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China's Belt & Road Initiative: the impact on commercial insurance in participating regions



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Foreword

The “Belt & Road Initiative” or “One Belt One Road” as articulated by Chinese President Xi, will be a key economic driver for China over the next decade. The Initiative, first announced in 2013, has already seen significant progress, with projects ranging from the building of new rail connections between China and Laos and Thailand, and the construction of power plants in Pakistan.

These examples reflect the regional and global reach of the Belt & Road Initiative. The Initiative covers some 65 countries accounting for two-third of the world’s population and one-third of global economic output. It will foster stronger cooperation among participating countries in terms of economic activities, and in social and cultural aspects. The economies along the Belt & Road routes will benefit from increased investment, job creation and improved geopolitical relationships.

Many Belt & Road projects are infrastructure construction, in particular transport and energy facilities. Investors and constructors face a myriad of risks which could lead to delays in project completion and/or cost overruns. We believe insurers and reinsurers can play a strong supporting role for Belt & Road projects with the provision of best-practice and cost efficient risk management solutions.

This report looks at the different regions along the Belt & Road routes and assesses the overall insurance opportunity presented by countries, other than China, taking part in the Initiative. It is a follow-up to an earlier published report which addressed the long-term opportunity arising out of Belt & Road for commercial insurers in China specifically.¹ We hope that by sharing our knowledge, we can stimulate more discussion to chart a course for the insurance and reinsurance sectors to better support this ambitious initiative.



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¹ See *China’s Belt & Road Initiative, and the impact on commercial insurance*, October 2016, Swiss Re.

Executive summary

B&R will support economic activity across all regions involved in the Initiative ...

The China-led Belt & Road (B&R) Initiative is intended to strengthen integration among the countries of Asia, the Middle East, Africa and Europe via land and maritime trade routes. The Initiative will support economic growth in China and the other countries taking part in many ways, including investments in infrastructure, increased trade, financial services sector growth and new jobs creation. B&R will also facilitate the relocation of labour-intensive manufacturing processes from China to other lower-cost economies.

... and generate commercial insurance premiums of USD 28 billion in countries outside China in the years to 2030.

The Initiative involves huge investments to improve connectivity and free-flow of goods and services through the countries along the B&R routes, and also spending in agriculture and cultural exchange programmes among other projects. Insurers will benefit too: this report estimates that B&R-associated projects in countries outside of China will generate demand for commercial insurance translating into accumulated premiums of USD 28 billion by the year 2030.² This projection reflects the very huge scale of economic activity that B&R is expected to generate.

There will be huge investments in B&R-related projects, mainly in transport infrastructure and the energy sector.

Total investments in B&R countries outside China are expected to amount to around USD 5 trillion by 2030. There will be massive investments in transport infrastructure in particular, with the building of modern highways, ports and rail networks to facilitate trade taking up close to one third of those investments. The energy sector is expected to attract the second highest level of investments (estimated USD 1.2 trillion), largely due to China's need to secure its long-term energy supplies.

However, the multinational nature of B&R also presents a wide range of risks ...

The construction, trade and other activities triggered by B&R will present many business opportunities for commercial enterprises and contractors. However, the multinational nature of the Initiative and the heterogeneity of the countries taking part expose stakeholders in B&R projects, such as foreign investors, contractors and other agencies, to a multitude of risks. These include changes in the political landscape of host countries and weaknesses in local governance arrangements. Corruption, labour disputes, occupational hazards and environmental liability are other examples of possible risks.

... which investors and contractors in B&R projects will want to mitigate by, among other initiatives, buying insurance.

Stakeholders in B&R projects will need protection against these and any other operational exposures, and demand for commercial insurance will only increase as more construction and other projects take shape. The involvement of global insurers with expertise in managing multi-country exposures and alternative risk transfer capabilities will be a critical part of stakeholders' risk management strategies. Big-ticket investments and the exposure of many B&R countries to natural catastrophe risk will also require sufficient reinsurance capacity and technical expertise.

Engineering and marine insurance will likely benefit most from B&R ...

The engineering and marine lines of insurance business are expected to benefit most from B&R. Demand for one-off engineering and marine cover from stakeholders in B&R projects will come during the construction phase of projects, and there will also be demand for public liability, product liability and employer's liability insurance. In total, the construction phase of projects in B&R countries outside China will generate an estimated USD 14 billion of additional premiums for commercial insurers by the year 2030.

... and there will also be significant demand for property insurance once individual projects are up and running.

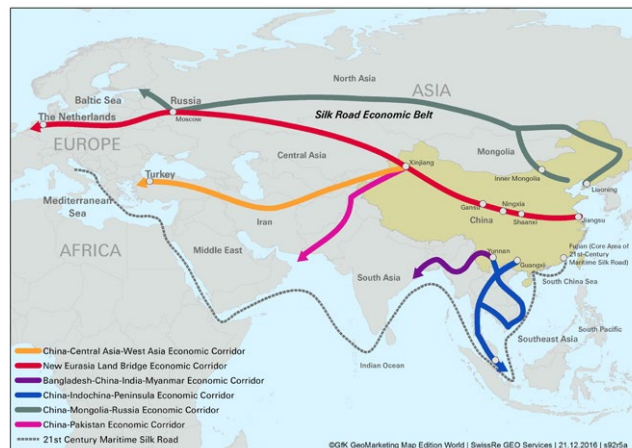
After construction, assets/facilities in operation will generate around another USD 14 billion in premiums, mostly for property insurers. More than half of this will be insurance for power plants and other energy projects, where fire and explosions are major risks, as is damage due to earthquakes, floods and subsidence. There will also be demand for environmental liability insurance to protect against the costs of dealing with pollution accidents at production facilities.

² In a previously published report, Swiss Re estimates that B&R will generate commercial insurance premiums of USD 23 billion for Chinese insurers specifically in the years to 2030. See *China's Belt & Road Initiative, and the impact on commercial insurance*, Swiss Re, October 2016.

Building regional integration

The B&R Initiative is intended to improve connectivity and strengthen economic cooperation among countries in Asia, the Middle East, Africa and Europe.

Figure 1
The Silk Road Economic Belt and 21st Century Maritime Silk Road



Source: Swiss Re GEO Services, Swiss Re Institute.

The Silk Road Economic Belt is an overland network of rail and road.

The 21st Century Maritime Silk Road is a sea route running west from China's east coast to Europe.

The Silk Road Economic Belt is a land route connecting China with B&R markets through a network of rail, roads and airports, a modern-day version of the ancient Silk Road trade route connecting China to the Mediterranean Sea. The Belt of B&R will comprise six international economic corridors linking China with the Mediterranean coast, the Persian Gulf, the Middle East, South Asia and South-East Asia.³

The 21st Century Maritime Silk Road – a sea route – runs west from China's east coast to Europe through the South China Sea and the Indian Ocean, reaching the Mediterranean Sea. To the east it will extend into the South Pacific. The aim is to build efficient transport conduits between major ports in various B&R countries that will more effectively support supply chains and lower transportation costs.

³ The six international economic corridors of the Silk Road Economic Belt are: (1) the China-Mongolia-Russia Economic Corridor targeting cross-national cooperation among China, Russia and Mongolia for improved rail and road connectivity, and to make customs clearance procedures more efficient; (2) the New Eurasia Land Bridge Economic Corridor connects China with Europe through central and western Asia. Currently a rail route runs from Lianyungang in China's Jiangsu province through Alashankou in Xinjiang, all the way to Rotterdam in the Netherlands. To extend the line to more coastal ports in Europe, a new Land Bridge passing through Kazakhstan, Russia, Belarus and Poland is planned; (3) the China-Central Asia-West Asia Economic Corridor, linking Xinjiang with Mediterranean coast and the Arabian Peninsula through a rail network across central and western Asia. The corridor will connect Xinjiang with Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan in Central Asia, and go on to Iran and Turkey; (4) the China-Pakistan Economic Corridor connects Xinjiang to Pakistan's Gwadar Port. China and Pakistan have mapped out a long-term cooperation plan to build roads, railways, oil and natural gas pipelines, and an optic fibre network along the corridor; (5) the China-Indochina Peninsula Economic Corridor. The intention is to build an extensive network of infrastructure to strengthen cooperation between China and the five countries in the Indochina Peninsula. At present, nine cross-border roads are under construction, and some projects have already been completed; and (6) the Bangladesh-China-India-Myanmar Economic Corridor for closer cooperation among the four named countries in areas such as transport infrastructure, investment and cultural exchange.

Building regional integration

China's economy has been slowing, and new drivers of growth are needed.

