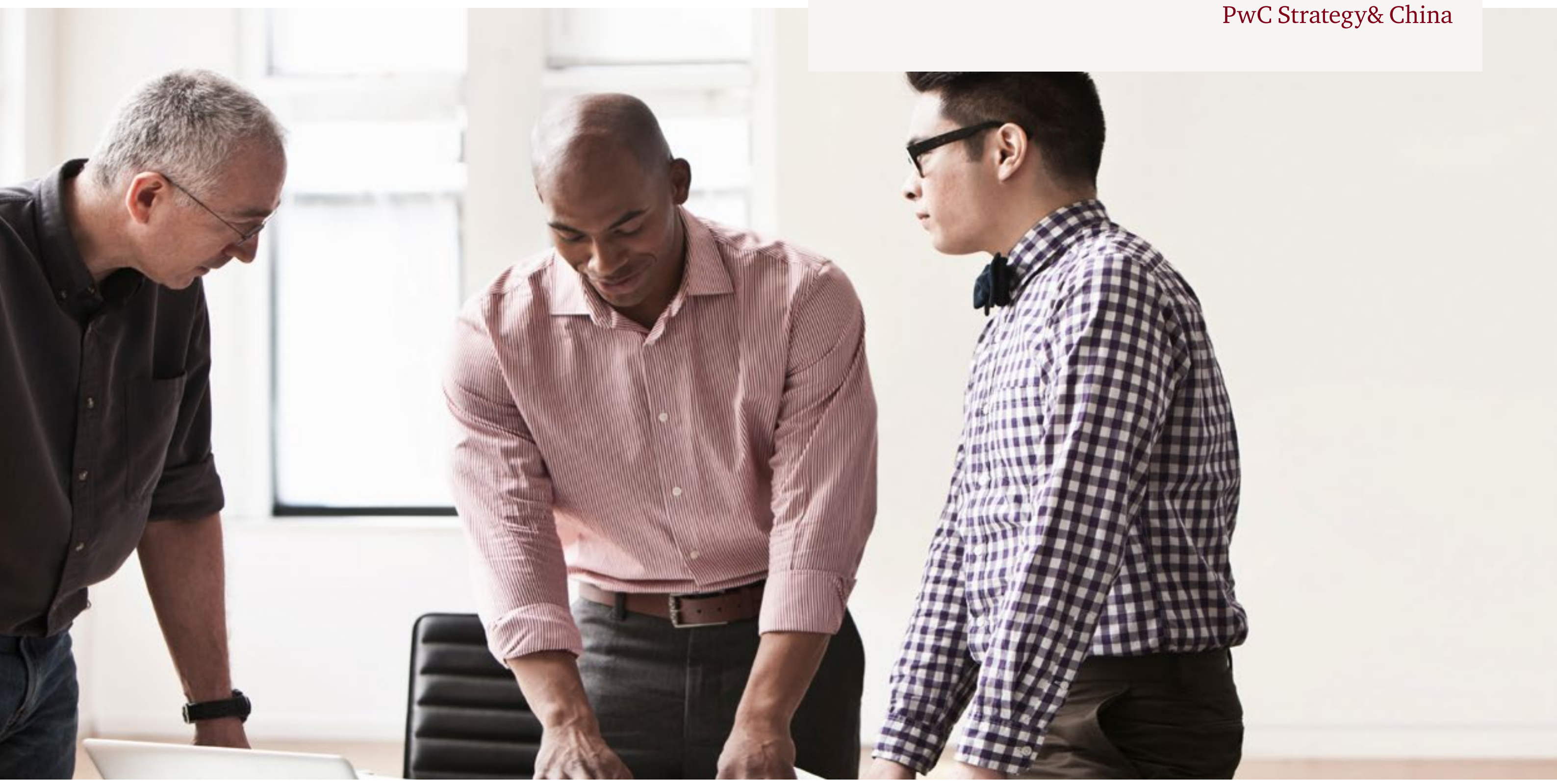


Figure 4a: Opportunities for foreign companies to be involved in the Belt and Road activities

Investment of assets
International investors can provide additional capital and investments through co-investing in projects, or investing in Chinese instruments

Partnerships in engineering, procurement and construction (EPC)
Major global EPC firms can partner with Chinese companies to provide technology and technical know-how

International project management
Companies can contribute project management experience managing multiple stakeholder partners, in remote locations, across several territories

Supplying construction equipment and machinery
Companies in traditional sectors such as engineering can supply Chinese SOEs/companies with construction equipment and software for infrastructure projects in developing countries

Operation of assets
The capabilities in managing the complex operations after completion of the construction phase will be of value to many B&R projects in developing markets

Divestment of assets
With their advanced technologies and competencies, companies can take advantage of Chinese outbound investments as a means to liquidate assets for financing

Source: PwC analysis

1. Investment of assets

International investors and financiers can also tap into the opportunity to partner with Chinese companies by providing capital and investments. Belt & Road projects are usually explicitly or implicitly backed by the Chinese state and therefore there is an improved risk-return ratio in many situations. Furthermore, given that host governments along the B&R will have received significant financing and support from China and multilateral banks, these governments will take more care to minimise disruptions. However, it must be acknowledged that not all B&R projects are guaranteed sound investments, even with Chinese and host country support, as some projects will be deemed strategically important even if they are not obviously profitable. Nevertheless, it has been seen that China does welcome investment support, to bridge the funding gaps on many infrastructure projects.

For example, Qatar's Al-Mirqab Capital partnered China's SOE SINOHYDRO Resources with a 49% share in the construction of a thermal power plant in Port Qasim, Pakistan under the US$ 46 bn China – Pakistan Economic Corridor owing to the attractive returns and significantly mitigated risks made possible because of backing by SINOSURE to cover a wide scope of risks. As a result, the 'multilateral public-private partnership (PPP)' project built on a Build-Own-Operate (BOO) basis offered attractive returns with significantly mitigated risks, attracting further investments from Qatar's Al-Mirqab Capital.

Foreign MNCs can also explore opportunities to invest in Chinese instruments such as entering into limited partnerships in a Silk Road Fund or CITIC fund, or by co-investing in Chinese led projects.

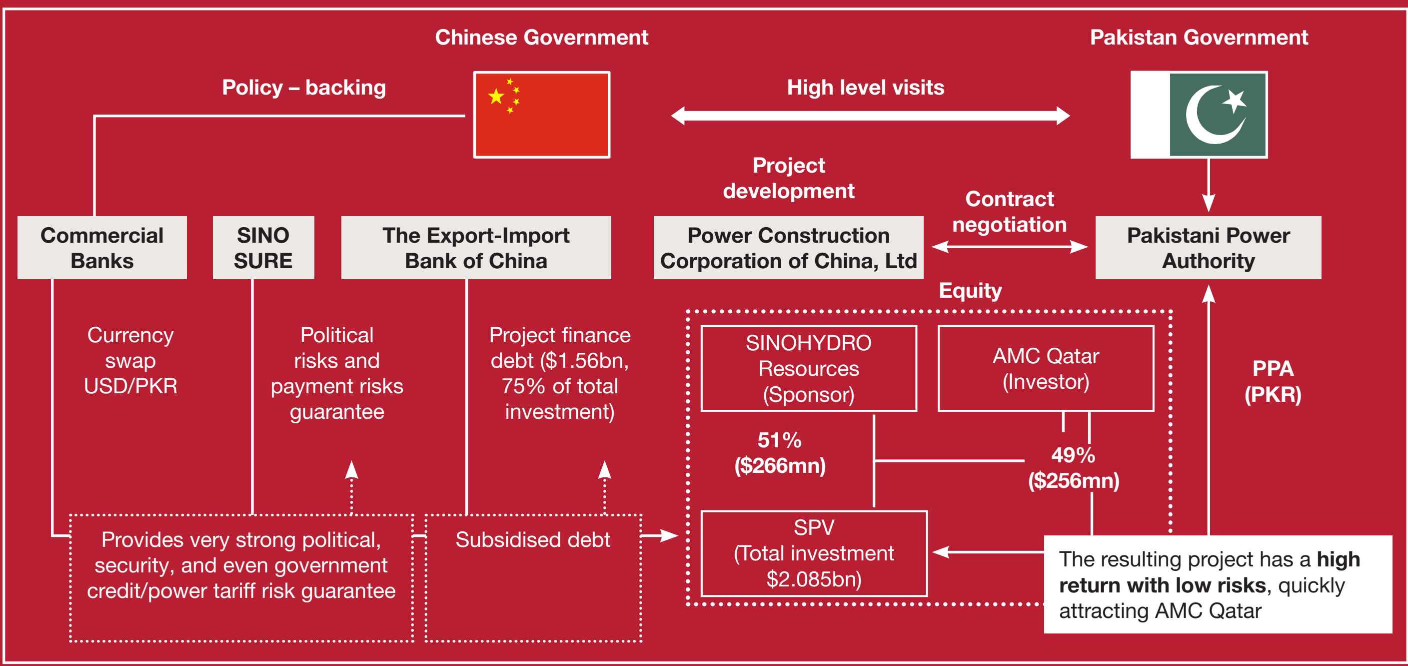
Case study

SINOHYDRO Pakistan Qasim PPP Thermal Power Project

Strong policy backing demonstrated in subsidised funding and risk guarantees from the Chinese government improved potential returns and lowered risks. The resultant profile proved attractive to a Qatar investment firm.

Such multilateral PPP model projects allow foreign MNCs to access developing countries' infrastructure opportunities. Also, with Chinese government-backed financing, these projects can better attract credit-worthy borrowers. It also results in improved performance of infrastructure with the involvement of large-scale international companies which offer cost advantages along with world-class expertise.

Figure 4b: Multilateral PPP model of SINOHYDRO Pakistan Qasim PPP Thermal Power Project



Source: PwC's Strategy&, National Electric Power Regulatory Authority, Islamic Republic of Pakistan

There have been several examples of private equity funds set up to invest in B&R projects, such as the US$4.8bn Green Ecological Silk Road Investment Fund. This is the first ever Chinese PE fund aimed at improving the environment, backing projects on solar panel construction, clean energy and ecological remediation in China and B&R countries. Investors were made up of top Chinese enterprises such as China Oceanwide Holdings Group, Huiyuan Group and Sino-Singapore Tianjin Eco-city.[64]

General Electric has pledged a US$1bn infrastructure fund in Africa to help finance projects in the continent following the growth of its orders from Chinese SOEs and its increasingly close cooperation with Chinese EPC firms in the electric power, railway, and healthcare sectors in Africa.[65]

Similarly, Maersk Group, a Danish container shipping and oil conglomerate, also has plans to co-invest to offer transport services to its Chinese partners on B&R projects in the next ten years. The company sees the B&R initiative as a platform to tap into growth opportunities both inside and outside China, after being hard hit by the decline in container freight rates and oil prices in recent years. One of its first ventures was with China's Qingdao Port Group to jointly invest in a new port terminal in Vado Ligure in Italy, due to be opened in 2018.[66]

China is also currently Maersk's largest export market, accounting for 35% of the Danish company's export volumes. It is seeking to further 'develop closer links with Chinese companies involved in these two trading routes'. Its terminal arm, APM Terminals, is also working with the state-owned China Communications Construction Co. (CCCC) to build a port in Tema, Ghana, and has awarded lead contractor status to a subsidiary of CCCC.[67]

2. Partnerships in Engineering, Procurement and Construction (EPC)

The B&R initiative also provides foreign companies with the opportunity to be an EPC partner with enterprises from both China and countries along the B&R in order to share their globally renowned technological expertise. This experience is even more valuable when it relates to knowledge of certain key geographies along the Belt and Road, which companies from China and the B&R countries might be new to. This has been seen to be successful with traditional Spanish partners in Latin America or French companies in Francophone countries.

Global partnerships also offer Chinese SOEs legitimate opportunities to learn about cutting-edge standards, technologies and solutions for developing markets. For example, foreign MNCs' best practices on the environmental front – featuring environmentally-friendly designs and engineering, efficient buildings, advanced waste processing and energy-efficient transportation hubs.[69] Chinese players can benefit and gain a competitive edge with host governments and constituents that increasingly care about the environment.

The benefits certainly go beyond the B&R project itself on both sides. The partnerships which are formed on the B&R project can often extend in home countries to provide foreign companies with strong partners for access to the China market and vice versa. It is necessary to strike a balance between collaboration and competition from a long-term perspective.

In other cases, partnerships with local EPC firms are sometimes favoured. KazMunayGas (KMG), a Kazahstani oil and gas company involved in the exploration, production, refining and transportation of hydrocarbons, has made a joint venture with the CEFC China Energy Company (CEFC China) to develop oil refining and gas station networks in Europe and Silk Road countries. Apart from possessing critical knowledge and experience of local EPC firms with infrastructure construction in their own countries, partnering with Chinese players also supports technology and know-how transfer, making it possible for the local firm to also eventually operate and manage the infrastructure.[70]

In another example, Northern Railways, a subsidiary of Aspire Mining, an Australian exploration company focused on Mongolia, won the contract to build and operate a 546km railway to extend Mongolia's national rail network from the city of Erdenet to to Ovoot, the site of the Ovoot Coking Coal Project, a large scale project in Mongolia. The project has since been included in the Northern Rail Corridor connecting Tianjin port on China's east coast with Russia via Mongolia, and opens up the possibility of funding by the SRF and China Export and Credit Insurance Corporation (SINOSURE), etc.[71]

"B&R projects that receive Chinese state financing actually benefit from a myriad of other explicit or implicit subsidies and support from the Chinese governments. These include subsidised low interest rates or sovereign guarantees. More implicitly, host governments might simply wish to protect the projects and honour contracts in order to preserve their larger relationship with China, which now funds a bigger part of their budget. Hence, the B&R initiative improves its projects' risk-return ratio."

Joshua Yau
Principal - Infrastructure
PwC Strategy& China

3. International Project Management

The need for strong project management is even more pronounced when infrastructure projects straddle multiple territories or are based in remote locations. Although many enterprises from those countries along the Belt and Road, including China, may have plenty of experience in constructing large and complex infrastructure projects in one country, they might not have as much experience in doing so across multiple countries in remote locations. It is in this instance, that foreign companies with the experience of overseeing and managing complex infrastructure projects involving multiple countries and stakeholders have a potential role in partnering with companies along the B&R.

In remote locations, the regional community might have limited experience in supporting large projects with adequate services, such as sub-contracting work, supplying equipment and providing international banking services. Furthermore, lapses in the data communication infrastructure could potentially hinder communication between the work site and the decision making office. Given these risks, partnerships with foreign companies with proven experience in the delivery of cross-territory projects in remote locations will be critical for success.

4. Supplying construction equipment and machinery

Chinese EPC players have already been working closely with foreign MNCs on B&R projects, especially those which possess global expertise in manufacturing technologically advanced equipment and solutions as well.

Equipment and technology suppliers can support Chinese companies' overseas infrastructure and industrial projects in much the same way as they have been supporting Chinese customers' projects within China for the past decades.

General Electric, which supplies construction equipment to Chinese EPC companies, reported that its total orders from Chinese EPC companies – of which 40% of equipment will be manufactured in China – have increased threefold from a year ago. Its involvement and cooperation with Chinese SOEs is also deepening, from being an equipment supplier to an integrated solutions provider in financing and operations.

General Electric's most recent order was to supply equipment including steam turbines, boilers and generators for a power plant along the China–Pakistan Economic Corridor. According to the general manager of the joint venture established for this project, General Electric was chosen for its 'global expertise in manufacturing key equipment for coal-fired power plants' and 'proven track record in Pakistan'.[72]

Such partnerships with Chinese customers outside China, as described above, can sometimes bring benefits to foreign companies' business inside China.

5. Operation of assets

The experience and skills needed in constructing a new railroad, highway, dam, port or airport as compared to operating it efficiently and profitably are very different. This is accentuated in Belt & Road projects due to the numerous geographies, governments and stakeholders involved. This therefore provides an opportunity for operators with experience in managing such complex facilities. For example, the operators of foreign airports such as in Europe, may find that their knowledge and expertise is of value to governments along the Belt & Road, who have built new airports, but need support in running them effectively and profitably.

Operators can bring their expertise in managing not only the infrastructure facility itself, but also aspects of the supporting ecosystems such as key suppliers, labour unions and key customers. Experience in effectively managing these aspects will help to ensure that the facility operates effectively, meets its expected targets and also is well maintained, thereby ensuring its projected lifespan is met. Both of these factors lead to the increased effectiveness and profitability of the facility.

6. Divestment of assets

In addition to supplies and sales, foreign companies can also leverage Chinese outbound investments as sources of financing for their divestments. This falls in line with China's progressive acquisitions to enhance capability in its enterprises, and at the same time offers the foreign company a way to liquidate its assets for financing.

For example, Gamesa Corporación Tecnológica, a Spanish manufacturing company principally involved in the fabrication of wind turbines and the construction of wind farms, sold its 28MW Barchin project to one of China's five largest state-owned electricity providers, China Huadian Group Corporation, at US$161mn. The Barchin project, located in Cuenca in east central Spain, features 14 Gamesa G90 2MW turbines and began operating in 2012. For Gamesa, the deal was a way to unload its assets and reduce debt. Beyond this, the deal could also help Gamesa cement its ties with Huadian, another long-standing customer and partner in China, possibly even opening up access to China's growing offshore wind market.[73]

“The Belt and Road initiative represents a great opportunity for international businesses to supply, support and partner with Chinese and other international companies as this massive development takes shape. For example, Australian businesses have experience, expertise and technology garnered from developing infrastructure across a very large country, focused on the movement of food and natural resources, that will prove valuable to Belt and Road projects.”

Udo Doring
CEO & Executive Director
The Australian Chamber of Commerce, Shanghai

“Chinese infrastructure, development and energy players aim to be – if not already are – global leaders in their fields. But as they continue to expand their presence, especially in developed markets, they will also become more like their global competitors in seeking more diverse and deeper partnerships. There are very strong collaboration potentials between Chinese players and foreign partners and even competitors.”

Tiger Shan
Partner
PwC’s Strategy& China

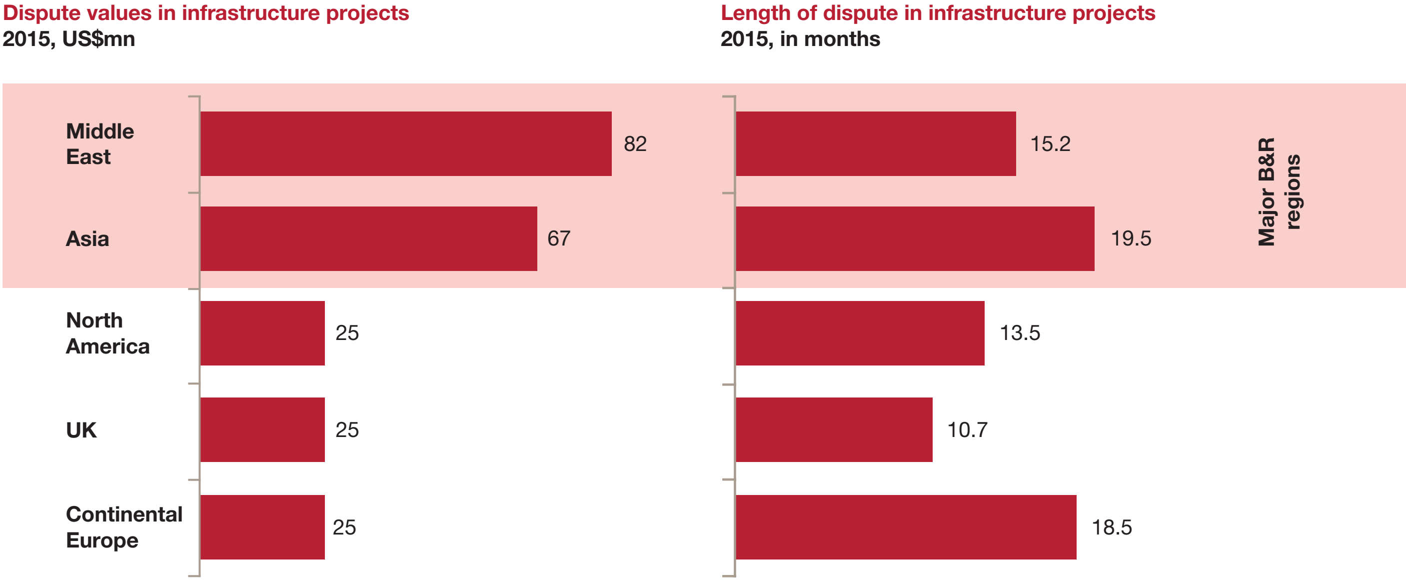
Chapter 5: Unique Belt and Road considerations

Whilst the opportunities for foreign companies to participate in B&R projects are numerous and diverse, such projects are frequently developed under conditions which are complex and often beyond a company's control. Particularly in the growth markets in which most of the B&R projects are planned, institutional voids can prove to be very disruptive to project completion (refer to Figure 5a).

Foreign companies may well find their usual project management evaluation and approach inadequate amidst the institutional voids which characterise many of the countries along the B&R routes, such as inconsistency in regulatory regimes and underdeveloped credit markets.

> *"China's Belt and Road initiative is potentially one of the largest geo-economic exertions of all time. MNCs and financial institutions need to invest in understanding the feasibility of various program components, associated time horizons, and how they could or would impact the global economy and operating environment, if and when they come to fruition. The Belt and Road, as part of China's many outward projections, underscores the urgent need for MNC leaders to understand what 'China exposure' means for their businesses, both positively and negatively."*
>
> **David Hoffman**
> Senior Vice President Asia, The Conference Board
> Managing Director, The Conference Board China Center for Economics and Business
> Leader of the Conference Board China Global Impact Program

Figure 5a: Companies run a greater risk of project disruptions in major Belt and Road regions



The value of a dispute is the additional entitlement to that included in the contract, for the additional work or event which is being claimed. The length of a dispute is the period between when it becomes formalised under the contract, and the time of settlement or the conclusion of the hearing.

Source: Arcadis Global Construction Disputes Report[74], PwC analysis

Regulatory regime inconsistencies

Inconsistency in regulatory regimes affects many B&R projects, as many such projects are involved in monopoly sectors (e.g. power grids), or operate assets of national security interest (e.g. oil refinery and storage tanks) which require close regulations to avoid abuse of monopoly power or compromise of national interest. The investor returns are also closely tied to public subsidies for projects such as public transportation, therefore posing a direct impact on the firm's ability to make revenue and service the loans. Given the direct and substantial impact of regulatory regimes on the projects, any inconsistency in the policy development and implementation could cause problems in project operations.

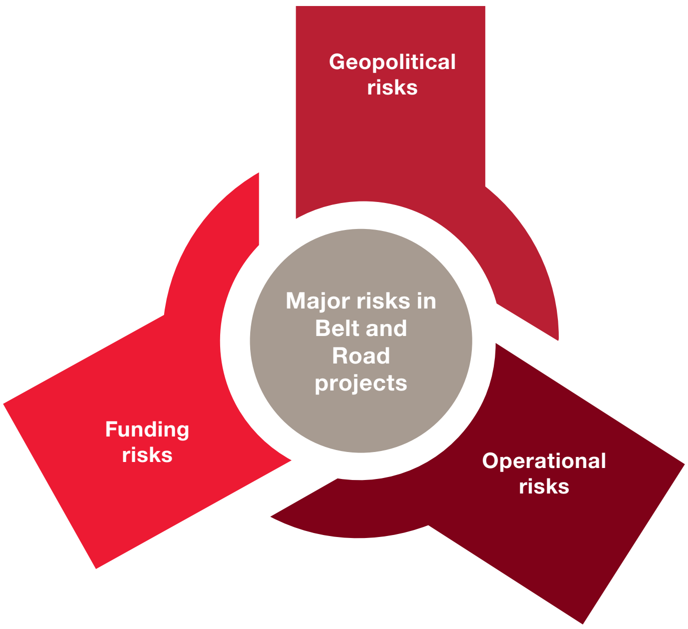
Underdeveloped credit markets

Even though China is committed to financing the B&R projects, many private investors are still concerned about the underdeveloped credit markets in many of these countries. Limited visibility for fund monitoring and the weak enforcement of contracts which is typical in a developing market can be amplified if the company gets involved in a large-scale B&R project which involves the management of a complicated and constantly-changing network of contractors and subcontractors. If not managed properly, companies risk getting trapped in a labyrinth of financial turmoil, which could eventually lead to cost overrun or even unbankability.

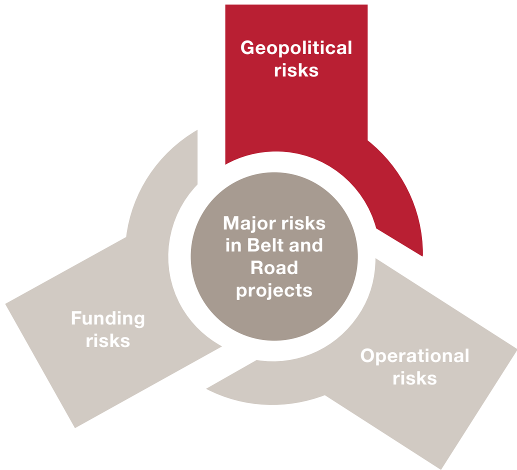
Therefore, acknowledging that these voids exist in a variety of forms depending on the specific growth market, it is important for companies to proactively identify, evaluate and manage the different types and scale of risks they might face when participating in B&R projects.

In this section, we will be highlighting three pertinent risks – geopolitical, funding and operational – which are most associated with B&R projects, and how they manifest themselves (refer to Figure 5b).

Figure 5b: Overview of the major risks that Belt and Road projects face



Source: PwC analysis



Geopolitical risks

Geopolitical dynamics have a significant influence on regulations, which play a central role in many infrastructure projects. In addition, the long gestation periods that outlast political cycles, the significance to bilateral relationships and the cross-territorial involvement of B&R projects further heighten geopolitical risks (see Figure 5c).

Figure 5c: Geopolitical considerations for Belt and Road projects

Long gestation period, significance to bilateral relationships and cross-territorial involvement heighten political risks

Long gestation period

- Gestation period typically longer than political mandates, exposing the project to a lack of policy continuity
- Projects can be subjected to radical changes in policy as the elected official changes
- Consistent political will with sustained focus and positive relationship with China is critical

Significance to bilateral relationships

- Many B&R projects are high profile projects on a government-to-government level
- Economic growth and the involvement of China in the host country inevitably influence the internal political dynamics
- The projects can be affected by the relationship of China with the host country and its neighbours

Cross-territorial presence

- Concerns towards increased presence of large economic powers in various regions, e.g. India in South Asia[75], Russia in Central Asia[76]
- Projects may get caught in the middle of cross-territorial disputes such as Kashmir between Pakistan and India[77], and Amu Darya River between Tajikistan and Uzbekistan[78]

As such, companies must maintain a strict focus on commercial viability, supported by an understanding of the geopolitical dynamics in the region.

Source: PwC analysis

Long gestation period

Infrastructure projects usually take a number of years to complete and they often outlast political mandates, exposing the project to potential policy changes under different administrations. With a long asset lifetime and contractual relationship, as well as the payback beyond political terms, companies need to be assured that the government currently in power meets the commitments so that their investments will not be adversely affected by future administrations. Therefore companies need to get a good grasp not only of the regional, but also the local political goals. The positions of the opposition parties are also critical, especially in understanding what they will support and block and their goals if successful in gaining power.

It takes consistent political will with sustained focus and a positive relationship with China to see the project through. Yet political will and sustained focus remain a greater challenge for many B&R projects, which are inevitably influenced by the changing local political dynamics in the host country. Governments need to assert their efforts against adversary consistently to ensure the progress of B&R projects.

Significance to bilateral relationships

Many B&R projects play a significant role in bilateral government relationships as they are often keynote projects pivotal to the economic development of the host countries. One such example is the Standard Gauge Railway project in Kenya. The US$3.8bn project, with China Road and Bridge Corporation as the prime contractor, plans to connect the relatively large economy with a port of East African importance to a number of landlocked economies, unlocking intra-Africa trade opportunities.[79] In another instance, Laos will be embarking on a US$6.8bn high-speed railway project as part of the B&R initiative[80], which represents more than half of the impoverished country's GDP. The B&R initiative projects are therefore regarded as a much-needed investment and economic stimulus to economies distressed by depressed energy prices and weak global demand.

As China's B&R investment addresses critical developmental bottlenecks in host countries, it is often perceived as an affirmation of the political ties between the two countries. However, these ties cannot be taken as guarantees of success. As such, these government to government agreements can potentially draw reactions from opposition parties and private sector bodies.

Cross-territorial involvement

Aside from typical bilateral government relationship factors, the geographically expansive nature of the B&R initiative raises geopolitical concerns. Some countries have expressed concerns as to the dominant foreign ownership and presence across the different trade routes. Connectivity, the concept that the B&R initiative expounds on, was identified by India's Foreign Secretary Subrahmanyam Jaishankar as having 'emerged as a theatre of present-day geopolitics'.[81] It is also noteworthy that the countries where B&R projects are planned and the nations which have concerns suffer from varying degrees of vulnerability from the lack of developed institutions and political stability.

B&R projects tend to straddle multiple territories, with the eventual objective of establishing a connection across large stretches of land and sea, and some of these projects are in the middle of cross-territorial disputes[82] such as the Amu Darya River between Tajikistan and Uzbekistan[83]. Therefore, given the projects' influence on both internal political dynamics and unilateral relations, companies might see themselves in the nexus of greater geopolitical currents as the B&R projects reflect China's relationship with the host country and its region (see following case study).

> ***"Companies need to be mindful of the many challenges and risks they are exposed to, when entering foreign markets, especially in many B&R countries where projects are strategically important, cross border, within monopolistic sectors, or are heavily influenced by government and political cycles."***
>
> **Mark Rathbone**
> Capital Projects and Infrastructure
> Asia Pacific Leader
> Partner, PwC Singapore

Case study

The political shift in Sri Lanka in 2014 led to over US$100mn losses due to project disruption, highlighting the geopolitical risks in Belt and Road projects

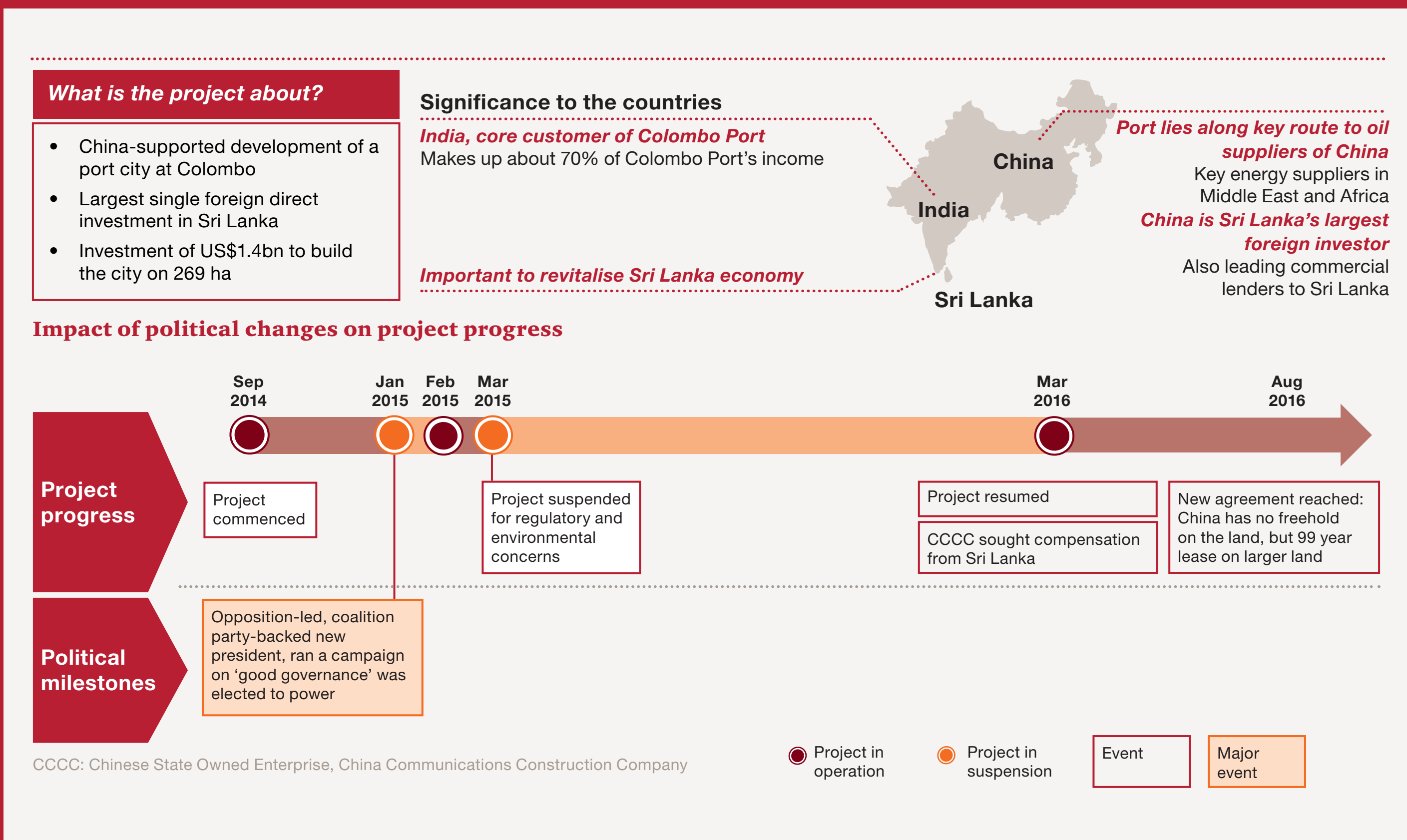
Sri Lanka lies in the middle of the East-West shipping route, carrying two thirds of the world's oil and half of all container shipments.[84] The small island state needs to balance the growing interests of China and India as it tries to turn its geography into an economic advantage. However, its efforts to build a port city get caught in political tussles as it struggles to rejuvenate its economy.