The B&R Initiative will support China's economic growth in many ways.

B&R spans a host of countries with economic, socio-political, cultural and religious diversity.

Successfully executed, B&R will facilitate economic development in countries along the routes.

B&R will generate an estimated additional USD 28 billion in commercial insurance premiums by 2030.

Central Asia is a key B&R region due to its geostrategic location and rich natural resources. Russia could also benefit.

Drivers of China's regional integration strategy

The growth model that has underpinned China's strong economic performance since the 1970s, one that is based on low valued-added exports and investment in fixed assets, is running out of steam. In 2016, the country's GDP growth dipped to a 25-year low rate of 6.7%, amid rising corporate debts and accelerating capital outflows. Maintaining the high growth rates of previous years will be challenging, and new and strong sources of growth are needed for the future.

The B&R Initiative will improve connectivity among participating countries including China, thereby stimulating trade and investment growth, and bilateral socio-economic exchanges. B&R will also help ensure energy and food security for China. At the same time, China can leverage B&R to develop its underdeveloped southern and western provinces. To date these have not fully benefitted from the country's opening-up policy. They are land locked and have limited trade connectivity to neighbouring countries.

"Belt & Road" countries outside of China

In addition to supporting growth in China, B&R will boost development in countries that run along the road belt and sea routes. B&R involves some 65 countries, accounting for close to 62% of world's population and 31% of global output.⁴ These markets are very diverse in terms of economic and socio-political development, and also cultural and religious background. Many B&R countries are low- to middle-income countries, with per capita GDP ranging from less than USD 1 000 to slightly over USD 20 000 in 2015. However, there are also high-income markets with per capita GDP of over USD 38 000.⁵

The economies along the B&R route are set to benefit from increased foreign (including Chinese) and local investment in infrastructure projects, growth of the financial services sector, job creation, increased trade and improved geopolitical relationships. At the same time, B&R could accelerate the recent trend of relocation of labour-intensive manufacturing industries from China to other low- and middle-income economies in South and Southeast Asia, Central Asia, Central and Eastern Europe (CEE) and Africa.

The global commercial insurance sector is among the major beneficiary of B&R. The Initiative's projects outside of China will generate an estimated additional USD 28 billion of global commercial insurance premiums in the years to 2030. Increased demand for engineering and marine insurance during the construction phase will generate an estimated USD 14 billion of premiums. Demand for property insurance once projects are up and running will trigger another USD 14 billion in cumulative premiums.

Countries in central and western Asia are key links in B&R. Central Asia is an area of strategic interest for Chinese investment given its geostrategic position and rich natural resources. At the same time, developing countries in the region have become increasingly receptive to business projects funded by China. B&R could also benefit Sino-Russian relations. Russia has been looking east to make up for the economic fallout from sustained low oil prices in recent years which has hurt the growth of its energy industry. And Russia's cooperation is crucial to the success of the B&R given its strong influence in Central Asia.

⁴ Swiss Re Institute estimates for 2015, using data from Oxford Economics.

⁵ Ibid.

Both emerging and advanced South and Southeast Asian economies are set to benefit from the B&R Initiative.

Pakistan and other South and the Southeast Asian economies are important B&R partners and beneficiaries also. For instance, the China-Pakistan Economic Corridor (CPEC) will ease Pakistan’s perennial power shortage problem and could generate 700 000 new jobs in the years to 2030.⁶ Emerging South and Southeast Asian economies will also benefit from improved connectivity and freer flow of goods and services. Opportunities for the advanced Southeast Asian economies are likewise significant. Singapore, for example, is one of the world’s leading financial centres and can play a major role in project financing (see *Role of Singapore in the B&R Initiative* on page 11).

Figure 2

Stylised view of the benefits of B&R



Source: Swiss Re Institute.

Middle East involvement in B&R extends beyond energy interests.

The Middle East was originally absent from the B&R blueprint, mainly due to the volatile political and security situation in many Gulf States, and ongoing sanctions against Iran. However, with the loosening of those sanctions and given that China has several strategic partnerships with countries in the region that extend beyond energy, the Middle East has been included in the B&R fold. CEE is a bridge between Western Europe and Asia, and therefore also a critical component. Three of the six proposed B&R economic corridors will pass through CEE. Meanwhile, Africa is increasingly attracting investor interest from all around the world, and China’s B&R investments there will create a plethora of economic opportunities.

⁶ M. Kugelman, “Pakistan’s Other National Struggle: Its Energy Crisis”, *blogs.wsj.com*, 9 July 2015, <http://blogs.wsj.com/washwire/2015/07/09/pakistans-other-national-struggle-its-energy-crisis/>

Infrastructure investments in B&R regions

Infrastructure development is at the heart of B&R.

Total investments in B&R-related projects will be around USD 7.4 trillion by 2030.

Infrastructure investments

The B&R Initiative will entail huge investments in infrastructure and lay a stronger foundation for economic growth. It is estimated that the total demand for infrastructure in B&R countries will exceed an amount of USD 20 trillion between 2015 and 2030.⁷ The infrastructure investments will span China and many countries, and also diverse sectors ranging from transport networks, power plants, oil and gas pipelines and state-of-the-art IT facilities.

It is estimated that total investments in B&R projects (including but not restricted to infrastructure) up to the year 2030 will amount to around USD 7.4 trillion, of which more than 80% will be in infrastructure (see Table 1 and Appendix for more details). China will be heavily involved in many projects across the B&R countries, either by means of financing or as part of construction consortiums. The total value of B&R projects outside China, with Chinese involvement either as an investor or contractor, is estimated to reach a cumulative USD 5.1 trillion by 2030.⁸

Table 1

B&R-related investments by type of project by 2030

	Types of project	Aggregate project value (USD billion)		
		China	Overseas	Total
Infrastructure	Transportation	649	1 557	2 206
	Telecommunication	203	546	749
	Water and sanitation	241	212	453
	Power and resources	662	1 211	1 873
	Other infrastructure	259	704	963
Agriculture	Agriculture, forestry, animal husbandry and fisheries	31	96	127
Cultural exchange, tourism	Cultural exchange, tourism	69	174	243
Others	Capacity cooperation	39	111	150
	Industrial parks	101	288	389
	Commercial building	85	204	289
Total		2 339	5 103	7 442

Note: Numbers for "China" represent values for projects located in China, and numbers for "Overseas" are for those project outside of China. If a project spans China and other countries (eg, bridges and railroads across borders), an estimated portion is applied to "China" and the rest to "Overseas".

Source: Swiss Re Institute estimates, based on information from ADB Institute; McKinsey; Gazprombank; the Infrastructure Consortium for Africa; Vision and Actions¹⁰; BHI.com.cn; Provincial B&R implementation plans from different Chinese provinces; State Council Information Office of China; Zhikun Education; Xinhua News; Jingchu News; iFeng News; and Sina News

⁷ Swiss Re Institute estimates, using data from different international financial institutions. See Appendix for more details. Estimates are for Asia (excluding Hong Kong, Taiwan, Japan and Korea), Eastern Europe and Africa.

⁸ Of the USD 5.1 trillion "Overseas" investment showing in Table 1, around USD 4 trillion will come from China.

⁹ *Visions and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road*, National Development and Reform Commission (NDRC), Ministry of Foreign Affairs, and Ministry of Commerce of the People's Republic of China, with State Council authorisation, March 2015.

The biggest investments will be in the transport and energy sectors.

Most of the investment will be in transport facilities. Road, rail and port construction will make up more than one third of infrastructure investments. The energy sector will be second in terms of share of total investments. One of the priorities of B&R is to “promote cooperation in the connectivity of energy infrastructure, work in concert to ensure the security of oil and gas pipelines and other transport routes, build cross-border power supply networks and power-transmission routes, and cooperate in regional power grid upgrading and transformation”.¹⁰ Globally, around 40% of infrastructure investments in the energy sector go to the laying of transmission and distribution (T&D) lines, and the rest is in the construction of power plants. A similar share of the total estimated USD 1.9 trillion investment in B&R energy sector projects can be expected to go to T&D lines.¹¹

China is heavily dependent on overseas oil and natural gas.

China’s quest for energy security

In April 2015, China became the world’s largest oil importer, ahead of the US. It imports 60% of its oil and 30% of its natural gas requirements each year.¹² Nearly 50% of the oil comes from the Middle East and 25% from Africa.¹³ While China is heavily dependent on foreign oil, it is also the world’s largest energy producer (coal and lignite).¹⁴

B&R’s focus on energy cooperation will likely improve China’s energy security.