The development of a port city in Colombo illustrates the political impact a mismatch of infrastructure and the political lifecycle can have on a B&R project. The Colombo Port City project commenced in September 2014, three months before the Sri Lankan presidency changed hands.[85] As the project life cycle cut across the political cycle, the change in political mandate contributed to a year-long suspension of the project.[86]

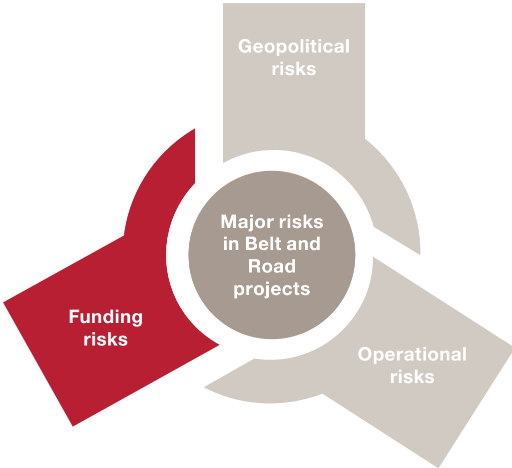
The significance of this B&R project to bilateral relationships played a part in the project's suspension. As the single largest foreign direct investment in Sri Lanka, which was perceived as a critical milestone to revitalise the Sri Lankan economy, the B&R project attracted much public attention. In the course of the presidential election campaign in January 2015, the currently elected president, backed by the main opposition-led coalition party and who ran on claims of good governance, came to power. Subsequently, the Port City project was suspended based on grounds of regulatory and environmental concerns.

Even though the project eventually resumed after renegotiating terms, the project disruption arising from the political shifts in Sri Lanka had resulted in the compensation payment of over US$100mn to Chinese developer, China Communications Construction Company (CCCC), underscoring the geopolitical risks companies face in B&R projects. (Refer to Figure 5d)

Figure 5d: The development of a port city in Colombo illustrates how the mismatch of infrastructure and political life cycle evokes political winds to Belt and Road projects



Source: Al Jazeera[87], Reuters[88], News.lk[89], Sunday Times Sri Lanka[90], Forbes[91], Colombo Gazette[92], Daily FT[93], PwC analysis



Funding risks

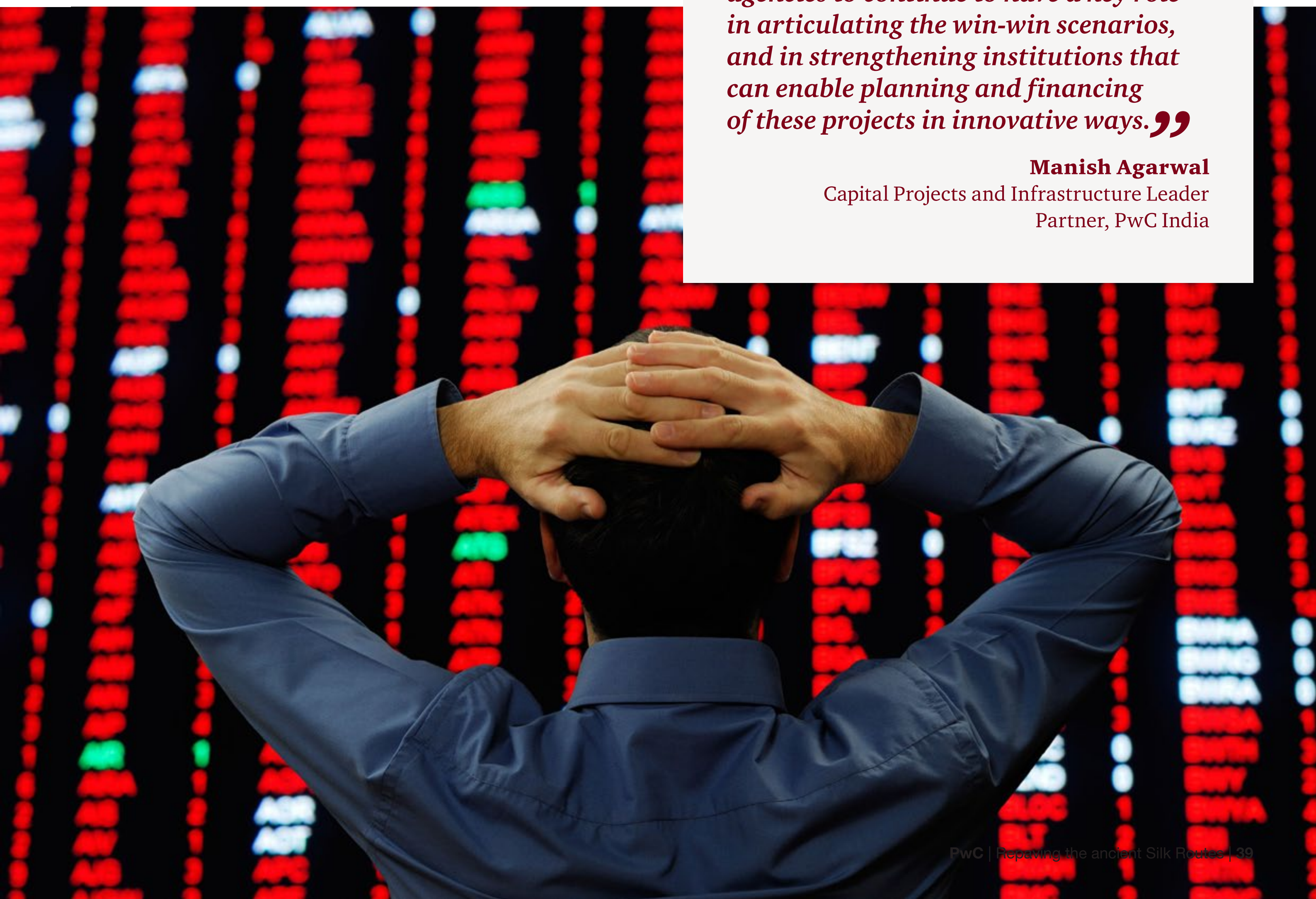
Large infrastructure projects often hold a high financial risk. The high capital intensity of these projects leads to a high debt service ratio, long pay-off periods, and uncertainty of forecast demand. The challenges are often exacerbated in cross-border projects where the structuring of finance needs to take into account different currencies and national financial capacities.

Financial risk takes on a different facet in B&R projects. There are typically three main sources of global financing for B&R infrastructure – the Chinese government (mainly policy-driven state funding), the host government and private institutions. Multilateral banks such as the World Bank, Asian Development Bank, and the AIIB also contribute some funds to B&R projects amongst other mandates.

To date, the Chinese government has taken on the lead financing role as many developing countries have limited means to fund the B&R projects in their country. Projects also vary in their ability to provide profitable returns.

Private funding is also still limited as many companies are concerned about the transparency of fund management, the effectiveness of the cross-border regulatory framework and the bankability of some of the projects. This funding gap therefore creates the most pertinent financial risk which needs to be addressed for B&R projects to take off.

> ***"Having designed several multi-geography corridors, we realise that traditional institutional structures designed for optimising local benefits often miss the trade-offs involved in maximising regional benefits. Also, as corridor projects create infrastructure ahead of demand, financing them becomes a challenge if they compete for capital with projects prioritised to address congestion. We expect multilateral agencies to continue to have a key role in articulating the win-win scenarios, and in strengthening institutions that can enable planning and financing of these projects in innovative ways."***
>
> **Manish Agarwal**
> Capital Projects and Infrastructure Leader
> Partner, PwC India

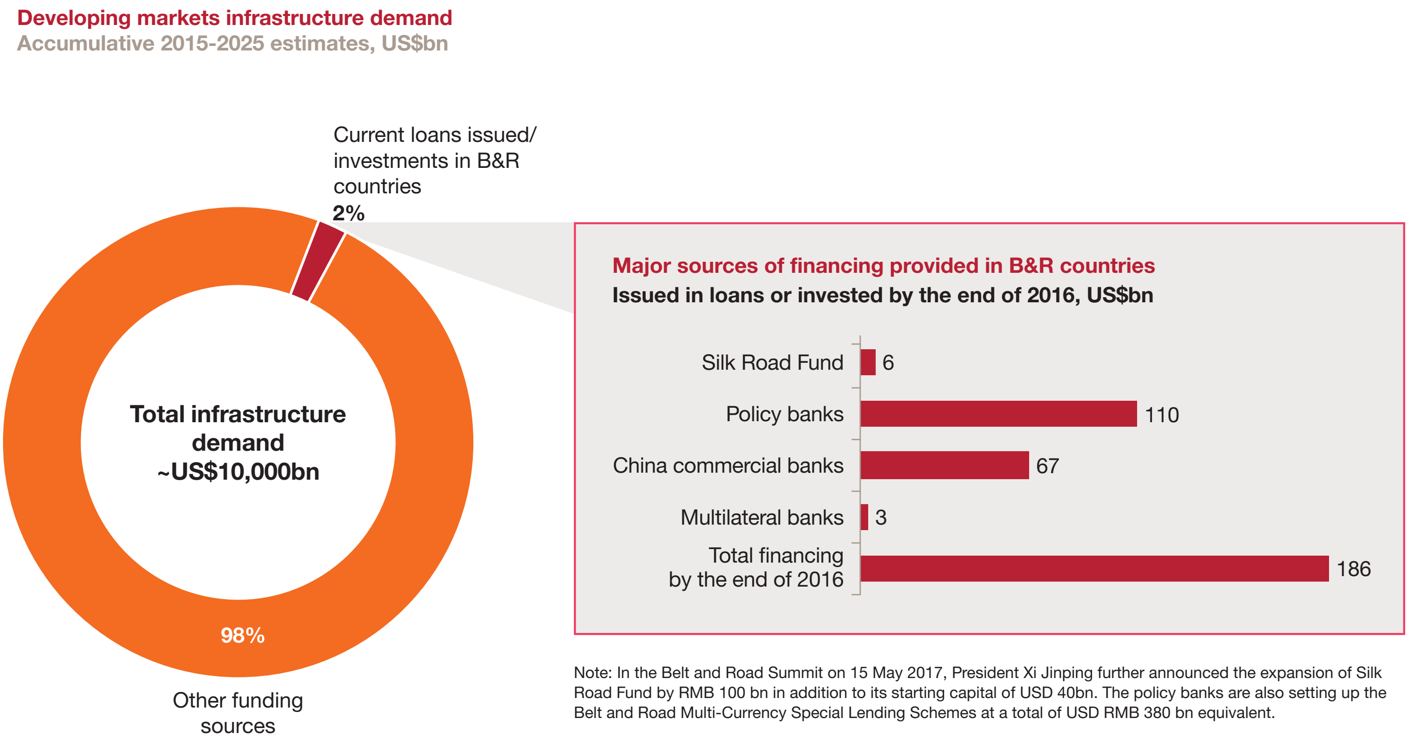


Chinese government taking the lead

To date the Chinese government has taken the lead on B&R projects. Until 2016, there was at least US$186bn worth of investments or loans into B&R countries, of which a significant portion originates from China. However it only makes up a fraction of the potential infrastructure demand in the developing markets (see Figure 5e). PwC's Strategy& estimates the potential infrastructure demand in the developing markets to be around US$10tn from 2015 to 2025, of which the main sources of financing identified only constitute about 2% of the financing needed to fulfil the infrastructure demand. While China might potentially increase its funding, it is unlikely to finance the B&R initiative entirely.

> *"Funding for major infrastructure projects in B&R countries may be slow to materialise. One reason for this is the time it takes to identify and develop new projects. A second reason is the lack of bankable infrastructure projects for all firms eager to finance and build them. While many emerging economies need more infrastructure, not all of them have the capacity to take on the additional debt needed to finance new roads, railways and power plants."*
>
> **Meredith Sumpter**
> Director of Asia Practice
> Eurasia Group

Figure 5e: As of 2016, there has already been at least US$186bn worth of investments or loans into B&R countries. However it only makes up a fraction of the potential infrastructure demand in the developing markets from 2015 to 2025



Note: In the Belt and Road Summit on 15 May 2017, President Xi Jinping further announced the expansion of Silk Road Fund by RMB 100 bn in addition to its starting capital of USD 40bn. The policy banks are also setting up the Belt and Road Multi-Currency Special Lending Schemes at a total of USD RMB 380 bn equivalent.

Source: Ministry of Commerce, People's Republic of China, Official Belt and Road Portal under the Leading Group on the Construction of the Belt and Road Hosted by the State Information Center, Official websites of the multilateral banks

Host countries' ability to pay

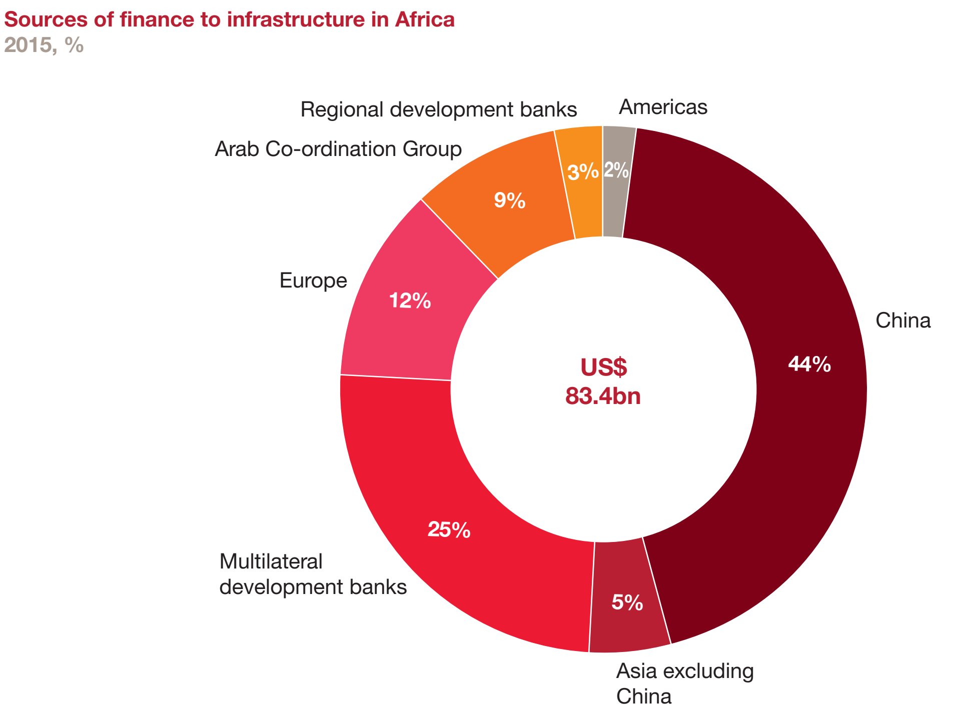
The host countries' varied ability to pay is another concern. The B&R initiative is a debt-financed infrastructure development strategy. In contrast to aid packages or foreign direct investments, China's lending plans place greater ownership of the financial risk on the recipients of the investment, most of which are developing countries with varied ability to finance them. Sixteen of the 65 countries on the B&R initiative are not rated on a sovereign basis. And of those that are rated, the countries' creditworthiness ranges from AAA down to B-.[95]

The host countries' varied ability to repay could also potentially lead to a network of interdependence guided by the exchange of resources and asset ownership. Some African countries are already approaching China to reschedule, freeze debt repayments or to pay back with resources for previous infrastructure projects (see Figure 5f).

Private funding cautiousness

Given that China is unlikely to fund the B&R initiative entirely, and host countries have varied ability to finance the projects, private capital is much needed to close the funding gap. However, the bankability of the B&R projects remains a pressing concern to the private investors. Many investors are still adopting a wait and see approach to see how the state capital will be deployed, and whether the initial investments will deliver their benefits. Private investors need to gain assurance in the transparency of fund management and the effectiveness of the cross-border regulatory framework supported by market principles to support a business case for business returns. China also needs to allay concerns that institutions might get entangled in projects where commercial logic and demand for public transportation are perceived to be secondary to political considerations. Until then, companies need to be mindful of the financial risk in many B&R projects.

Figure 5f: China makes up a significant source of finance to infrastructure in Africa



Source: The Infrastructure Consortium for Africa 2015[96], Johns Hopkins SAIS China-Africa Research Initiative[97], Reuters[98], RFI[99]

Operational risks

Large-scale infrastructure projects are vulnerable to going off track whilst being executed with many suppliers and contractors over several years. The different legal frameworks, volatility of exchange rates, potential incompatibility of technical specifications, differences in trading terms and greater likelihood of political interference further exacerbate the challenges in multi-territorial projects. Many of these lead to risks of delay, cost overrun or even un-bankability of the projects.

These risks may be compounded in B&R projects where key stakeholders are still gaining experience in infrastructure development and international projects of the complexity of the B&R initiative (see Figure 5g). These struggles are prevalent across different phases of the project life cycles: before starting, during project delivery and after construction.

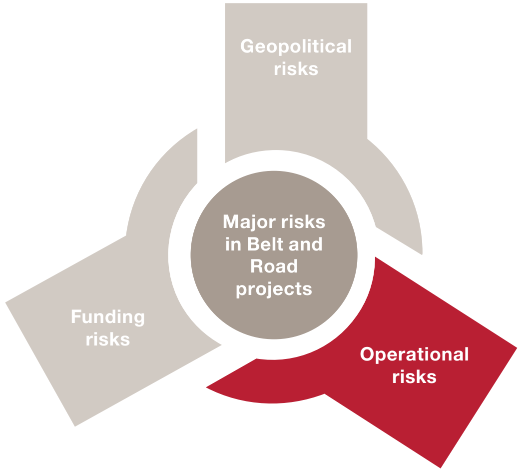


Figure 5g: Challenges operating in developing markets are amplified as SOEs work on improving their project controls, resource allocation and communication with stakeholders

It is therefore critical to remain vigilant in operational planning even with China's strong policy and financial support

Source: PwC analysis

Before starting

As an unprecedented endeavour that covers multiple underdeveloped territories, the B&R initiative brings many projects into new markets. It is therefore critical to appreciate how labour resourcing, construction equipment, logistics and scheduling in multi-country projects can be affected by the culture, traditions, labour productivity and technical proficiency in the host country before a project begins. However, these are often learned in retrospect. It becomes even more challenging in some B&R projects, where assessment of economic viability and project governance sometimes play a supplementary role in the larger context of the high-profile government-to-government negotiations that are taking place.

During project delivery

As many B&R projects are being built in developing markets, companies have to contend with the fluidity of business in developing markets, such as a reduced sensitivity to timelines, having agreed positions re-opened, suggested recourse at every hurdle or sudden retraction of credit lines during project delivery. The gap in international experience could potentially make it even more challenging as the Chinese SOEs and the host countries work on improving their project controls, resources allocation and communication with stakeholders during project delivery. As a result, much of a firm's finances and capabilities can risk getting caught in myriad project lapses.

After construction

Operational risks also go beyond the capability of defining and delivering the project. In many instances, it is not possible to extract the long-term value of the investments due to gaps in the development of consistent policies and supporting institutional arrangements in developing countries, which most B&R countries are. Without the establishment of a sound strategy which prioritises catalyst projects that set the economic activities in motion, or the development of supporting facilities and local competencies to maintain the asset, the project could easily descend from hyped expectations into a debt burden.

In summary, a B&R infrastructure project is not a one-time investment. Companies need to consider whether a cohesive programme of initiatives is planned to support the project during the evaluation, or they will face greater headwinds in operating profitably. It is therefore critical for companies to remain vigilant in operational planning, because without proper management of operational risks, even strong policy and financial support will not guarantee success.

B&R holds rich promise but has associated risks. The nature of B&R projects also further accentuates the geopolitical, funding and operational risks. Only with a clear understanding of the potential risks that B&R projects operate in, can companies find the best ways to manage them.

> ***"The B&R initiative is to be developed in countries with rather limited experience in successful delivery of large-scale infrastructure projects. This poses the risk of projects going off-track because of sheer operational reasons such as technical incompatibility, resourcing, stakeholder management or integration challenges. Therefore, the role of experienced partners, including international contractors, multilateral institutions and advisors, is absolutely critical to help build local capabilities and transfer know-how to mitigate risk of delays, cost overruns or projects not meeting their objectives."***
>
> **Agnieszka Gajewska**
> Capital Projects and Infrastructure CEE Leader
> Partner, PwC Poland

Chapter 6: Strategies to evaluate and select projects

In addition to analysing and evaluating the geopolitical, financial and operational risks, potential investors in B&R projects should make a strategic evaluation as to which B&R project to be involved in, as even though an investor may have strong government, funding and operational reassurances, these do not guarantee profitability.

In this section, we will highlight how this added reassurance can be achieved, with commercial viability assessment, review of the maturity of the infrastructure ecosystem and the establishment of a portfolio fit (see Figure 6a).

Figure 6a: Overview of the three strategies to evaluate and select projects

Companies can adopt ways to navigate through uncertainties with a commercial viability assessment, review of the maturity of infrastructure ecosystem and the establishment of a portfolio fit.

Commercial viability assessment

- Justify go/no-go decisions with market supply and demand forces
- Address to what extent companies are reliant on incentives provided by the governments

Review maturity of the infrastructure ecosystem

- Identify presence of strong partnership for policy making
- Review adequacy of multi-modal linkages such as logistics centres
- Assess availability of support industries and local competencies

Establish a portfolio fit

- Look beyond a single project's return to consider how it complements a company's wider portfolio

Source: PwC analysis

"Before committing to a multi-million, multi-year engagement such as a B&R project, it is important for companies to be aware of the underlying balance of political and economic objectives in order to ensure the sustainable progress of this international endeavour. Companies need to apply a strict focus on the commercial viability and returns of a B&R project and not just the government support it enjoys."

Allan Zhang
Chief Economist
PwC China and Hong Kong

Commercial viability assessment

Before committing to a multi-million, multi-year engagement such as a B&R project, it is important for companies to recognise that China has to balance its political considerations with economic ones to ensure the sustainable progress of this international endeavour. China views political returns, such as strengthened intra-government relationships and alliances, as well as the improvement in geostrategic positions, as critical to its long-term growth and stability.[100]

Therefore, some B&R projects might be funded and supported by China even if they do not meet traditional commercial viability hurdles. As such, companies must maintain a strict focus on commercial viability, supported by an understanding of the geopolitical dynamics in the region.

The geostrategic influence is not only on a government-to-government level, but also on the project execution level (see following case study). Most B&R projects are greeted with enthusiasm as they have the blessing and support of government-to-government agreements and projects' objectives and support are passed down through government agencies and SOEs. As such, the majority of the B&R projects are led by Chinese SOEs as the EPC contractor. This level of government focus and support often leads EPC contractors to be more optimistic about financial outcomes for a particular project. However, in spite of political support and other considerations, there is a critical need for contractors to establish a robust, unbiased business case, and also to engage in risk and scenario planning before proceeding.

Companies need to apply a strict focus on the commercial viability and returns of a B&R project and not just the government support it enjoys. This will include a number of first principle assessments such as demographic growth, consumer and enterprise spending and fundamental market demand and supply principles. This has to take into account the non-recourse financing arrangements, the motives of multiple project participants and the complexity of the contractual agreements, as well as the risk and uncertainties that could potentially change over the duration of the project. The model should also evaluate the value of the governmental loan guarantee and the probability of project bankruptcy during construction.

> ***"The challenge lies with the grantors to establish a robust business case amidst the larger context where political returns play an important role. The B&R initiative brings a debt-finance solution. It should encourage local governments and SOEs to look carefully at whether and how various infrastructure investments support their broader development objectives and addresses key bottlenecks."***
>
> **Agnieszka Gajewska**
> Capital Projects and Infrastructure CEE Leader
> Partner, PwC Poland

> ***"This level of government focus and support often leads contractors to be more optimistic about financial outcomes for a particular project. However, in spite of political support and other considerations, there is a critical need for contractors to establish a robust, unbiased business case, and also to engage in risk and scenario planning before proceeding."***
>
> **Allan Zhang**
> Chief Economist
> PwC China and Hong Kong

Case study

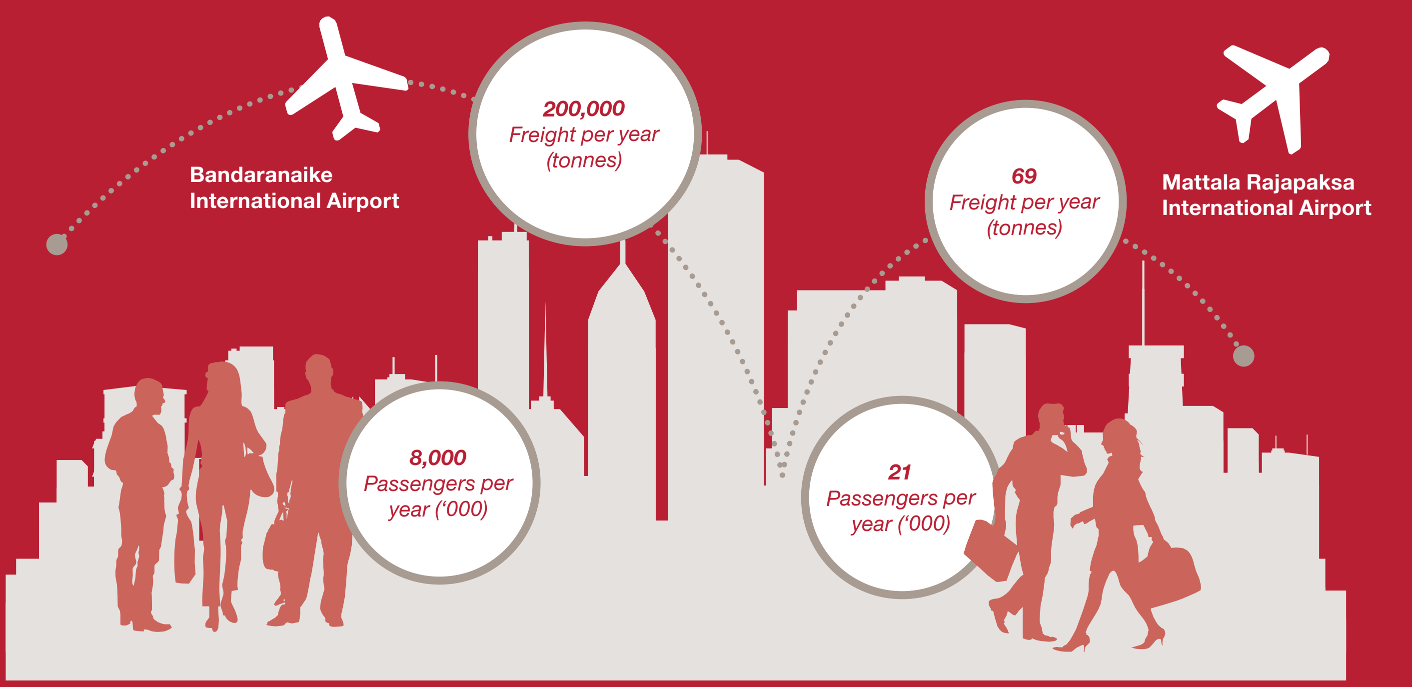
Insufficient market demand contributes to a loss of US$18mn a year at the Mattala Rajapaksa International Airport in Sri Lanka

Mattala Rajapaksa International Airport in Sri Lanka opened in 2013 at a cost of US$209mn, of which more than 90% came from a loan from China.[101] The airport was designed to accommodate a million passengers a year and developed to ease Sri Lanka's air traffic congestion. However, it is located in Hambantota, a developing city in the south of Sri Lanka, without the commercial activities or large resident population to support the need for an international airport.

Furthermore, usage of the airport was restricted by the need to develop the supporting infrastructure ecosystem of highways and commercial real estate, at a time when all infrastructure projects which had been agreed by the previous president were being thoroughly reviewed by the current coalition government and president.

Consequently, instead of strengthening and reigniting the Sri Lankan economy, the Mattala airport added to a massive debt of over US$8bn to China and contributed to an IMF bailout.[103] Sri Lankan Airlines subsequently shut down its operations in January 2015[104], citing that 'Mattala Rajapaksa International is not needed and is a distraction in Sri Lankan's efforts to turn itself around.' Forbes had indicated that the new airport made a loss of about US$18mn a year, underscoring the importance of establishing market demand principles to guide investment decisions (see Figure 6b).[105] In October 2016, China agreed to run the debt-riddled, revenue-draining Mattala Rajapaksa International Airport, in an attempt to turn it around.

Figure 6b: Mattala Rajapaksa International Airport in comparison to Bandaranaike International Airport in Colombo



Source: Civil Aviation Authority of Sri Lanka, 2014[102]


Arrival / Transit

As we have seen, as well as adhering to economic imperatives, companies should also consider isolating their assessment from the larger influence of the B&R initiative. Even though B&R projects are normally backed by strong government mandates, companies cannot assume that they are commercially secure, and insulated from the typical challenges all businesses face, such as commodity price drops. On the contrary, the assessment should address to what extent companies are reliant on incentives provided by the governments. Any incentives provided should be viewed as a bonus instead, so as to build resilience against any unexpected changes (see Figure 6c).

Figure 6c: Companies need to ensure investment decisions are backed with robust economics which are isolated from the larger influence of the Belt and Road initiative

Back investment decisions with robust economics

- Ensure your investment is backed by robust economic imperatives
- Anchored in market supply and demand principles
- Components that affect the top line (e.g. user price changes, ancillary revenues) and bottom line (operating and capital expenditure changes) should be factored in

Address to what extent companies are reliant on incentives provided by the governments

- Avoid assuming that you are insulated from business requirements just because the project is endorsed by the states
- On the contrary, the assessment should address to what extent companies are reliant on incentives provided by the governments
- Incentives provided should be viewed as bonus instead

Source: Expert interview, PwC analysis[106]

Review maturity of the infrastructure ecosystem

The B&R initiative is a network of regional infrastructure projects, each of which is an ecosystem of development. However, the pace of development for each part will differ. For example, the energy plants must be linked to pipelines and ports to roads for benefits to any part to be fully realised. The political and commercial benefits from infrastructure development can only be fully reached if the transport corridor develops into a true economic corridor.

It is therefore important for companies to evaluate not only the specific B&R project they are looking to participate in, but also the maturity of the economic corridor. In our view, there are three key questions to consider when adopting an ecosystem view (see Figure 6d).

> *"Companies should move beyond the evaluation of a single infrastructure project and adopt an integrated network perspective to evaluate its potential returns."*
>
> **Julian Smith**
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Figure 6d: It is important for investors to evaluate not only the specific Belt and Road project but also the maturity of the economic corridor

Key questions to consider when evaluating projects

1 Is there a strong institution for policy development?

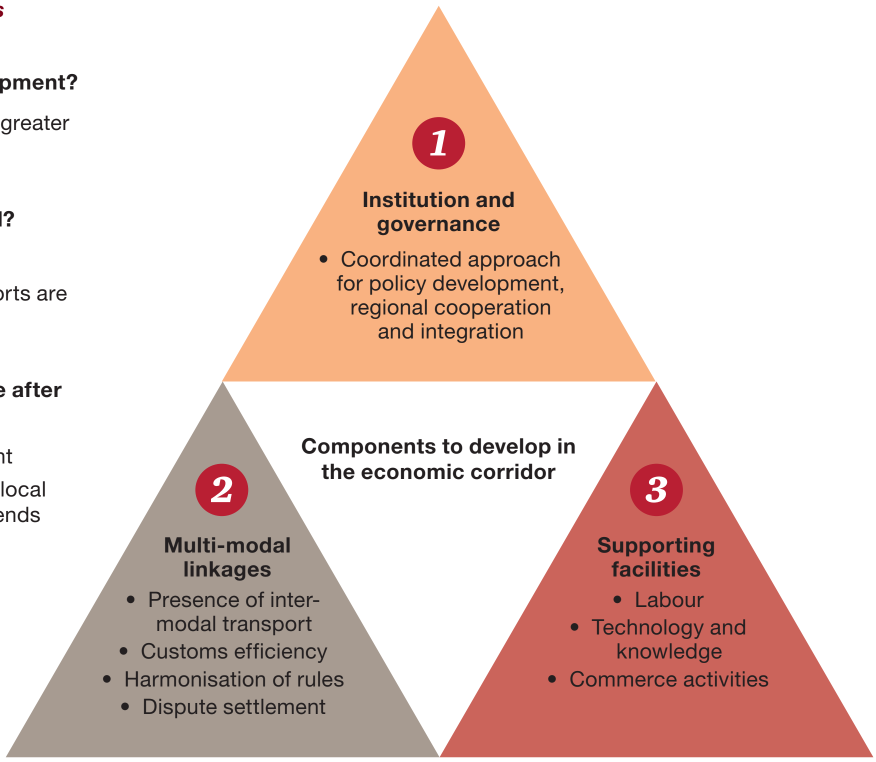
- To resolve conflicting interests and meet the greater objectives across transnational projects

2 Are the multi-modal linkages well addressed?

- Adopt a network perspective
- Evaluate how the transport nodes such as ports are linked with handling and storage facilities

3 Are there any supporting facilities to operate after construction ends?

- Expand the operational feasibility assessment
- Include availability of support industries and local competencies to operate after construction ends



Source: ADB[107], German Development Institute (DIE)[108], expert interviews, PwC analysis

1

Is there a strong institution for policy development?