China’s energy imports are shipped through the Strait of Malacca, between Malaysia and Indonesia, and the Hormuz Strait, between Iran and United Arab Emirates (UAE).¹⁵ Nearly 80% of the supplies from the Middle East and Africa come through the Strait of Malacca, which is susceptible to blockades due to geopolitical disputes and also piracy. China’s investments in economic corridors (and pipelines) will help address these vulnerabilities. Moreover, the B&R focus on energy cooperation across Central Asia, Africa and the Middle East could improve China’s long-term energy security.¹⁶ Cooperation between China and Central Asia will reduce the risk of blockades to gas supplies and, with the CPEC, the journey distance for oil supplies from the Middle East to China will be cut to 2395 km from the 12 000 km currently as per the maritime route through the South China Sea.¹⁷ The associated costs will fall also.

¹⁰ Ibid.

¹¹ *World Energy Investment Outlook*, IEA, 2014

¹² *Commission on Strategic Development of One Belt One Road*, Hong Kong SAR, July 2015

¹³ Data taken from *Global Energy Statistical Yearbook 2016*, Enerdata, <https://yearbook.enerdata.net/#energy-primary-production.html>

¹⁴ Ibid.

¹⁵ G. Grieger, *One Belt, One Road (OBOR): China’s regional integration initiative*, European Parliament Research Service, July 2016, http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/586608/EPRS_BRI%282016%29586608_EN.pdf

¹⁶ The aim of “energy cooperation” is to ensure continual availability of oil and gas to China, and the creation of alternative, cheaper, faster and safer supply routes. It also generates new investment avenues for China. Chinese companies are investing in overseas markets to build pipelines, refineries and other supporting infrastructure. For instance. 1) Kazakhstan has become China’s major energy partner in Central Asia. China controls approximately 20% of Kazakhstan’s oil production and has constructed one of the world’s longest oil pipelines, running 2300 km from the Caspian Sea to Xinjiang province. The China National Petroleum Corporation (CNPC) owns a significant stake in the Kashagan oil field in the Caspian Sea, while Chinese companies own several key oil fields around the western city of Aktobe. In addition, Kazakhstan serves as key transit route for oil and gas from the smaller nations of Central Asia. 2) Turkmenistan is the region’s main gas exporter, and exports its reserves directly to China through the Central Asia-China Gas Pipeline. 3) Uzbekistan supplies gas through the upgraded pipeline network and has attracted Chinese investment in recent years, typified by a USD 15 billion bilateral energy deal concluded in 2013. 4) China has also financed two refineries in Kyrgyzstan, in the towns of Kara-Balta and Tomok. The refineries are supplied by CNPC-run oil fields in neighbouring Kazakhstan, and produce 1.35 million tonnes of refined product annually. Source: Michael Hart, “Central Asia’s Oil and Gas Now Flows to the East”, *The Diplomat*, 18 August 2016, <http://thediplomat.com/2016/08/central-asias-oil-and-gas-now-flows-to-the-east/>

¹⁷ G. Greiger. op. cit.

Infrastructure investments in B&R regions

China could direct up to USD 1 trillion of outbound state financing to B&R projects in the next 10 years.

Many international financial institutions have joined hands.

Public-private partnership (PPP) will be needed as an additional source of financing.

B&R will ease infrastructure bottlenecks and support economic growth.

Tangible progress has already been made.

Financing

The B&R Initiative demands a very large financing commitment. According to PwC estimates, B&R will mobilise up to USD 1 trillion of outbound state financing from China in the next 10 years. Most of this will be in the form of preferential debt funding, but some will be equity. The government has created dedicated vehicles to help allocate this money to appropriate projects and initiatives. These include the recently established New Silk Road Fund (NSRF), the Asian Infrastructure Investment Bank (AIIB) and government-directed funding from China's largest state-owned banks, among others.¹⁸

Overseas governments and investors are participating also. For instance, International Enterprise Singapore has signed a Memorandum of Understanding (MoU) with China Construction Bank Corporation (CCB). International pension funds, insurance companies, and sovereign wealth and private equity funds have also expressed interest in B&R projects.

Public-private partnerships (PPP) can be another important financing vehicle for B&R infrastructure projects. China rolled out its PPP model in 2014 and began promoting it heavily in 2016. PPP is expected to play an important role in B&R projects outside of China also.¹⁹ To be successful, PPP need strong co-ordination as each party brings different skills: governments can offer cheaper financing, outside investors bring financial rigour, technical expertise comes from designers and contractors, and operations and maintenance companies offer practical knowledge.

B&R investments by region

Lack of infrastructure is a stumbling block for development in many emerging markets. The B&R projects will help close the existing (significant) infrastructure gaps in many of the participating countries. Improved connectivity, increased regional cooperation and technological know-how transfer will also support growth in different economic sectors like manufacturing, agriculture and tourism.

There has already been tangible progress in the B&R Initiative. China has signed more than 30 bilateral cooperation agreements with countries along the B&R routes. A number of projects are under way, including a train connection between eastern China and Iran that may be expanded to Europe, new rail links with Laos and Thailand, and a high-speed-rail project in Indonesia. The Baltic Exchange in London is contributing to B&R through close collaboration with the Ningbo Shipping Exchange.²⁰ And more than 200 enterprises have signed cooperation agreements for other B&R projects.²¹ Overall, Southeast Asia is likely to be the biggest recipient of B&R investments (see Table 2),

¹⁸ Y. van der Leer, J. Yau, *China's new silk route*, PwC, February 2016.

¹⁹ J. Channell, E. Curmi, D. Lubin, *Infrastructure For Growth, The dawn of a new multi-trillion dollar asset class*, Citi, October 2016

²⁰ According to a press announcement, "the London headquartered Baltic Exchange is contributing to China's Maritime Silk Road project through close collaboration with the Ningbo Shipping Exchange. The first step of this collaboration includes container freight rates from Ningbo to Europe and the Middle East provided by the Ningbo Shipping Exchange." See *Baltic Exchange collaborates with Ningbo Shipping Exchange*. The Baltic Exchange, 23 November 2015, <https://www.balticexchange.com/news/press-announcements/article/baltic-exchange-collaborates-with-ningbo-shipping-exchange/3365/>

²¹ T. Jinchen, *One Belt and One Road: Connecting China and the world*, McKinsey & Company, July 2016.

Table 2

Estimated B&R investments outside China, by region and sector by 2030

		Aggregate project value (USD billion)							
		Africa	CEE	Mongolia & Russia	Middle East	Southeast Asia	South Asia	Central Asia	Total
Infrastructure	Transportation	123	158	232	137	565	268	75	1 557
	Telecommunication	19	70	45	55	203	97	57	546
	Water and sanitation	12	41	8	36	80	19	17	212
	Power and resources	79	106	136	131	493	146	121	1 211
	Other infrastructure	46	75	84	72	267	106	54	704
Agriculture	Agriculture, forestry, animal husbandry and fisheries	6	10	11	10	36	14	7	96
Cultural exchange, tourism	Cultural exchange, tourism	11	19	21	18	66	26	13	174
Other	Capacity cooperation	7	12	13	11	42	17	8	111
	Industrial parks	19	31	34	29	110	43	22	288
	Commercial building	13	22	24	21	78	31	16	204
Total		335	542	610	519	1 940	767	390	5 103

Source: Swiss Re Institute estimates, based on information from ADB Institute, McKinsey, Gazprombank, the Infrastructure Consortium for Africa, and *Visions and Actions*.

Southeast Asia will benefit from infrastructure investments and improved regional cooperation.

Southeast Asia

Southeast Asia is home to nearly 640 million people and with total economic output of USD 2.5 trillion in 2016, is an important base for B&R. Between now and 2030, the region could generate additional economic value of USD 280–615 billion each year, while the number of consuming households could double to 163 million.²² However, infrastructure bottlenecks remain a stumbling block. The cooperation and investment born of B&R will help ease supply-side constraints such as cumbersome customs clearance procedures and weaknesses in transport infrastructure.²³

Figure 3

Economic corridors passing through Southeast Asia



Source: Swiss Re GEO Services, Swiss Re Institute.

²² Consuming class refers to those with income exceeding the level at which they can begin to make significant discretionary purchases. See *Southeast Asia at the crossroads: Three paths to prosperity*, McKinsey & Company, November 2014.

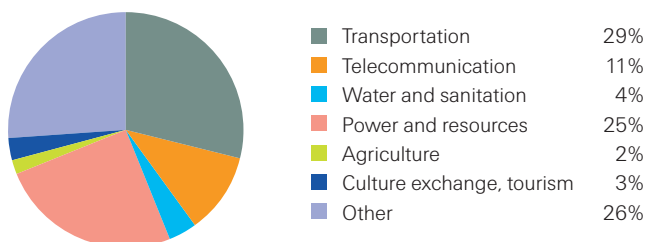
²³ *One Belt, One Road: an economic roadmap*, The Economist Intelligence Unit, September 2016.

Infrastructure investments in B&R regions

Investment in ports and railways will reduce logistics costs and increase the competitiveness of emerging economies in Southeast Asia.

Southeast Asia is a main conduit for the 21st Century Maritime Silk Road – a sea route that runs west from China’s east coast to Europe through the South China Sea and the Indian Ocean, and east into South Pacific. Improvements in port facilities and rail links between industrial hinterlands will reduce logistics costs and increase the competitiveness of individual economies in the region.²⁴ This will in turn encourage further relocation of manufacturing from increasingly costly production bases in China to Cambodia, Myanmar, Laos and Vietnam (CMLV) in particular.

Figure 4
Estimated shares of B&R investments in Southeast Asia by sector, by 2030



B&R investments value in Southeast Asia: USD 1.94 trillion

Source: ADB Institute, McKinsey, *Visions and Actions*, Swiss Re Institute.

Transport-related projects in the region will attract most investments.

Total projected investments in B&R-related projects in Southeast Asia will reach an estimated USD 1.9 trillion by 2030, and most infrastructure projects will involve Chinese parties either as an investor or contractor. Transport-related projects, mostly in the form of refurbishment or construction of new ports and waterways, will draw close to 29% of the total investments (see Figure 4). Major port projects to have already benefitted from Chinese investment include the expansion of Kuantan Port and the Phase 1 development of Samalaju Port, both in Malaysia; the development of Tanjung Sauh Port on Batam Island in Indonesia, which was funded by China CAMC Engineering Company; and the construction of a deep-sea port on Madae Island of Myanmar with investment from China National Petroleum Corporation. Several large Chinese-backed railway and road development projects are also under way across Southeast Asia.²⁵

²⁴ T. Mooney, "Southeast Asian infrastructure benefits heavily from One Belt One Road", *fairplay.ihs.com*, June 2016, <http://fairplay.ihs.com/ports/article/4269726/southeast-asian-infrastructure-benefits-heavily-from-one-belt-one-road>

²⁵ Ibid.

Singapore can provide financial services to support B&R projects.

Construction companies in Singapore will be involved in B&R; the city-state will also be a maritime and logistics hub.

Role of Singapore in the B&R Initiative

Singapore has an important role to play in both the construction and operational phases of B&R projects. Singapore is one of the world's leading financial services centres and can play a major role in project valuation, financing and insurance. The city-state has a proven record in raising and distributing equity and debt capital, supported by a strong, well-regulated and transparent capital market. For instance, to this end International Enterprise Singapore has signed a MoU with China Construction Bank Corporation (CCB) under which CCB will avail SGD 30 billion of financing to support Singapore and Chinese companies investing in B&R infrastructure projects.²⁶ Singapore is also an important insurance centre in Asia, and a base for many major international insurers and reinsurers. Together with local carriers, they provide the full range of insurance services.²⁷

The B&R Initiative provides significant opportunities for construction companies in Singapore, many of which have expertise across the infrastructure value chain. They can contribute to city and master planning, smart city systems, engineering design, procurement, and construction and operations. Connectivity is another area. At the gateway of the Malacca Straits, Singapore is a key strategic maritime and logistics hub.

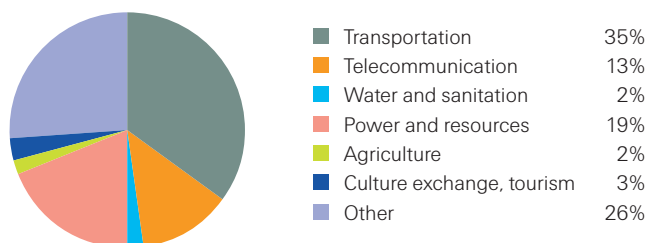
South Asia's large population and strong economic growth are important factors supporting the B&R Initiative.

South Asia

South Asia has a large population and strong economic growth, and neighbours Central and Southeast Asia. For these reasons, the region is key to the success of B&R. Two out of the six economic corridors, namely the Bangladesh-China-India-Myanmar Economic Corridor (BCIM-EC) and the CPEC pass through South Asia. Total accumulated B&R-related investments in the region will reach an estimated USD 767 billion by 2030.

Figure 5

Estimated shares of B&R investments in South Asia by sector, by 2030



B&R investments value in South Asia: USD 767 billion

Source: ADB Institute; McKinsey, *Visions and Actions*, Swiss Re Institute.

The CPEC will give China land access to the Indian Ocean ...

The CPEC will be a 3218 km long route of highways, railways and oil & gas pipelines. The total estimated cost of building the corridor is USD 75 billion.²⁸ The CPEC will give China land access to the Indian Ocean, cutting a nearly 13 000 km long sea route from Tianjin to the Persian Gulf through Malacca Straits and around India, to approximately 2000 km of overland journey. The massive funding requirements will provide Chinese and regional companies with investment opportunities for many years to come. When CPEC is fully operational, Gwadar could become a gateway for Central Asian countries, including Afghanistan, Uzbekistan, and also link Sri Lanka and Iran with China.

²⁶ China Construction Bank and IE Singapore sign first-ever MOU to finance "One Belt, One Road" infrastructure projects in Southeast Asia, IE Singapore, 25 April 2016, http://www.iesingapore.gov.sg/~media/IE%20Singapore/Files/Media%20Centre/Press%20Releases/2016/April/China_Construction_Bank_and_IE_Singapore_MOU.pdf

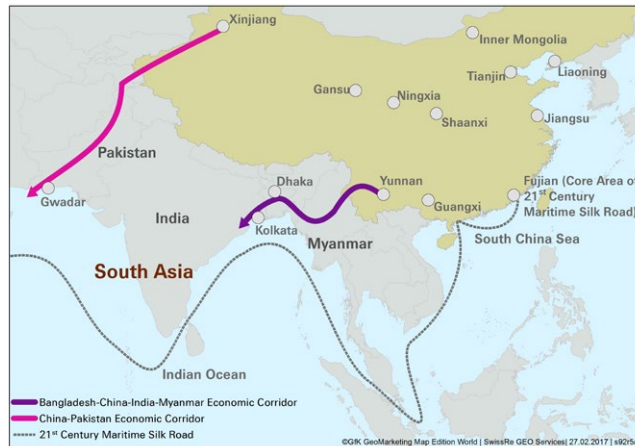
²⁷ "Wealth Management and Insurance", *Monetary Authority of Singapore*, 26 November 2016, <http://www.mas.gov.sg/Singapore-Financial-Centre/Overview/Wealth-Management-and-Insurance.aspx>

²⁸ N. Murtaza, "CPEC: A unique model", *The Nation*, 14 November 2016, <http://nation.com.pk/columns/14-Nov-2016/cpec-a-unique-model>

Infrastructure investments in B&R regions

... while also contributing to resolve the long-standing chronic power issue in Pakistan.

Figure 6
Economic corridors through South Asia



Source: Swiss Re GEO Services, Swiss Re Institute.

The CPEC will bestow huge benefits on Pakistan. There will be significant investment in power and energy, adding an estimated 16 000 MW by 2021. This will help ease the country's power shortfall problems. Also, CPEC is expected to create around 700 000 jobs in Pakistan up to 2030, and add around 2–2.5% to the country's GDP growth, value currently lost due to energy shortages.²⁹

India's participation in B&R came after more than a decade of deliberation and various bilateral meetings with China.

India is the second largest country of the B&R nations in terms of population and size of economy. After more than a decade of deliberation, India finally expressed willingness to participate in the BCIM-EC when Chinese Premier Li Keqiang proposed construction of the corridor during his meeting with then Indian Prime Minister Manmohan Singh in New Delhi in May 2013.³⁰ The subject was again raised by Chinese President Xi Jinping with Prime Minister Narendra Modi at their first official meeting during the BRICS Summit in Brazil in July 2014. It was discussed again by the two leaders in New Delhi in September 2014 and in Beijing in May 2015.^{31,32}

The north-eastern states of India will emerge as the major beneficiaries of the BCIM-EC.