The presence of an overarching directive is pivotal to facilitate coordination among the various stakeholders, resolve conflicting interests and meet the greater objectives across transnational projects. Sometimes, this can mean the compromise of smaller gains of individual parties to achieve a greater return as a whole. Therefore, a strong institution will be needed to put in place incentives and shape revenue consequences resulting from collaboration, supported by a clear decision-making structure over the operation and finance of individual actors in the system. This is ideal but far from reality in a transnational undertaking of this scale at the global stage such as the B&R initiative. As much as the B&R initiative needs a strong institution, its nature and scale, makes it difficult to have such an entity in the B&R system.

Having said that, companies should look out for B&R projects which are guided under an established and balanced, transparent policy framework that functions in a way that is close to market principles, and which are supported by a regulatory system that is able to work across the borders involved.

> *"A shared vison of the partipating countries will be needed to put in place incentives, and shape revenue consequences resulting from collaboration, in order to meet the greater objectives of the transnational projects which characterise the Belt and Road."*
>
> **Fons Kop**
> Partner
> PwC Netherlands

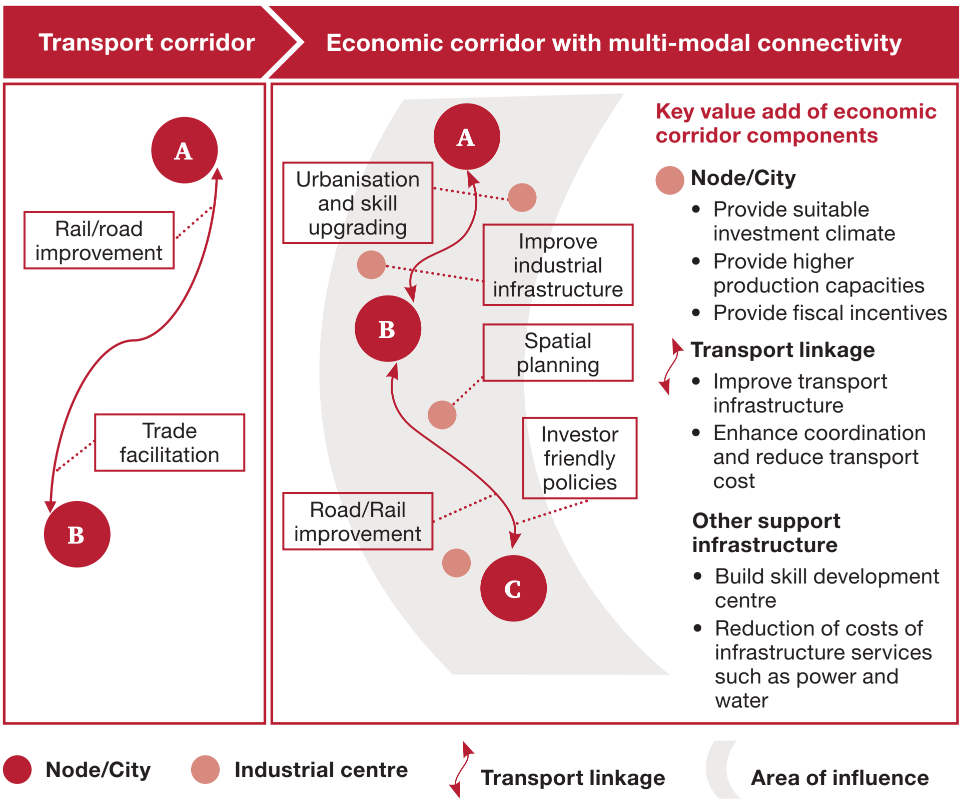
2

Are the multi-modal linkages well addressed?

China's hopes of increasing trade will not materialise if the corridors are only half built. Similarly, companies can only fully exploit the opportunities if various transport modes, links and nodes are linked. An effective multi-modal linkage can be developed through a combination of road, rail, water and air linkages that will ease the cross-border flow of people and goods, relieve trade obstacles, facilitate greater market access and eventually stimulate trade and investment (see Figure 6e).

> *"Economic corridors are focal points of B&R activities that take place in a multi-modal fashion with infrastructure developing in a networked manner."*
>
> **Fons Kop**
> Partner
> PwC Netherlands

Figure 6e: The economic gains can only be fully realised if the transport corridor develops into an economic corridor with multi-modal connectivity



Potential gains with a developed economic corridor and multi-modal linkages

Ease demand for infrastructure services, generating more output

- By increasing access to resource inputs (e.g. raw materials, labour) and potential markets

Facilitate regional cooperation through trade and investment

- In conjunction with the trade liberalisation and building supply capabilities

Realise the potential of production-sharing arrangements

- By reducing the cost of service links that connect remote production blocs
- By encouraging specialisation of production processes in a region

Source: ADB[109]

As such, companies should move beyond the evaluation of a single infrastructure and adopt a network perspective to evaluate the potential returns of the project they are engaging in. With every development of a port, companies should consider the plans for connecting rails and roads, as with gas pipelines for every development of a gas energy plant. This will involve considering multi-modal linkages, transportation and freight patterns to identify potential opportunities for critical projects related to the B&R initiative.

Case study

DHL successfully leverages the multi-modal linkages to develop new services with greater flexibility and cost savings

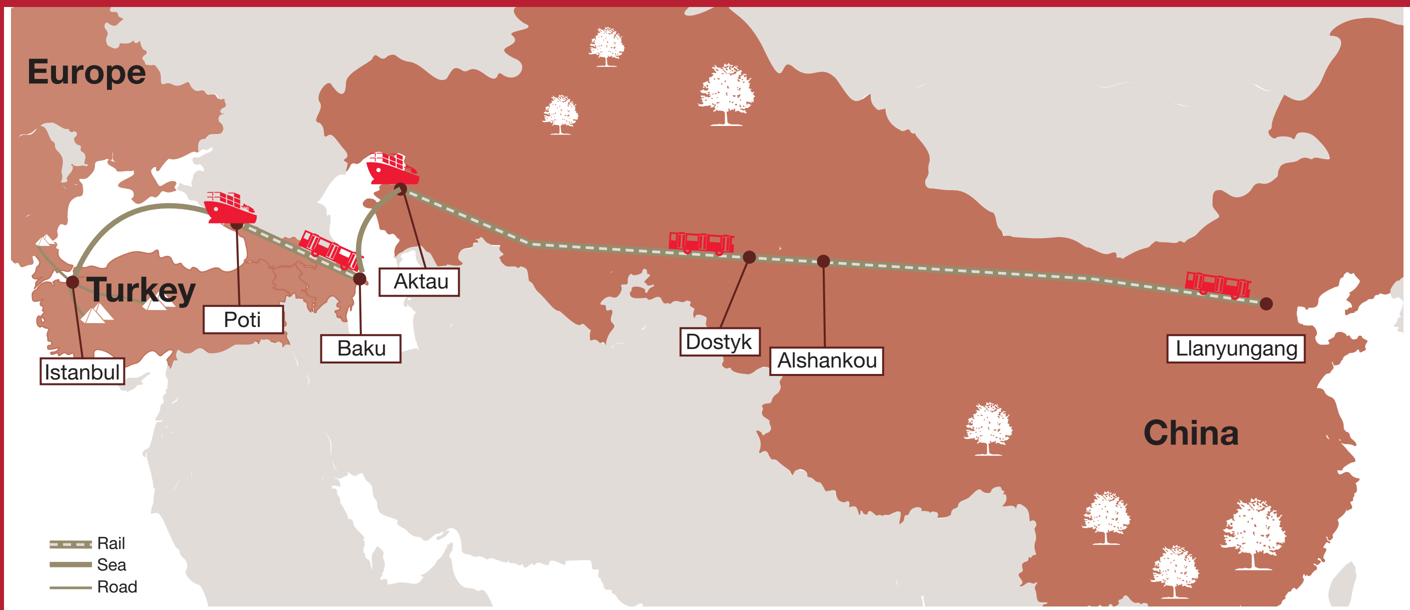
The multi-modal linkages will be a more significant consideration for companies in the logistics industry. With the multi-modal infrastructure in place, global freight forwarders play an important role in bringing the economic potential to reality by moving the trading goods onto the route. For instance, DHL Global Forwarding launched its multi-modal service on the Southern rail corridor between China and Turkey in December 2015 as an alternative to ocean and air carriage.

Turkey is located on a strategic junction on the trade route between China and Europe, which is the fastest route for the transfer of Chinese goods to Europe. China overtook Russia as Turkey's largest import partner in 2013, with trade exceeding US$25bn in 2016. Turkey also counts on Europe as its largest export partner, with Germany and United Kingdom accounting for almost 20% of its exports in 2016.[110] Hence, the enhanced connectivity will boost Turkey's strategic importance and economic development as a conduit between China and Europe.

DHL has introduced a new multi-modal solution that leverages the multi-modal linkages along the B&R initiative's Southern rail corridor. It traverses five countries and two sea transit segments between China and Turkey. Unlike other Trans-Eurasian rail links, this service runs along two transit segments crossing the Caspian and Black Seas, therefore combining surface carriage and transportation across water and streamlining the freight duration to an anticipated 14 days (see Figure 6f).

With less-than-container servicers to Europe, companies can improve the efficiency of fulfilment and inventory management at cost-effective rates. Broadly, the combinations of multi-modal services can reduce transport cost by up to six times as compared to air freight, helping companies to maintain their competitive advantage. Besides cost gains, the companies will also be connected to a larger market. This service sits on a critical stretch along the Silk Road Economic Belt in the B&R initiative which is estimated to generate more than US$2.5tn in trade in the next 10 years.

Figure 6f: DHL leverages on multi-modal linkages along the Belt and Road initiative's Southern rail corridor



Source: dhl.com.sg

This service launch clearly illustrates how the multi-modal network translates the economic potential of a region into reality. Charles Kaufmann, CEO of North Asia and head of value-added services at DHL Global Forwarding Asia Pacific, reaffirms the difference the B&R initiative has made in facilitating multi-modal freights: 'As the One Belt, One Road initiative takes shape, DHL has already begun laying down much of the infrastructure and support needed to ensure seamless trade flows between all countries along its routes.'

Kelvin Leung, CEO, DHL Global Forwarding Asia Pacific, also noted the challenges in acquiring a deep understanding of the varying regulatory and infrastructural conditions in each market, robust partnerships with local-market experts and authorities, and experience in brokering cross-border connections without compromising on overall speed and efficiency.[111]

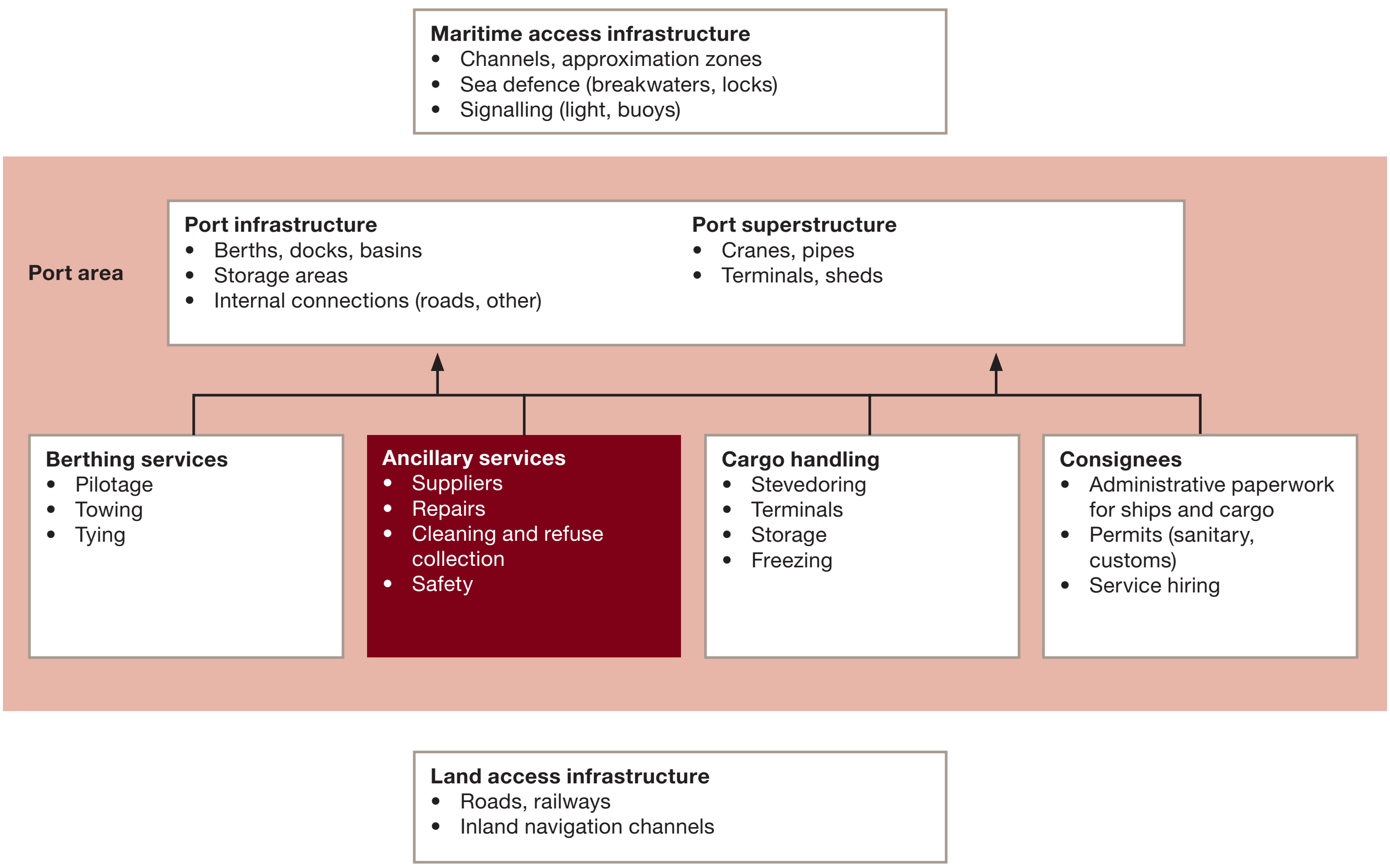
3 Are there any supporting facilities to operate after construction ends?

B&R projects are increasingly structured under the Build-Operate-Transfer (BOT) model where the private party that builds the infrastructure operates it during the agreed period. However, the requirements to operate a B&R facility will differ greatly from what was needed to develop it, therefore participating companies need to expand their evaluation of the supporting capability ecosystem to include the presence of ancillary facilities and skills.

The presence of ancillary facilities and services enhances the competitiveness of the infrastructure (e.g. maritime port) as a one-stop centre for services. It is also critical for reliable operations as they provide the conditions governing the access to infrastructure and services as well as the quality of services provided.

Ancillary facilities and services can range from handling and storage facilities for ports to IT software for immigration customs (see Figure 6g for examples of ancillary services in a maritime port). Companies should expand the operational feasibility assessment to ensure these considerations are well addressed. To evaluate these facilities, companies need to understand the nature of the supply chain and the flow of the freight so as to assess whether the warehousing and logistics clusters locations are optimised, and subsequently how the suppliers and ancillary services can be co-located.