The BCIM-EC will connect Kunming in southwest China to Kolkata in India through Mandalay and Dhaka. The north-eastern states of India will be the major beneficiaries. From Kolkata, the capital of West Bengal, the corridor will head towards Benapole, a border crossing town in Bangladesh. After passing through Dhaka and Sylhet, it will re-enter India near Silchar in Assam. The rest of the passage will be connected with Imphal and then pass through the Indian-built Tamu-Kalewa friendship road in Myanmar. The main artery of the 2 800 km, K (Kolkata)-2-K (Kunming) corridor is almost ready. A stretch of less than 200 km from Kalewa to Monywa in Myanmar needs to be upgraded to all-weather conditions. The second phase is the section between Silchar in Assam and Imphal in Manipur, which India is upgrading.³³

²⁹ M. Kugelman, "Pakistan's Other National Struggle: Its Energy Crisis", *blogs.wsj.com*, 9th July 2015, <http://blogs.wsj.com/washwire/2015/07/09/pakistans-other-national-struggle-its-energy-crisis/>

³⁰ While B&R was announced in 2013, some of the Economic Corridors have been under consideration for longer. The vision for the BCIM-EC was first put forth by Professor Che Zhimin, then Deputy Director of the Economic and Technological Research Centre of the Yunnan Provincial People's Government, during a visit to India in November 1998. In August 1999, the BCIM Forum for Regional Cooperation officially came into existence with a meeting held in Kunming, wherein the final statement of this meeting was titled, "The Kunming Initiative". See M. Vaid and T. Singh Maini, "BCIM: Can India Be a Driving Force?", *The Diplomat*, 1 January 2015, <http://thediplomat.com/2015/01/bcim-can-india-be-a-driving-force/>

³¹ Dr R. Bhattacharjee, "Bangladesh, China, India and Myanmar-Economic Corridor: Ushering a New Era of Interconnectedness", *Indian Defence Review*, 18 September 2016.

³² A. Sajjanhar, "Understanding the BCIM Economic Corridor and India's Response", *Observer Research Foundation*, Issue no. 147, June 2016.

³³ Dr R. Bhattacharjee, "The emerging Bangladesh China India Myanmar-Economic Corridor and its opportunities", *The Eastern Today*, 11 February 2016, <http://www.eastern-today.com/entries/editorial/the-emerging-bangladesh-china-india-myanmar-economic-corridor-and-its-opportunities>.

There is a large infrastructure gap in Central Asia.

Availability of natural resources and labour make Central Asia an ideal production base for China.

Central Asia has huge oil and natural gas reserves.

A majority of investments in Central Asia will be made in building energy infrastructure.

Central Asia

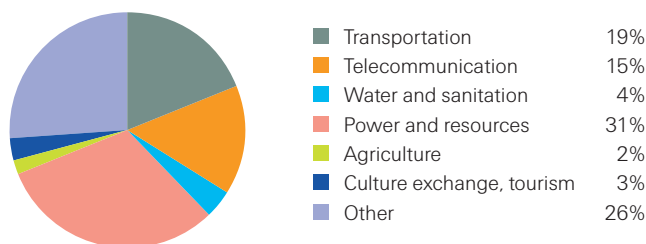
The infrastructure gap in Central Asia is high relative to other B&R regions (except Africa), and developing countries in the region have become more receptive to Chinese funding for construction projects. For China, Central Asia is one of the main strategic areas for investment due to the geostrategic position, and its rich natural resources and abundant labour supply.

The “*stan*” countries of Central Asia (Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan and Tajikistan) are landlocked and have weak transport facilities. As such their development potential is significant. For instance, Uzbekistan is the world’s second largest exporter of cotton. With enabling transport and other infrastructure, Uzbekistan can act as a low-cost cotton production base for China. Strong transport networks will also promote tourism and other trade avenues.

Central Asia also has huge oil and natural gas reserves, with estimates ranging from between 110 billion to 243 billion barrels of crude oil. According to the US Department of Energy, Azerbaijan and Kazakhstan alone could sit on more than 130 billion barrels, more than three times US reserves. Kazakhstan is the region’s leading oil producer and has become China’s major energy partner in Central Asia. Turkmenistan, as the main gas exporter in region, exports directly to China through the Central Asia-China Gas Pipeline. Uzbekistan also supplies gas to China and has attracted increased Chinese investment in recent years. China has also financed the building of two refineries in Kyrgyzstan. The refineries are supplied by CNPC run oil fields in neighbouring Kazakhstan, and produce 1.35 million tons of refined product annually.^{34, 35}

It is estimated that the region will attract around USD 390 billion investments in B&R related projects in the years to 2030. According to the International Energy Agency estimates, China will import up to 50% of the region’s oil and gas by 2020.³⁶ A majority of investments in the region will be in building energy and transportation infrastructure (see Figure 7). China also plans to build industrial economic zones along the B&R countries, and Central Asia can play a very important role by supplying energy to keep those zones up and running.

Figure 7
Estimated shares of B&R investments in Central Asia by sector, by 2030



B&R investments value in Central Asia: USD 390 billion.
Source: ADB Institute; McKinsey, *Visions and Actions*, Swiss Re Institute.

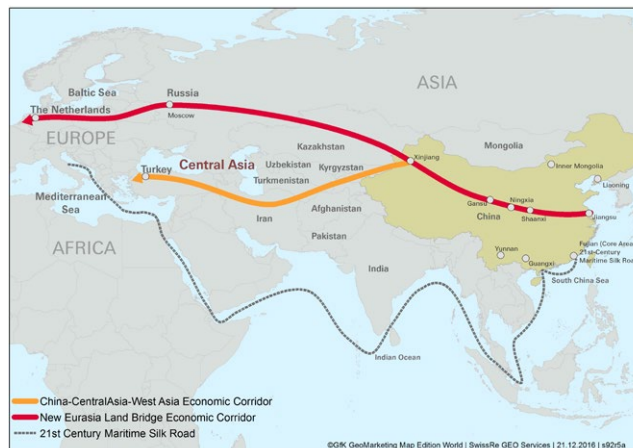
³⁴ Z. Khan, “Central Asia- Pivot of the new great game”, *foreignpolicynews.org*, 3 May 2016, <http://foreignpolicynews.org/2016/05/03/central-asia-the-pivot-of-new-great-game/>
³⁵ “Crude Oil Proved Reserves, Reserves Changes, and Production”, *eia.gov*, 19 November 2016, http://www.eia.gov/dnav/pet/pet_crd_pres_dcu_NUS_a.htm
³⁶ M. Hart, “Central Asia’s Oil and Gas Now Flows to the East”, *thediplomat.com*, August 2016, <http://thediplomat.com/2016/08/central-asias-oil-and-gas-now-flows-to-the-east>.

Infrastructure investments in B&R regions

Two of the proposed six B&R economic corridors run through Central Asia.

The Eurasia Land Bridge Economic Corridor will connect China with Europe through central and western Asia. Currently, a rail route runs from Lianyungang in China's Jiangsu province through Alashankou in Xinjiang, all the way to Rotterdam in the Netherlands. To extend the line to more coastal ports in Europe, a new Land Bridge passing through Kazakhstan, Russia, Belarus and Poland is planned. Meanwhile, the proposed China-Central Asia-West Asia Economic Corridor will link Xinjiang with the Mediterranean and the Arabian Peninsula via a rail network across central and western Asia. The corridor will connect Xinjiang with Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan in Central Asia, and proceed on to Iran and Turkey.

Figure 8
Economic corridors passing through Central Asia



Source: Swiss Re GEO Services, Swiss Re Institute.

China is dependent on the Middle East to meet its energy requirements.

China is also investing in improving the transportation network in the region.

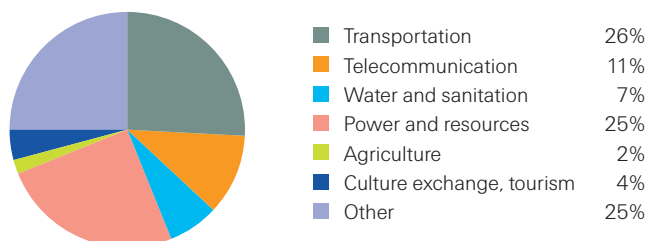
Middle East

China is heavily dependent on oil and gas imports from the Middle East. More than 50% of the total crude imported in 2013 came from the Middle East,³⁷ most from Saudi Arabia. China has increased its global investments in the energy sector in order to secure its supplies. In 2014, China's net overseas direct investment in the energy sector was USD 1.8 billion, up from USD 680 million in 2013.³⁸

Since 2014, China has signed "comprehensive strategic partnership" agreements with Iran, Saudi Arabia and Egypt, and five "strategic partnership" agreements with other countries in the Middle East. A further three "strategic partnership" agreements are in the pipeline. China is also seeking to go beyond its energy-based relationship with the region, for instance by also making big investments in high-speed railway links and telecommunications infrastructure. For example, Chinese corporations have completed the Ankara-Istanbul railway link in Turkey and are building the Teheran-Mashhad high-speed railway link in Iran. Additionally, Chinese companies have upgraded the telecommunications network in Saudi Arabia and have been awarded the contract to overhaul Syria's network. A Sino-US consortium is reportedly set to bid for the construction of Turkey's third nuclear power plant.³⁹

Figure 9

Estimated shares of B&R investments in the Middle East by sector, by 2030



B&R investments value in Middle East: USD 519 billion.

Source: ADB Institute, McKinsey, *Visions and Actions*, Swiss Re Institute.

Iran is a main conduit for the B&R initiative in the Middle East.

With the loosening of international sanctions, Iran is becoming a main conduit for B&R, given its geostrategic location in connecting east and west. Overall, China has outlined plans to provide USD 55 billion in loans and investments for infrastructure in Middle Eastern countries, which could directly and indirectly facilitate B&R. According to a recent report, the Asian Infrastructure Investment Bank (AIIB) will be a main source of funds. Qatar is establishing a USD-20-billion investment fund for bilateral projects, while the UAE is setting up a USD-10 billion-joint sovereign wealth fund with China.⁴⁰

China, Russia and Mongolia are partnering to boost transportation connectivity and economic cooperation.

Mongolia & Russia

China, Russia and Mongolia have endorsed a development plan to build the China-Mongolia-Russia Economic Corridor. On 23 June 2016, the three countries signed a trilateral economic partnership agreement in Tashkent, pledging to boost transportation connectivity and economic cooperation in border regions. The corridor will improve trade integration, and is in line with policy in all three countries: China's B&R Initiative, Russia's Trans-Eurasian Belt Development, and Mongolia's Prairie Road program.⁴¹

³⁷ W. Tao, "One Belt, One Road will bypass the Middle East, and for good reason", *NewsChina Magazine*, May 2015, <http://old.newschinamag.com/magazine/one-belt-one-road-will-bypass-the-middle-east-and-for-good-reason>

³⁸ China National Bureau of Statistics, <http://www.stats.gov.cn/tjsj/ndsj/2015/html/EN1120.jpg>

³⁹ S. Hornschild, *China in the Middle East: not just about oil*, European Union Institute for Security Studies, July 2016

⁴⁰ Ibid.

⁴¹ *Trilateral transit transportation*, FRONTIER Securities, 16 September 2016.

Infrastructure investments in B&R regions

Figure 10

Economic corridors passing through Mongolia and Russia



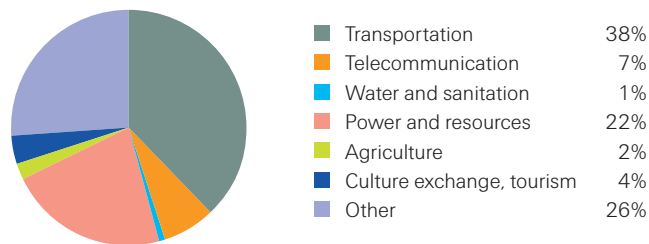
Source: Swiss Re GEO Services, Swiss Re Institute.

The key focus is on improving roads and other forms of transportation in the region.

The trilateral economic partnership agreement consists of 32 proposed projects, and outlines the creation of a joint investment centre to assess the financial requirements and feasibility of each project. A key part of the agreement involves cooperation on improving roads and other forms of transport. The agreement says the future trilateral relationship will not be limited to “transport and customs issues,” and that it could extend to agriculture, tourism, emergency preparedness and other areas.⁴²

Figure 11

Estimated shares of B&R investments in Mongolia and Russia by sector, by 2030



B&R investments value in Mongolia and Russia: USD 610 billion

Source: ADB Institute, McKinsey, Gazprombank, *Visions and Actions*, Swiss Re Institute.

The majority of investments will be in transportation-related projects.

Total B&R-related investments in the region are estimated to be around USD 610 billion until 2030. The majority of these investments will likely be in transport-related projects (see Figure 11). For instance, preparatory work on a USD-21-billion Moscow-Kazan-Ekaterinburg high-speed railway project has started.⁴³ And Mongolia has plans to expand the Trans-Mongolian railway with the construction of a new route going east.⁴⁴

⁴² Ibid.

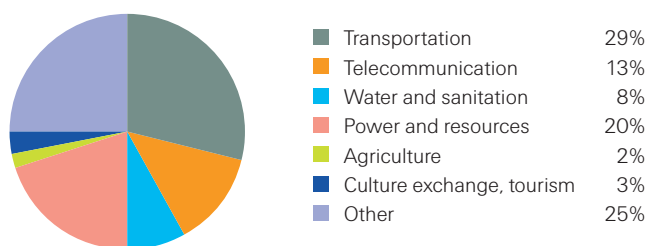
⁴³ *Moscow-Kazan-Ekaterinburg High Speed Railway*, Center for Strategic & International Studies, <https://reconnectingasia.csis.org/database/projects/moscow-kazan-ekaterinburg-high-speed-railway/84285790-f076-41ef-8734-6d1df09af9fc/>

⁴⁴ T. Edwards, “Mongolia to pitch railway projects to China-backed AIB gov’t advisor”, *Reuters*, 20 September 2016, <http://www.reuters.com/article/mongolia-railways-idUSL3N1BW2KQ>

Its location, low costs and educated workforce makes CEE very interesting from a B&R investment perspective.

Slow economic growth since the financial crisis has rendered CEE markets receptive to Chinese investment.

Figure 12
Estimated share of B&R investments in CEE by sector, by 2030



B&R investments value in CEE: USD 542 billion.
Source: ADB Institute, McKinsey, *Visions and Actions*, Swiss Re Institute.

A majority of investments will go into building rail routes.

Central and Eastern Europe (CEE)

CEE is a bridge between western Europe and Asia, providing access to the European Union. Its location, educated work force and lower operational costs compared with the EU makes CEE extremely attractive from the B&R investment perspective. Several transport corridors linking China with Europe will pass through CEE countries. China has been working closer with CEE countries through the “16+1” Summit (the 16 CEE countries and China). Since the first meeting of the heads of states in Warsaw in 2012, followed by subsequent meetings in Bucharest in 2013 and Belgrade in 2014, coordination among the nations of cross-border projects is becoming increasingly institutionalised.⁴⁵

Three of the six proposed B&R economic corridors will pass through CEE. The region will attract an estimated USD 542 billion of B&R investments until 2030. Since the global financial crisis, growth in CEE has lagged many other emerging regions, and B&R-related investments will be a welcome boost. The investments will be across different infrastructure sectors, with transport getting most.

The Chongqing-Xinjiang-Duisburg cargo rail route was opened in 2011, and is considered part of the New Silk Road. And in 2013, two direct railway cargo connections between Poland and China were launched. Since then, Sichuan Province has developed a close trade relationship with Poland, with bilateral trade volumes reaching USD 123 million in 2015. The railway links will cut the transportation time from east to west and vice versa to 12-21 days from the 30–45 days currently offered by maritime transport. Moreover, the cost of railway shipments are about 20–25% the cost of airfreight.⁴⁶

⁴⁵ *One Belt One Road – Implications for the European Union*, European Union Academic Programme Hong Kong, 2 June 2015, <http://euap.hkbu.edu.hk/main/one-belt-one-road-implications-for-the-european-union/>

⁴⁶ The Chongqing-Xinjiang-Duisburg cargo rail route, connecting southwest China’s Chongqing with Germany, was opened in 2011. More than 1700 China-Europe container trains have been launched since the first left southwest China’s Chongqing for Germany’s Duisburg in 2011. Most of these trains passed through Poland while the Chengdu-Europe cargo train and “Sumanou” from Suzhou to Warsaw, two non-stop trains, run from China directly to Poland. See “China-Poland cargo trains boost bilateral trade”, *Xinhua*, 20 June 2016, <http://www.globaltimes.cn/content/989462.shtml>

Infrastructure investments in B&R regions

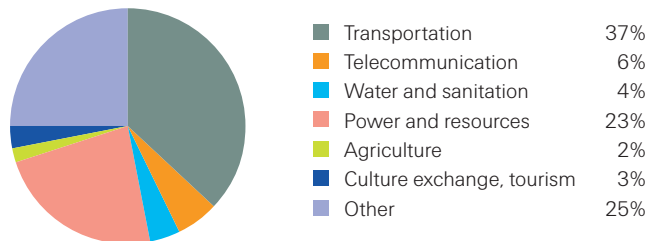
Africa is strategically important to China

Africa

More countries across the globe are looking to invest in Africa, attracted by improving infrastructure, and rising urbanisation and consumerism across the continent. China's investments in Africa are creating many economic opportunities for both sides, including infrastructure development and the transfer of labour-intensive manufacturing to Africa. At the same time, the Chinese renminbi is beginning to be used as a reserve and settlement currency by African nations.