Figure 6g: Major activities and key ancillary services in a port



Source: The World Bank Group, 'Multiservice Infrastructure – Privatising Port Services', 2000[112], PwC analysis

Case study

The Tanzania-Zambia (Tazara) Railroad Project underscores the operational risks with the lack of supporting facilities

China had funded and completed the railway in 1975, two years ahead of schedule. However, Tanzania and Zambia struggled with the subsequent maintenance of the track. This was because even though China deployed more than 13,000 engineers and technical advisors to build the railway, local capacity for operation and maintenance was not developed. The vision of an agricultural belt could not take shape due to lack of investment in infrastructure or facilities along the track, thus curtailing the demand for the railroad. Three years into operation, breakdowns and flat demand reduced the number of daily trains from 17 to two.[113]

The lack of operation and maintenance prompted actions in 2012 when a survey was conducted and found serious infrastructural deterioration. The findings included radio frequencies that were not operational at night, power and electrical equipment which had exceeded their lifespan, and facilities in workshops that were outdated and no longer functional for a major repair cycle. This amounted to an accumulated loss of about US$170mn with an assets-liability ratio of 55%.[114] In a bid to turn around the struggling operations, China announced its takeover of the operations and management in May 2016.

Establish a portfolio fit

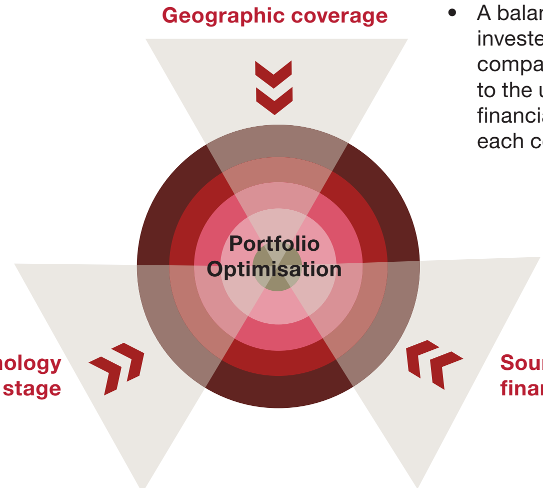
One way to remain agile in the uncertainty is to assess beyond a single project's return to consider how the B&R project opportunity complements the portfolio the company currently manages. A company which holds a portfolio of projects should not only view it in the B&R context, but also consider how this specific project fits into its internal portfolio. This allows the company to step back from project evaluation to assess how the B&R project complements and diversifies risks in its overall portfolio. Adoption of a portfolio management perspective builds flexibility to allow for agile course corrections, hence increasing the likelihood that overall enterprise objectives are met even if some projects fail.

Companies can consider three different ways of diversification in B&R projects – in geographic coverage, source of financing or technology (see Figure 6h). Firstly, for geographic coverage, companies are able to limit their risk exposure to political and economic changes by selecting the B&R projects that balance the firm's internal project geographical portfolio. If one of the company's assets is sited in a region that is vulnerable to adverse events, such as tsunami, earthquake or riots, it can then select projects in other regions to compensate and provide balance.

During the project, the company needs to obtain a consistent flow of funding to pay its workers and suppliers to avoid costly delay. As such, companies can mitigate the risk of funding interruptions by balancing the selection of projects with different funding sources, so as to have an exposure to different governance and lending practices. As the different lending institutions are made up of different country members, a diversified portfolio of sources of financing is one way to balance the spheres of influence from larger multilateral forces.

Thirdly, companies can also differentiate and diversify projects based on the stage of maturity of technology. Projects with new technology might open up a new market or develop a competitive advantage, however, they often involve new vendors, less accurate estimation of timeline and costs, or unexpected technical issues. A good mix of projects with familiar technology and new technology will ensure the company stays ahead in the industry's technology evolution while mitigating risks.

Figure 6h: Diversification in geographic coverage, source of financing or technology will help limit exposures to uncertainty and risks in Belt and Road projects



- A balanced portfolio of countries invested will provide the company with limited exposure to the unique operational, financial and political risks that each country faces

- Projects with new technology might open up a new market or develop a competitive advantage
- However it often brings about unexpected project management issues
- A good mix of projects with familiar technology and new technology will ensure company returns while mitigating risks

- A diversified portfolio of source of financing is also one way to balance the spheres of influence from larger multilateral dynamics

This has to be considered under a larger backdrop of where the company's strengths and assets are, and to what extent diversification is possible given the company's business nature

Source: PwC analysis

In conclusion, opportunities in the B&R initiative are far ranging and diverse, each holding its promises and risks. While B&R projects often need to progress under complex conditions beyond the company's control, the company can navigate the landscape with good evaluation of projects to ensure a return. Companies need to establish a robust business case amidst the larger context where political returns also play an important role. It is also vital for investors to evaluate whether there is a strong strategic partnership for policy development, whether multi-modal linkages are well addressed and whether there are supporting facilities to operate. Adoption of a portfolio management perspective builds flexibility to allow for agile course corrections, hence increasing the likelihood that overall enterprise objectives are met.

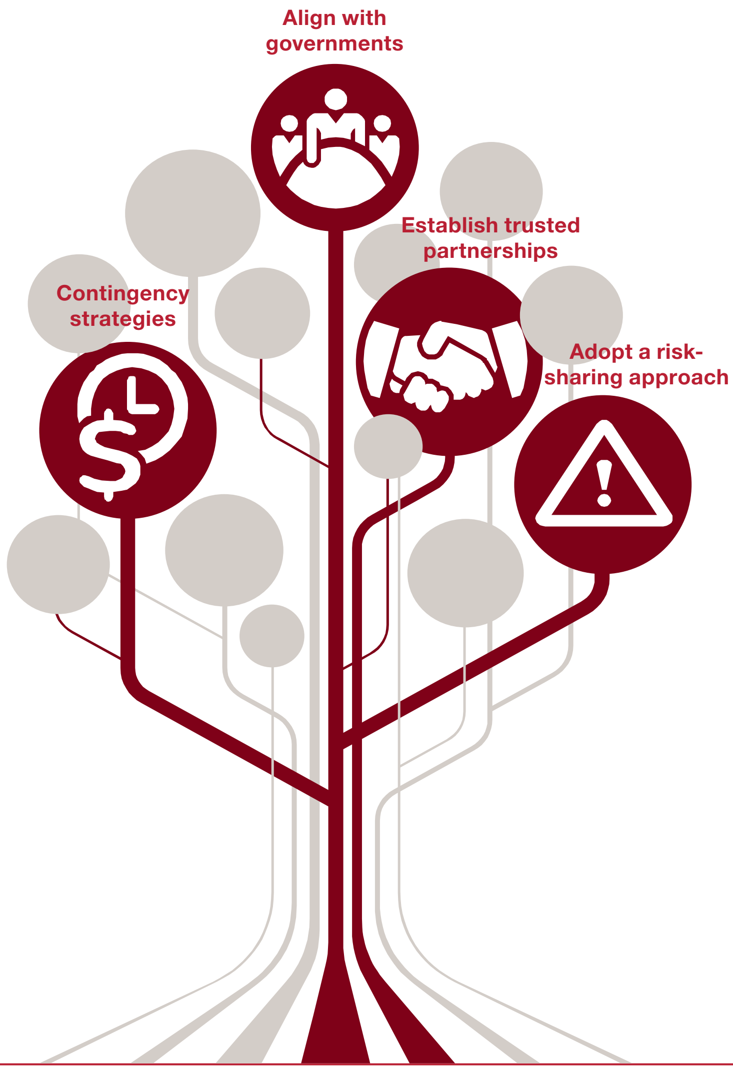
By conducting commercial viability assessment, reviewing the maturity of the infrastructure ecosystem and establishing a portfolio fit, companies can find clarity in the assessment and selection of projects to which they can contribute effectively.

Chapter 7: Positioning for success

In addition to identifying where the B&R projects are and understanding how to evaluate the associated risks, which differ from those related to a normal infrastructure development in a developing market, interested companies need to ensure that they also have the necessary strengths and assets to succeed with a B&R project.

In this section, we will be looking at the key strengths and assets that a company needs to develop in the long term to succeed in a B&R project, including contingency strategies, alignment with governments, trusted partnerships and a risk-sharing approach (see Figure 7a). However, there are unique elements to a B&R project that will be different from any other previous development an interested player may have been involved in.

Figure 7a: Companies need to develop contingency strategies, alignment with governments, trusted partnerships and a risk-sharing approach to position for success



Source: PwC analysis

Contingency strategies

The move to invest in B&R projects is in the right direction in the long term as economic momentum moves to the East. However, companies should build their stamina and plan for disruptions in the near term.

Often the greatest barriers companies face in developing markets which are moving along their economic journey are linked to transport costs and capacity (see Figure 7b). Therefore, investing in bridging these voids is a step in the right direction; however, success requires a flexible, tenacious approach to overcome the inevitable challenges that characterise B&R projects. Companies with a far-sighted strategy will want to be involved and be well positioned to benefit from the wider economy as economic momentum moves to the East. The key challenge is to build stamina for the long haul while managing the issues in the short term.

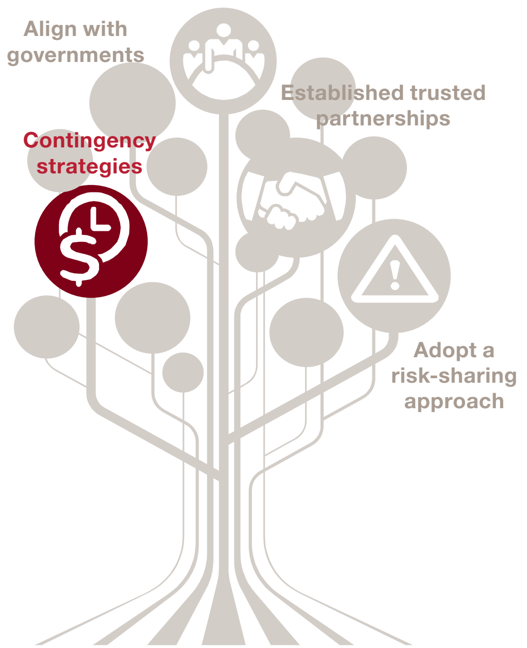
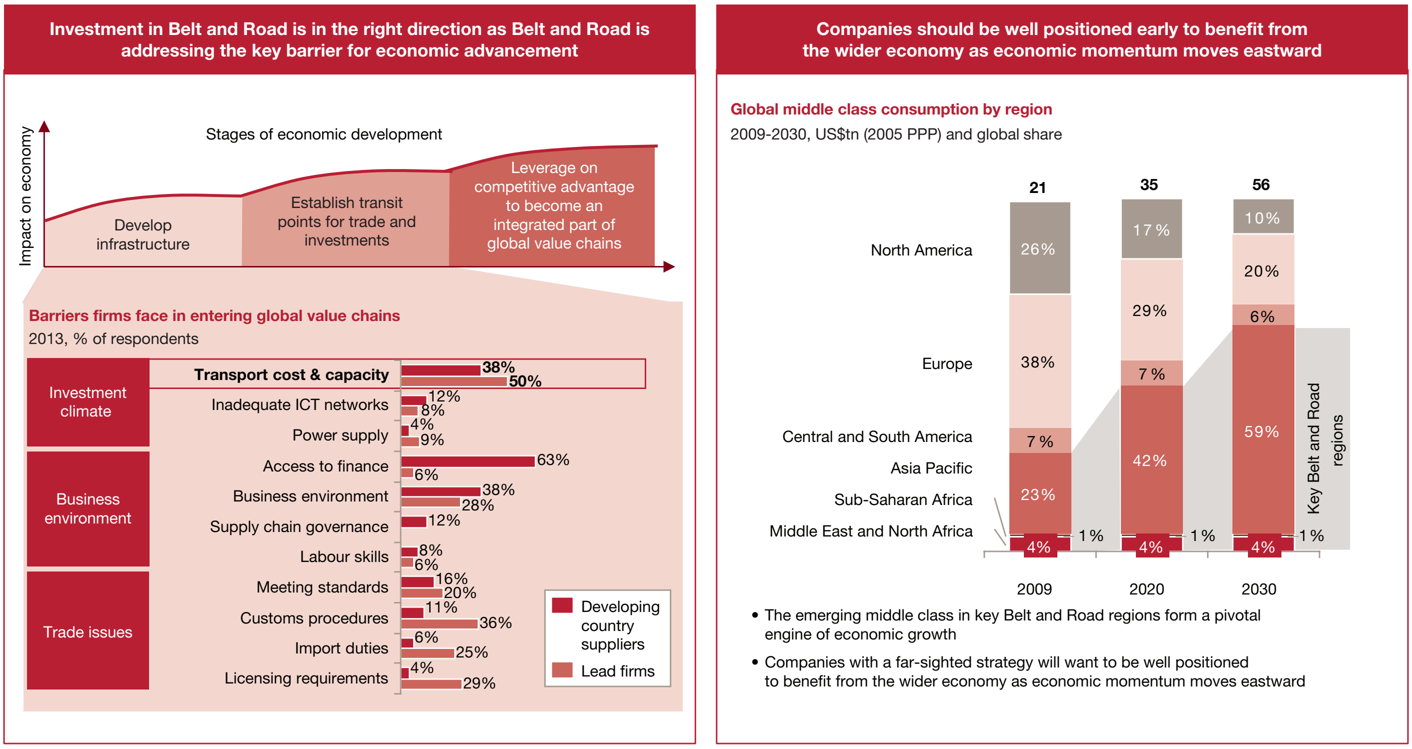


Figure 7b: The move to invest in the Belt and Road initiative is in the right direction in the long term as economic momentum moves to the East



Source: OECD-ATO Aid-for-Trade Questionnaire (2013)[115], Homi Kharas, The Brookings Institution[116], PwC analysis

Plan for disruptions

Given that B&R projects typically attract geopolitical attention and straddle multiple territories over a long period of time, one ought to plan for disruptions in advance. Sartaj Aziz, foreign affairs adviser to the Prime Minister of Pakistan, further affirmed the importance of contingency planning while chairing a session of the China–Pakistan Economic Corridor (CPEC) Summit in 2016: "It is important to carefully spell out the risks and challenges so that we can do better contingency planning."[117] In the course of contract negotiation, any potential unresolved issues or uncertainties that could not be addressed before contract finalisation should also be accounted for in contingency clauses. This includes laying out contingency plans in case of project delays or changes in regulatory features.

Plans should estimate the impact on return under different scenarios and assess the company's financial backing, or whether significant borrowing lines are available. By laying out a clear exit strategy at the outset, with the remaining liabilities and how staff will be affected in the event of separation clearly laid out, companies will provide the confidence for greater commitments amongst the stakeholders.

Understanding partner's financing arrangements

The second way to gain resilience against the short-term uncertainties is to have an understanding of your partner's financing arrangements in advance. This challenge is often compounded in B&R projects due to their multi-country nature. Understanding the partner's financing arrangements is often overlooked in the early stages, as the SOEs are eager to win the project bid as part of their internationalisation efforts. However, it always pays to be cautious around concessionary terms and any ambiguity should be negotiated up front. Companies can gain visibility with a comprehensive due diligence prior to sealing the agreement, especially with potential new partners in an unfamiliar country. One way is to engage independent advisors to conduct due diligence and qualify the partners. They need to look at whether the partner can secure financing options on attractive terms to overcome any hurdles during negotiation. It is also critical to seek visibility on the bank's position on recourse to sponsors and change of control.

Planning for disruptions and understanding your partner's financing in advance will provide you with the visibility of the range of possibilities that will allow you to take the best course of actions to wait out the short-term changes.

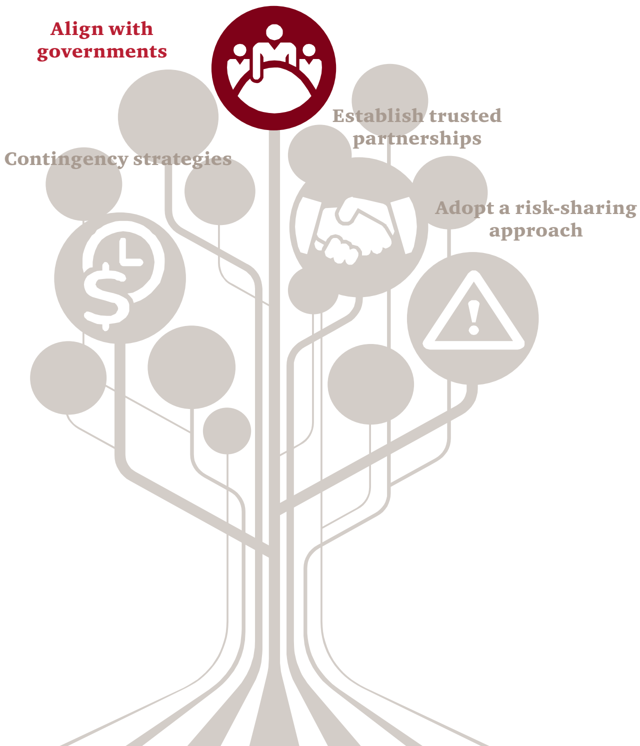
> ***"The capital for patience is critical to succeed in B&R activities. Companies should build their stamina and plan for disruption to wait out the changes in the near term. In the emerging economies, companies may see more frequent than anticipated changes in and adjustments to declared national priorities and policies, rotation of key decision makers in government bodies, changes in social mood and acceptance of foreign investment, periods of decreased activity and responsiveness by local counterparties and such. Over time companies will be able to learn the patterns of change and dynamics, causes and implications, and be able to develop a resilient strategy for success."***
>
> **Konstantin Yeliseyev**
> Eurasia Deals Leader
> Partner, PwC Kazakhstan

Align with governments

Government influence is widened in many B&R countries, where infrastructure development is critical and regulatory systems are developing. This is because some developing countries are living in or just stepping out of what have historically been command economies or closed markets with strong government control. In addition, the importance of government-led infrastructure projects is heightened in the early stages of economic development, thus amplifying the role and intervention of government in infrastructure projects.

A developing regulatory system limits private sector capital and expertise due to the lack of assurance that private sector partners will be treated fairly in any competitive process, that their intellectual property will be respected and that their investments are secure. Given the difficulty of hedging risks solely against traditional mechanisms such as contracts and insurance, the willingness to invest in goodwill and address political pressure points can create a competitive advantage for a company (see Figure 7d).

The road to economic development seldom happens in a straight line. While governments in emerging markets try to stabilise and grow the economy, the vote of confidence and extension of support from private companies carries greater leverage and supports companies in establishing themselves in a void where others have not entered. This embodies the spirit of the ancient Silk Road 2,000 years ago, which emphasised the exchange of values, kindness and goodwill across the countries. While the returns are not immediately visible, the investment of goodwill holds the potential for greater intangible gains that the company can enjoy in the long term. For example, Fortune Oil demonstrated that the extension of support during growth carried greater leverage and supported it in establishing itself in the new market (see following case study).



Case study

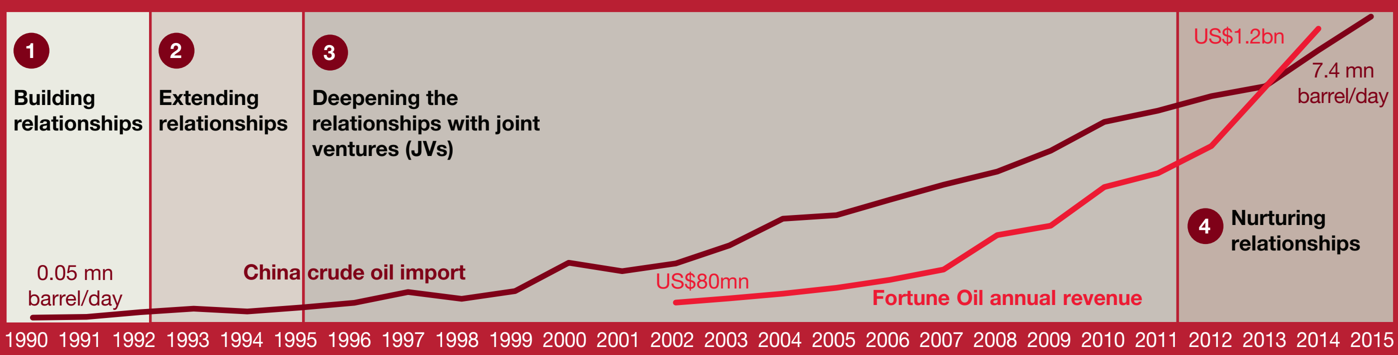
By investing in goodwill when China most needed it, Fortune Oil established key relationships and benefitted as the market develops

The London-listed Hong Kong-based Fortune Oil Limited focuses on investment and operations in the oil and gas supply and infrastructure projects in China. It has worked closely with large Chinese firms including China National Aviation Fuels (CNAF) to deliver energy infrastructure projects.

It started its operation in China in the early 1990s and was amongst the first foreign companies to invest in China's energy market. It helped China years ago when it was starting to import crude oil by bringing in the technology and expertise to fill the capability gap. From there, it developed strong relationships with key people in the trading sector and extended the relationships beyond oil trading. The extension of relationships anchored Fortune Oil in the subsequent set up of the Maoming crude oil terminal, and subsequently other adjacent sectors such as jet fuel, diesel and natural gas. As publicly quoted by Michael Jones, Technical and Development Director or Fortune Oil Limited, 'One thing I've learnt with Fortune is that while the company is by no means as big as BP, it is able to do things because it has the relationships. Sometimes, it's not about the product, not about the price as without the senior contacts, we couldn't get into the projects in China.'

China has since become the world's second largest importer of crude oil, while the Maoming terminal delivers 4% of China's crude oil imports. Fortune Oil has also developed into one of the few trusted foreign-owned companies in China and is well positioned to benefit from China's crude oil import growth.

Figure 7c: The growth of Fortune Oil in tandem with China's oil export market



Note: Fortune Oil revenue before 2002 is not publicly available

1 Building relationships
- Fortune Oil brought in the much-needed technology and expertise, an investment of goodwill when the Chinese were starting to import crude oil
- Key relationships with crude oil SOEs are established

2 Extending relationships
- Fortune Oil extended relationships to the trading sector
- Set up a terminal supplying crude oil to Maoming

3 Deepening relationships
- Built on credentials and network to diversify from crude oil to other energy products (jet fuel, diesel, natural gas)
- Set up JVs with large Chinese firms: China National Aviation Fuel, Tianjin Gas

4 Nurturing relationships
- China – world's second largest importer
- Maoming terminal – delivers 4% of China's crude oil imports
- Fortune Oil is one of the few foreign-owned companies in China
- Well positioned to benefit from China crude oil import growth

Source: Financial Times[118], Organisation of the Petroleum Exporting Countries (OPEC) database[119], Company website, PwC Analysis

Besides investing in goodwill, companies should also be mindful to address political pressure points. By identifying and engaging the local source of influences and appealing to host countries' national interests, companies can proactively frame public debate and enhance public acceptance, which puts less pressure on the government to make any decisions that divert investor returns. Having said that, companies need to be cognisant of the limitations of this approach, as the intention to create a win-win situation may sometimes be perceived as a specific political inclination, which might cause unnecessary hostility from another political party.

Considering the role and influence of government in infrastructure projects in the developing countries, the investment in goodwill and alignment with political pressure points will create a strong foundation not only for the specific project at hand, but also for future business growth in the country (see Figure 7d).

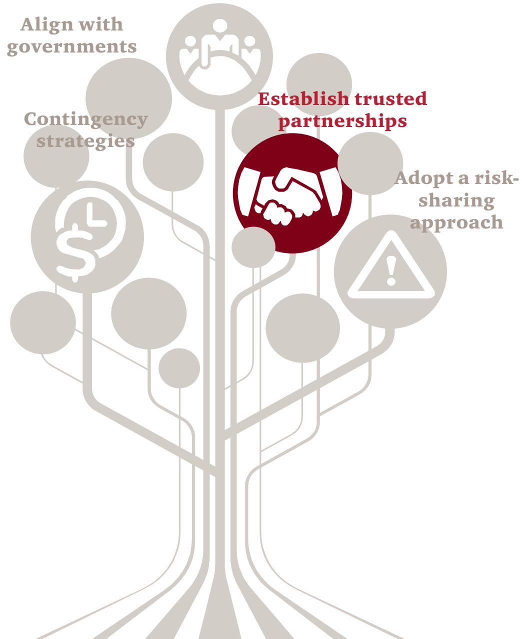
Figure 7d: The willingness to invest in goodwill and address political pressure points can create a competitive advantage

Given the difficulty of heading risks solely against traditional mechanisms such as contracts and insurance, companies should consider

Investing in goodwill	• While governments in emerging markets try to stabilise and grow the economy, the vote of confidence and extension of support from private companies carries greater leverage and establishes itself in a void where others have not entered • While the returns are not immediately visible, it holds the potential for greater intangible gains that the company can enjoy in the long term
Addressing political pressure points	• Identify and engage the local source of influences and appeal to the host country's national interests and frame public debate • This also helps enhance public acceptance, which puts less pressure on the government to make any decisions that divert investor returns

Source: PwC analysis

Establish trusted partnerships



The ability to secure trusted local project partners, who have a trusted and credible history of working with local government, has proven itself to be another key pillar of success in B&R projects. This is especially critical not only for foreign companies participating in the B&R initiative, but also for the Chinese companies who are trying to '走出去' (zou chu qu), a Chinese slogan to encourage Chinese companies to internationalise.

Companies with precedence working with the local government will understand the sequence of events and key actors in the processes to facilitate project progress. They will also help in the navigation around unspoken sensitivities in the ecosystem. As most infrastructure projects are susceptible to delays and unexpected disruptions, a demonstration of corporate resilience will provide assurance that the partners will be able to withstand challenges and be there in the long haul. To do that, companies should look for partners with a high threshold towards uncertainty and risk, and a shared mindset beyond individual risk to focus on overall project goal.

The approach to working together is just as critical as choosing the right partner. This has to come with in-depth planning and due diligence, balanced with openness and flexibility in working together. Thorough planning and due diligence, will help them to decide the most efficient way to allocate resources and risks, and therefore to have more realistic expectations on potential risks and returns. Planning should also address the incentives and accountability for delay recovery across key parties, so as to instill a mindset of sharing pains and gains.

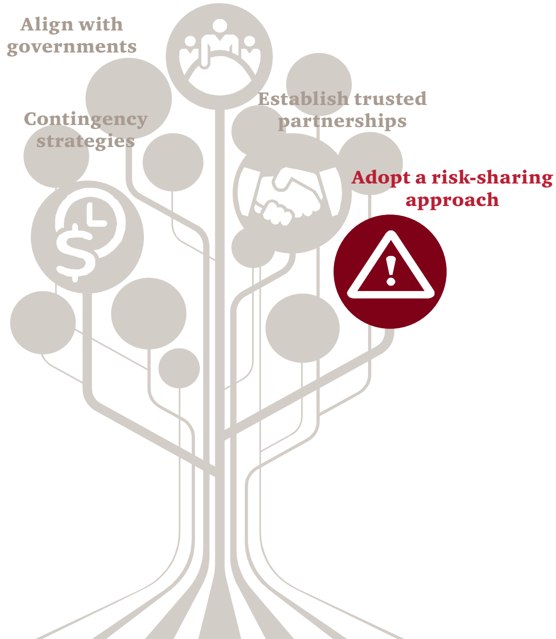
Companies might encounter a host of different situations in B&R countries. As such, they need to adopt a flexible approach and pioneer mutually beneficial ways of working together, such as introducing new forms of commercial agreements. The ability to look beyond each specific interest, and focus on realising the real added value from the cooperation will extend the mileage of the partnership.

In conclusion, the importance of choosing the right local partner and developing the right approach to working together cannot be overstated. A partner with experience of working with the local government and which has proven itself in crises will show itself to be a worthy one when disruptions occur. With in-depth planning and due diligence, balanced with openness and flexibility in working together, companies can work together successfully to realise the potential.[120]

> ***"Companies with precedence working with the local government will understand the sequence of events and key actors in the processes to facilitate project progress. They will also help in the navigation around unspoken sensitivities in the ecosystem."***
>
> **Michael Adams**
> Director
> PwC Kazakhstan

"The ability to balance in-depth planning with openness and flexibility will be especially important in B&R projects, where new partnerships are often forged and the team tries to configure the best way to work together to realise the real value add from the cooperation."

Devin Chan
Capital Projects and Infrastructure Director, PwC Singapore



Adopt a risk-sharing approach

Risk allocation is critical in large infrastructure projects, where risks are ideally assigned to the party which is best able to manage them. Failure to allocate risk equitably often leads to cost overrun, significant delays, and in some circumstances, un-bankable projects. Therefore, infrastructure projects typically consider the levers to address various risks, identify the party that has control over the levers and assign the party to manage them.

However, this may not always be appropriate, especially in B&R projects where there could be more stakeholders, and they exercise larger influence on the occurrence of the risk. Sometimes the economic pressures push risk down the value chain to those who will accept it, often the ones with the least bargaining power. This could potentially lead to the risk-bearing party changing orders or creating contract claims in a bid to manage a risk that is beyond them. If the risk is shifted to one party to bear, the complications will eventually lead to project delays and cost overruns that will impact all the stakeholders.

Alternatively, companies can consider adopting a risk-sharing approach that builds trust amongst stakeholders and eventually reduces overall cost. This provides an alternative way to view risks and promotes a collaborative means to address challenges that will inevitably occur (see Figure 7e).

Figure 7e: Companies can consider a risk-sharing approach in a few ways

Examples of risk-sharing approaches

01 Project owners to assume risk by waiving the need for performance bond, based on positive bankability of the contractor

02 Project owners to carry the cost of some equipment on their books, therefore reducing risk premiums and complex contingencies

03 Consider a revenue-sharing model where the government provides more support when it is low, and has a greater share when the revenue is higher

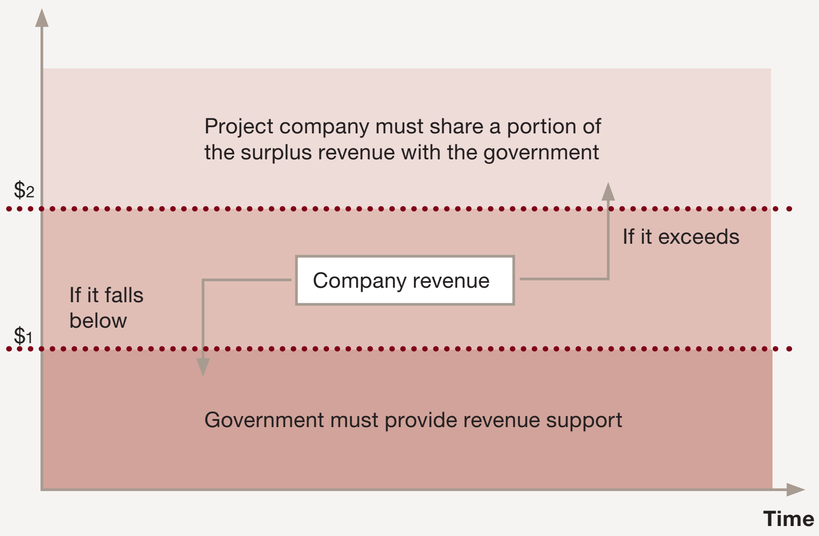
Source: Infrastructure Intelligence[121], Black & Veatch[122], PwC

Project owners can decide to assume risk based on the positive bankability of the contractor, for example, by waiving the need for a performance bond. They can also consider carrying the cost of some equipment on their books, therefore reducing risk premiums and complex contingencies. Another way is to design a revenue-sharing model where the government provides more support when it is low, and has a greater share when the revenue is higher (see Figure 7f).

A strong risk-sharing culture will build trust amongst stakeholders, ultimately lowering cost for all stakeholders involved. It is not an easy task considering the number of stakeholders and sub-contractors in the system, many of which will be working together for the first time. Having said that, it takes a first move to build a strong risk culture for the industry in the long term.

In summary, companies need to build the strengths and assets in the long term to successfully gain from the B&R initiative. Whilst the B&R brings together companies to contribute with their best capabilities such as technology and international experience to build projects, there are some assets that companies need to develop in the long term to manage projects and achieve positive returns. With the development of contingency strategies, alignment with governments, trusted partnerships and a risk-sharing approach, companies are well positioned to tap into the B&R opportunities.

Figure 7f : Example of passenger revenue risk sharing in a rail operation



The revenue-sharing mechanism

- The project company and the government enter into an agreement to share the risks
- Two thresholds are fixed by the parties, one below which the government will financially support the company, the other over which the company must share its surplus revenue

Source: Infrastructure Intelligence[123], Black & Veatch[124], PwC analysis

Chapter 8: Leveraging international platforms

The role of international platforms in the Belt and Road initiative

Besides adopting a risk-sharing approach, planning contingency strategies, and strengthening capabilities with key partnerships and government relations, foreign companies can leverage existing international platforms to further position for success. For one, such international platforms help to connect organisations with similar commercial interests, and to facilitate business collaborations and complementary partnerships. Second, they are a resource to gather more knowledge, especially in the case of the B&R initiative, for which portals have been set up to offer more information.