Figure 13

Estimated shares of B&R-related infrastructure investments by sector in Africa, by 2030



B&R investments value in Africa: USD 335 billion.

Source: ADB, McKinsey, Infrastructure Consortium for Africa, *Visions and Actions*, Swiss Re Institute.

A majority of investments in Africa will be in transportation and energy.

Africa will receive an estimated USD 335 billion of total investments in B&R-related projects by 2030, a majority with Chinese involvement either as investor or contractor. Transport-related projects with heavy focus on rail will be the main destinations for the investments over the next five years.⁴⁷ There will also be activity in the energy sector. For instance, in early 2016 Chinese investors signed a deal to build Sudan's first nuclear power plant. The facilities will be built by China National Nuclear Corporation (CNNC). Nigeria and Egypt will also benefit from these projects due to their strategic location and more developed economic structures.

⁴⁷ L. Hill-choi, "One belt, one road initiative creates fresh opportunities for Asians investing in Africa", *South China Morning Post*, 1 November 2016, <http://www.scmp.com/specialreports/business/topics/one-belt-one-road/article/2041874/one-belt-one-road-initiative>

B&R projects: what are the risks?

Cross-border infrastructure projects are vulnerable to risks throughout their life cycle.

Infrastructure projects are vulnerable to a number of risks, from execution risk during the planning and construction phase to default risk associated with project financing and repayments.⁴⁸ The risks are amplified in the case of B&R construction projects given the heterogeneity of security interests, domestic politics and governance arrangements in some of the participating countries. China has experience of cross-border construction projects in countries in which there is moderate to high risk of expropriation, capital transfer restrictions, and political violence. The scope of B&R initiatives suggests a need for strong political and country risk management capabilities.

Political risk is a major source of concern for cross-border B&R projects.

Political risk

Politics can be a major obstacle for any infrastructure scheme, especially cross-border projects. For B&R, the heterogeneity of the participating countries as well as varied interests and concerns about Chinese dominance raise the political risk bar even further. However, as Table 3 shows, certain B&R countries exhibit some degree of political (in this case high voting affinity recently with China at the UN General Assembly) and/or financial (official use of the renminbi) alignment with China. The implied “soft-power” born of these alignments with China means that B&R projects in those countries in the top left quadrant of Table 3 might be expected to encounter fewer practical, bureaucratic and/or political obstacles than those taking place in countries in the bottom right hand grid.

Table 3:
Recent “soft-power” alignments with China

		Geopolitical <i>Very high voting affinity with China in the UN General Assembly, 2009–2013?</i>			
		Yes		No	
Financial <i>Evidence that central bank holds RMB reserves, SWF holds RMB reserves, or country has a bilateral currency swap agreement with China in place, 2009–2013?</i>	Yes	Singapore Malaysia Indonesia Cambodia Uzbekistan Nigeria	Thailand Philippines Kenya Pakistan Angola	Turkey Tanzania Kazakhstan Russia	
	No	Ethiopia Iran Laos Myanmar Vietnam Bangladesh Turkmenistan Uganda	Tajikistan Djibouti Azerbaijan Mozambique Kyrgyzstan Egypt Zambia	Greece Ghana Somalia Gabon Rwanda	Israel Togo Afghanistan India Poland

Note: SWF = Sovereign Wealth Fund.

Source: Swiss Re calculations based on S. Liao, D. McDowell, “No Reservations: International Order and Demand for the Renminbi as a Reserve Currency”, 2015 *Harvard Dataverse*, V4

⁴⁸ *Strategic Infrastructure: Mitigation of Political and Regulatory Risk in Infrastructure Projects*, World Economic Forum and Boston Consulting Group, February 2015, http://www3.weforum.org/docs/Media/WEF_RM%20Report%202015.pdf

B&R projects: what are the risks?

Geopolitical/territorial disputes, and the alignment of some countries with the US and Japan, could limit Chinese soft-power in the region.

Insurgency and potential land disputes elevate political risk pertaining to infrastructure projects.

Change in governments in the B&R countries is also a source of risk for the ongoing and planned projects.

That said, Chinese soft-power could have its limits, particularly in B&R countries also aligned with the US and Japan, or those which have geopolitical/ territorial disputes with China (India, Vietnam, the Philippines and other South China Sea claimants). For example, in mid-2016 talks on the building of a section of high-speed rail line from Kunming to Singapore temporarily broke down after Thailand refused to grant China development rights to adjacent land, and claimed to be able to get financing from Japan at better rates.⁴⁹ Concerns about Chinese dominance may also hinder cross-border connectivity, with standardisation for connectivity and compatibility being a particularly sensitive issue in some countries.⁵⁰

Another risk is that some B&R countries are home to insurgent groups. Such groups often oppose infrastructure projects seen as bolstering the authority and logistical capabilities of central government, or alternatively try to extort funds from a project. More broadly, the forcible displacement of populations to make way for infrastructure facilities, concerns about sacrificing national sovereignty when foreign investment is involved, and/or the perception of inadequate compensation can lead to prolonged social unrest. In these circumstances, local government authorities sometimes choose to pull out of their project-related commitments, bringing the future of a project under question.

A change in political leadership can alter the broader policy environment, as well as the government's stance on specific projects. For example, the potential for leadership change in Angola, Kazakhstan, Zambia, and Kenya is a source of general political and policy uncertainty. And in Thailand, the question of whether the military junta returns to the barracks in 2017 is also generating uncertainty, given the military's use of Article 44 of the interim constitution to drive through unpopular infrastructure projects, which could be at risk under a return to civilian government.⁵¹

⁴⁹ "Our Bulldozers, Our Rules," *The Economist*, 2 July 2016, <http://www.economist.com/news/china/21701505-chinas-foreign-policy-could-reshape-good-part-world-economy-our-bulldozers-our-rules>; "On Southwestern Fringe, China's Silk Road Ambitions Face Obstacles," *Reuters*, 4 June 2016, <http://www.reuters.com/article/us-china-infrastructure-asean-insight-idUSKCNOYR010>

⁵⁰ S. Darby, K. Chan, I. Zhou, *Eurasia: the New Silk Road from Yiwu to Madrid*, Jeffries, 4 February 2016.

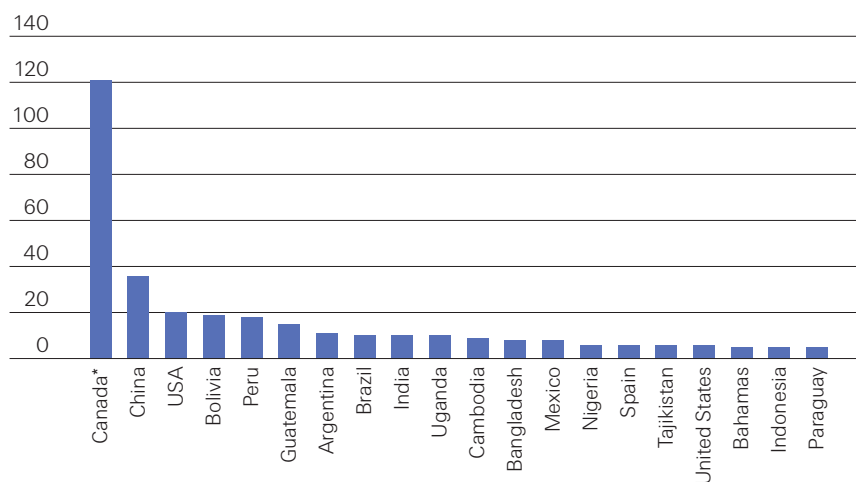
⁵¹ "A Do-What-We-Want Law in Thailand May Enable airport Runway," *Bloomberg*, 3 May 2016, <https://www.bloomberg.com/news/articles/2016-05-03/a-do-what-we-want-law-in-thailand-may-enable-new-airport-runway>

B&R projects are exposed to a number of operational risks ranging from corruption to environmental impact issues.