Platforms have been set up by various government bodies and business associations to cater specifically to B&R activities, such as those in Hong Kong and Singapore. In these cities, the platforms are run by government bodies, business associations and non-profit public organisations. In Hong Kong, platforms are offered by the Hong Kong Trade Development Council (HKTDC), a statutory body, and the Federation of Hong Kong Industries (FHKI), a business association. In Singapore, they are organised by government entity International Enterprise (IE) Singapore, and the Singapore Business Federation (SBF), a business association. In United Arab Emirates, the Dubai Chamber of Commerce and Industry, a non-profit public organisation, facilitates B&R partnerships, while the Dubai International Financial Centre (DIFC), a government administered financial hub, provides investors with expertise, legal and regulatory certainty. From the United Kingdom, its business association, the China-Britain Business Council (CBBC), organises events to encourage companies to take up opportunities stemming from the B&R initiative.

Local business communities are well represented at these platforms, as are many global companies, and they play a key role in connecting players across value chains. Their wide international networks often comprise international chambers of commerce, professional services companies and media companies through to infrastructure management consultancies, and private investors and financiers, including venture capital firms and private equity funds, among others. The network of professional services available via these bodies work to provide services from deal making, due diligence and tax structuring to post-deal integration and management.

With a global network of international businesses and professionals, these platforms are meeting points for companies with similar commercial interests. As such, foreign companies that want to establish contacts and look for partners to collaborate in B&R opportunities can leverage these platforms to connect with other global organisations, private investors and local companies from the B&R countries, or network with Chinese enterprises.

Especially with the B&R initiative being led by the Chinese government, international platforms can further play the role of bringing together public and private sector stakeholders 'with a view to facilitating more efficient and sustainable investment flows into the B&R countries.'[125]

Perhaps more importantly, these platforms are free of government influence and are purely driven by commercial interests and shaped by market demand. Given that the B&R initiative is a strongly China-centric plan, international platforms play a crucial role which is uninfluenced by political interests. In return, this undivided focus then attracts more international participants.

Hong Kong and Singapore as attractive international platforms

Hong Kong and Singapore have positioned themselves as regional hubs for B&R activities. In fact, both countries are already very actively involved in facilitating China's B&R plans.

Both cities have also traditionally been recognised as excellent gateways for international businesses wanting to do business in their respective regions. This also means that they would have much experience to share in connecting and facilitating a wide established network, having played the role of an international platform and regional hub for many years.

Established international networks of business communities are further key strengths of both Singapore and Hong Kong, in addition to being highly business-friendly, free trade, economically open, low tax regimes, with an absence of foreign exchange controls, a level playing field, a diversified talent pool, world-class infrastructure, and sound and independent legal systems.

They are both strong financial services hubs – with Hong Kong being stronger in RMB currencies while Singapore has the largest foreign exchange centre in Asia Pacific.[126] Also, the Hong Kong Monetary Authority (HKMA) has set up an Infrastructure Financing Facilitation Office (IFFO) to facilitate infrastructure investments and their financing.[127] Singapore already manages about 60% of infrastructure project finance transactions in Southeast Asia.[128]

Despite sharing many of the same strengths, Hong Kong and Singapore also each bear unique propositions as B&R activity hubs.

Figure 8a: Different strengths of Hong Kong and Singapore as international facilitating platforms for Belt and Road activities

- Established international networks of global organisations and Chinese companies
- Provides a trade-friendly and economically-open business environment

Hong Kong

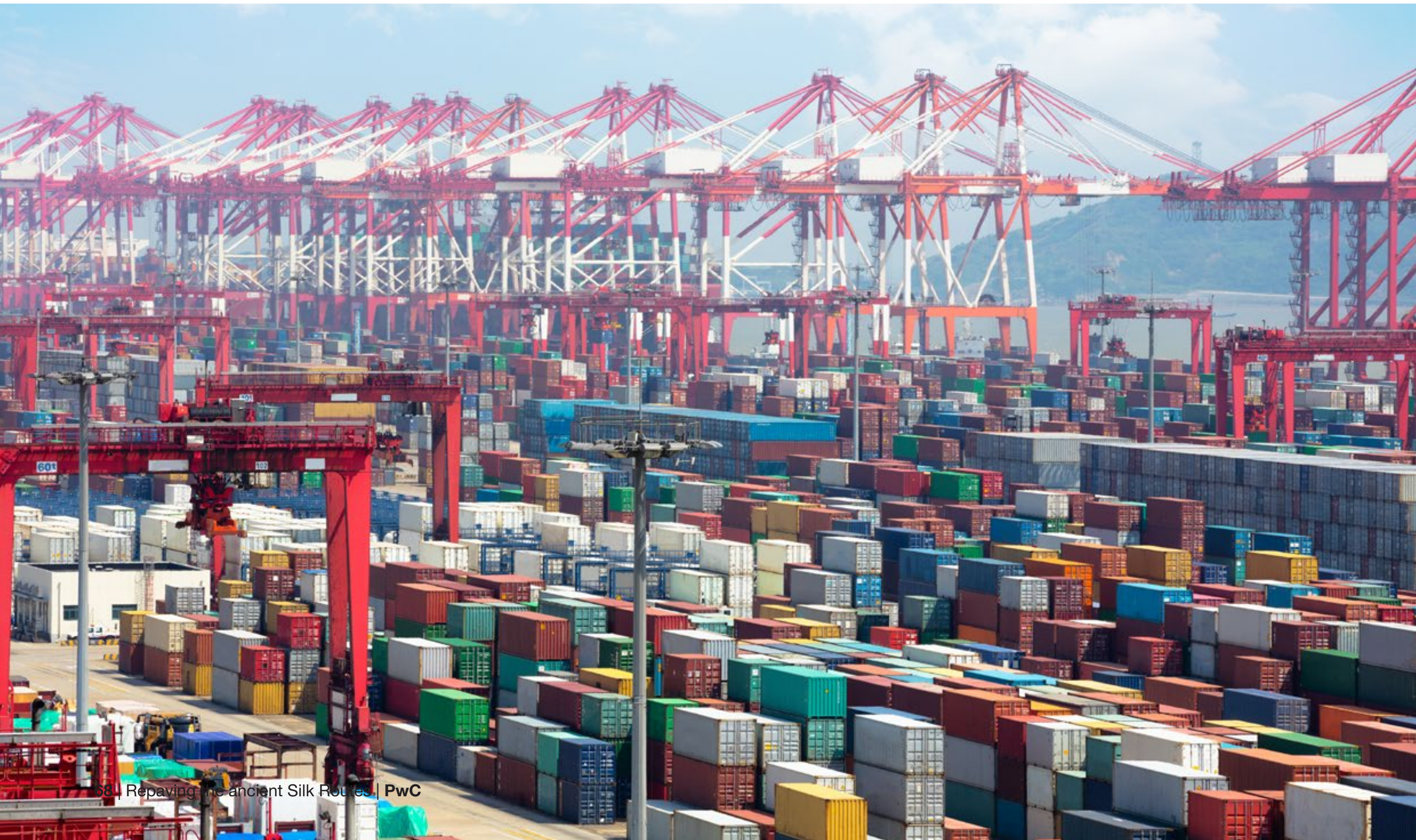
- Established as gateway into mainland China due to proximity
- Springboard for China's overseas investments
- Strong financial hub with high volumes of RMB
- Global offshore RMB trade settlement, financing and asset management service centres for B&R countries
- Legal and arbitration and professional services and consultancy services
- Access to international information sources e.g. Google
- Subject matter expertise, provides services such as infrastructure management

Belt & Road

Singapore

- Strategically located as gateway into maritime belt route in Southeast Asia region e.g. Chongqing Connectivity Initiative
- Springboard for Chinese investments into Southeast Asia
- High involvement in China-led overseas activities and key investor in China and B&R projects
- Strong financial hub especially in foreign exchange; key financing hub for infrastructure transactions in Southeast Asia
- Hosts a growing ecosystem of infrastructure players across supply chain; engages in knowledge and expertise exchange with China e.g. in urban landscaping

Source: expert interviews, PwC analysis



Hong Kong

Hong Kong's proximity to mainland China has supported its role as a gateway with access to mainland cities for many global businesses. In the same way it has also been serving as a springboard for Chinese outbound investments and expansion into international markets.

China and Hong Kong have historically had close economic and investment ties, and are bound together by the Mainland and Hong Kong Closer Economic Partnership Arrangement which has boosted trade in the industrial, energy, technology, infrastructure and tourism sectors. According to the HKTDC, about 60% of outbound investments were directed to, or channelled through, Hong Kong. Hence the largest source of foreign direct investment into China in 2015 came from Hong Kong, to the value of US$1.24tn, or 48% of total investment.[129]

Specifically, the key offerings of Hong Kong include a few areas. First, it provides services in global offshore RMB trade settlement, financing and asset management service centres which 'connect regions along the B&R' with experience in assisting Chinese mainland enterprises, project sponsors, lenders and private equity funds in structuring and financing public-private partnership projects such as ports, highways and power plants.[130]

Another area is in legal services including arbitration centres and platforms. Also, Hong Kong offers access to information via access to Google Search and channels that may be restricted in China. In some cases, its organisations such as HKTDC have connections to Chinese business stakeholders based outside China. The presence of professional service firms that provide accounting, consulting and tax advisory services is also vital to any B&R project. To date, the HKTDC has connected over 6,100 mainland investors, more than 5,700 overseas project owners and Hong Kong service professionals, and organised close to 4,000 business matching meetings.

Another lesser-known involvement of Hong Kong in the B&R initiative is its expertise in infrastructure management. For example, along the Eurasian Land Bridge economic corridor, a Hong Kong company that originated in Canada was involved in traffic facilitation and logistics management for part of the China–Europe transnational train.

Hong Kong currently plays a key role in B&R activities, which is somewhat overshadowed by other major infrastructure projects in faraway developing countries along the B&R routes. It is almost playing a 'subject matter expertise' role in the B&R, and caters to more 'mature' B&R activities.

> *"HKTDC is probably one of the most active players in B&R other than Beijing. It held a very successful B&R Global Summit last year and is building up a very comprehensive portal, consultation and network system for those who are interested through Hong Kong."*
>
> **Professor Daniel Cheng**
> Chairman
> Federation of Hong Kong Industries

> *"Hong Kong's role is like a superconnector. Its contribution is imbedded in almost every key B&R project, though not necessarily visible as a Hong Kong venture."*
>
> **Nicholas Kwan**
> Director of Research
> Hong Kong Trade Development Council (HKTDC)

Singapore

With respect to the B&R initiative, Singapore plays a pivotal role as gateway to the Southeast Asia region, which is a key part of the Maritime Belt route. The route connects southern China to Southeast Asia, then connects by sea to South Asia, the Middle East and North Africa.

In addition to being located in the heart of Southeast Asia, Singapore and its corporate enterprises have also always been highly involved in many Chinese-led activities overseas. The country has also been one of China's largest investors, and had invested up to US$5.8bn in over 700 projects by 2014.[131] On the other hand, it is also one of the top overseas investment destinations for Chinese companies.

Singapore possesses an outstanding business environment that enables it to facilitate investments into Southeast Asia, into which many B&R investments are flowing. As such the Singapore government is positioning the city as an infrastructure financing hub for the region, where a critical mass of international banks is based with project financing capabilities. An estimated 60% of ASEAN project finance transactions are arranged by Singapore-based banks.[132]

Complementing its role as financing hub, Singapore hosts a full suite and increasingly growing ecosystem of players across the infrastructure supply chain – from project developers and EPC firms to professional services providers and development finance institutions. For these Singapore-based businesses, the B&R initiative also presents collaboration opportunities with Chinese companies for infrastructure, logistics, and other projects in the region.

In fact, Singapore itself is an investor in the B&R initiative, having committed about S$90bn (roughly US$64.5bn) worth of financing services for B&R projects across the region, signing off on an MOU with some of the largest Chinese banks last year.[133]

As part of the B&R initiative, Singapore and China have launched a joint project, Chongqing Connectivity Initiative (CCI), which aims to 'catalyse the development' of Chongqing in Western China, as well as in Singapore.[134] The initiative focuses on four areas for bilateral collaboration including finance, aviation, transport and logistics, and info-communications technology. In the financial sector, more than US$6bn-worth of deals were concluded in 2016.
In the aviation sector, Changi Airport will work with Chinese authorities in the development and operations of the new Chongqing Jiang Bei Airport. The plan also includes building a transportation and logistics 'multi-nodal' hub in Chongqing.[135]

Knowledge and expertise exchange is another key area of collaboration in the B&R initiative. Being renowned worldwide as a clean and green city that has well-integrated urban skyscrapers and highways with greenery and nature, Singapore can work with China to exchange urban planning expertise, complementing China's strengths in construction and financing.

Evidently, Singapore and Hong Kong are well positioned to facilitate and help companies navigate through the B&R activities, also offering ideal business environments to support business transactions and having set up entities specifically catered to B&R activities. This could greatly support a foreign company in its risk mitigation strategies and to better position itself for success in B&R activities.

> ***"Leveraging its advantageous location at the confluence of major sea and air routes, as well as its role as the second largest offshore yuan hub outside Greater China, Singapore is committed to playing an active role in China's One Belt, One Road initiative."***
>
> **S.S. Teo**
> Chairman
> Singapore Business Federation

> ***"China's One Belt, One Road initiative will improve connectivity and catalyse infrastructure projects along the Belt and Road countries. As the regional trade, financing and infrastructure hub, Singapore has the know-how and networks with China and Southeast Asia to effectively collaborate with Chinese companies on One Belt, One Road projects. IE Singapore's partnerships with financial institutions are strategic in strengthening the critical financing required to bring more projects to fruition."***
>
> **Ho Chee Hin**
> Group Director
> China Group, IE Singapore

Conclusion

The ancient silk routes acted as arteries of trade and the conduits of knowledge between East and West. In reviving and expanding these routes, the B&R initiative has the potential not only to develop much-needed infrastructure and promote international trade, but also to facilitate the economic journey of more than 60 countries which lie along the six different economic corridors. The tangible and intangible ecosystems within each infrastructure programme offer the potential to impact the lives of over two-thirds of the world's population by creating thousands of new jobs, whilst simultaneously enhancing the skilling and the capability of local enterprises.

However, whilst driven by China, the B&R initiative's success lies in the hands of multiple stakeholders, and foreign companies are a vitally important group as they can contribute with financing, skills and capabilities to support China and the countries along the route to realise the full potential of the B&R dream. Foreign companies are already accepting offers to get involved, such as BP, to construct and operate the Rumaila oilfield in southern Iraq, and Caterpillar, which supplied machinery, training and maintenance services to China Communications Construction Company (CCCC) in the construction of the Zhrobin–Bobruisk expressway in Belarus.

Nevertheless, as we have seen, projects related to the B&R are very different compared to regular infrastructure projects in growth markets, due to their trans-national nature and the subsequent geopolitical, economic and social environment challenges that arise. Therefore foreign companies need to identify and evaluate the risks which are specifically associated with a B&R project and make plans to mitigate these risks. These risks will range from geopolitical, due to changes in political regimes during a project's lifespan, to funding, when host countries are unable to meet the costs of development, and operational, as many local partners will lack the expertise and experience of delivering complex infrastructure projects in these growth markets.

Whilst these risks might exist they can be managed in line with evaluating which project to commit to. Like any commercial venture, a sound business case is essential, but it needs to be evaluated in the context of the maturity of the infrastructure ecosystem which will support the specific project. As we saw with the Mattala Rajapaksa airport, even if the development itself is financially sound, it will fail as an investment unless it has the supporting ecosystem to supply and serve it. And even then the development ought to complement the company's existing infrastructure portfolio and overall growth objectives to ensure that it is built into the company growth strategy.

Acknowledging that B&R projects are different, companies can enhance their chances of success by taking some proactive actions such as establishing contingency plans to manage short-term disruptions and plan for lengthy project lifespans whilst also building strong and respected relationships with local authorities in order to effectively navigate the political and local bureaucratic scene.

The B&R initiative is a vast and ambitious programme, which foreign companies ought not to ignore as a purely Asian affair, but instead embrace. It is possibly the largest trans-continental infrastructure programme the world has ever known and it is only just beginning![136]

PwC | Repaving the ancient Silk Routes | 72

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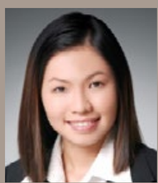

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