Figure 14
Number of firms sanctioned by the IDB for fraudulent and corrupt practices since 2007, by country

Operational risk

Infrastructure projects can be vulnerable to corruption. For example from 2007 to 2016, the Inter-American Development Bank has sanctioned a number of firms around the world, including 36 Chinese companies, for fraudulent and corrupt practices (see Figure 14). Many construction firms have allowed facilitation payments and also lack adequate whistle-blower policies and codes of ethics. Many firms also lack transparent health and safety standards and have been accused of covering up occupational incidents.



*Note: Out of 121 companies sanctioned in Canada, SNC-Lavalin and its many affiliates represents around 115 of those entries. This is the outcome of a World Bank investigation relating the Padma Bridge project in Bangladesh. As a result of the misconduct found during the probe, the Montreal-based engineering and construction firm, and its affiliates as per World Bank policy, were debarred in April 2013 for 10 years, as part of a settlement with SNC-Lavalin. Source: A. Ligaya, "Canada now dominates World Bank corruption list, thanks to SNC-Lavalin", *Financial Post*, 18 September 2013, <http://business.financialpost.com/executive/canada-now-dominates-world-bank-corruption-list-thanks-to-snc-lavalin>
Source for chart: IDB Group's list of sanctioned firms and individuals, Inter-American Development Bank, <http://www.iadb.org/en/topics/transparency/integrity-at-the-idb-group/sanctioned-firms-and-individuals,1293.html>

Many B&R countries rank very low in contract enforcement.

In terms of governance standards, while some B&R countries rank relatively high on contract enforcement, many do not. Depending on the circumstances, the possibility for recovery through international arbitration may also be more limited in some countries. Ethiopia and Turkmenistan are not contracting states to the New York Arbitration Convention, which requires local courts to recognise private agreements to arbitration, and to enforce arbitration decisions. Russia, Kyrgyzstan, Thailand and Ethiopia are signatory states to the International Center for the Settlement of Investment Disputes (ICSID), a forum for investor-state dispute settlements, but have not ratified their membership. Meanwhile, Myanmar, India, Laos, Tajikistan and Vietnam are not members at all.⁵² On the other hand, a growing web of bilateral investment treaties, of which China and many B&R countries are a part, may also provide opportunities for arbitration.⁵³

⁵² "Contracting States," New York Arbitration Convention, [newyorkconvention.org](http://www.newyorkconvention.org/countries), accessed 2 February 2017, <http://www.newyorkconvention.org/countries>; "Database of ICSID Member States," International Centre for Settlement of Investment Disputes, csid.worldbank.org accessed 2 February 2017, <https://icsid.worldbank.org/en/Pages/about/Database-of-Member-States.aspx>
⁵³ Q. Zhang, "China's "new normal" in international investment agreements", *Perspectives on topical foreign direct investment issues*, No. 174, Columbia Center on Sustainable Investment, 23 May 2016 <http://ccsi.columbia.edu/files/2013/10/No-174-Zhang-FINAL.pdf>

B&R projects: what are the risks?

Change in macroeconomic conditions is a major challenge facing B&R projects.

Economic risk

Economic risk resulting from changes in macroeconomic and geopolitical circumstances is one of the major challenges facing B&R projects. Over 70% of the B&R countries are emerging or developing markets, and they are vulnerable to external shocks, including weakening global demand, and currency and commodity price volatility. Since the US Federal Reserve tightened monetary policy in late 2015, the exchange rates of many B&R currencies have come under pressure. In some countries non-performing loans have ticked higher. High inflation rates and efforts to defend currencies have led to pro-cyclical tightening of monetary policy stances (eg, in Azerbaijan, Kazakhstan and Russia). This highlights the vulnerability of many Chinese companies taking part in B&R projects to the economic variances of the host countries in which they operate.

B&R brings a risk of inefficient and systematic over-investment.

The governments of many B&R-participating countries see the Initiative as a source of finance and development to support their countries' economic growth. In such an environment, there is a risk of inefficient and systematic over-investment in projects that would otherwise not be economically viable. There is a risk to public finances if, for instance, governments take on excessive debt in order to facilitate B&R projects. A rush of construction could also strain the local labour market and increase inflation. And in the long term, to the extent that funds are diverted from other social needs (eg, education), this could have implications on the long-term growth potential of B&R countries.

Cross-border B&R projects are prone to regulatory risks.

Regulatory risk

B&R countries have different legal and regulatory environments, some of which are not well established. There is concern among businesses involved in B&R projects about the level of regulation at the host market, regional and international levels. For example, energy cooperation is a key goal of B&R. At the same time, environmental issues are of increasing concern. Although many B&R countries have legislation to address environmental concerns, to date local enforcement of such laws has not always been robust. This can put natural resources-related projects under international scrutiny, which can involve legal costs for, and reputational damage to, the parties involved.

Local labour quota requirements in a few B&R countries expose Chinese firms to the risk of delay and cost overshoot.

Local labour regulations may also expose companies involved in construction in B&R countries to the risk of delay and cost overruns. Historically, Chinese state-owned enterprises operating overseas have had a tendency to retain only Chinese-speaking management and hire Chinese construction workers. This has raised hostility among host market local communities, leading some governments to introduce quota rules. For instance, in Turkmenistan, at least 70% of those hired to work on a B&R project must be local employees. And Uzbekistan mandates that Chinese companies can only send management personnel, not labourers from China, to work on a project in the country. These measures can reduce community grievances, but they also expose the investing firms to local labour market dynamics.⁵⁴

B&R has the potential to improve regional prosperity and reduce unrest.

Lastly, the B&R Initiative will promote prosperity in the participating countries and lead to more employment, which hopefully will reduce societal discord in countries with high unemployment rates. For foreign companies involved in B&R, prioritising the interest of local communities will be key to the success of their ventures.

⁵⁴ S. Lain, "China's Silk Road in Central Asia: transformative or exploitative?", *FT.com*, 27 April 2016, <https://www.ft.com/content/55ca031d-3fe3-3555-a878-3bcfa9fd6a98>

Risk management and opportunities for commercial insurers

Insurance and reinsurance will play a key role in B&R projects.

The potential risks and rewards from B&R projects are massive. The use of insurance and reinsurance in risk management will gain ground as more projects roll in. Insurers and reinsurers should conduct enhanced political and country risk assessment, and counterparty due diligence when supporting a particular B&R project. There are opportunities for insurance products that provide protection against public obligor non-payment, expropriation/contract repudiation, various forms of political violence, and currency inconvertibility/transfer restrictions. However, insurers need to be in a position to independently assess the associated risks of a given project, as well as any secondary risk factors specific to the insured (eg, track record/experience, relationship to domicile and host country governments etc). Project reinsurers will need to be mindful of per risk, per obligor and per country risk accumulations.

Road construction projects are exposed to natural catastrophes.

Risk and insurance opportunities in B&R during construction phase

Road construction will be a major part of B&R transport infrastructure projects. Roads are constructed in open areas and spread out over vast distances and are prone to damage from natural catastrophes, particularly flood and earthquake. Road construction risks become more complex if they include bridges, underpasses and tunnels. There is a risk of third-party liability due to bodily injury and damage to surrounding buildings or facilities. Road construction projects can be covered by contractors-all-risks (CAR) insurance under the engineering line of business.⁵⁵

Port construction is complex and involves several risks ...

Port construction will also attract maximum investments, especially in Southeast Asia. Port construction is a long and complex process involving construction of various constituent parts such as container handling terminals, controlling facilities and warehouses for cargo storage. Natural world perils can cause serious damage to property during the construction phase, and significant third-party liability exposures come with the use of heavy lifting and handling machinery. Moreover, ports are built over a large area and may cause displacement of people and settlements, which could lead to political risks in the form of strikes, riots and terrorism. Environmental impairment is another risk factor, given potential damage to sensitive marine ecosystems.

... which are covered by a combination of insurance policies.

Port construction is also covered by CAR policies. The values involved in port construction are high, and marine and delay in start-up (DSU) covers are necessary to indemnify for losses during transportation of project cargo to the construction site, and the resultant financial losses caused by delay in start-up of a project.⁵⁶ Advance loss of profits (ALOP) cover is required to insure against financial losses caused by delay in operation of port due to losses in the construction phase.⁵⁷ Environmental liability risks are covered by environmental impairment liability policy, under the liability line of business.

⁵⁵ CAR is an all-risk policy with named exclusions. CAR policy insures civil construction projects against material damage and third party liability with option to buy various add-on covers.

⁵⁶ Marine insurance and DSU are both part of the marine line of business. DSU policies are usually issued in conjunction with a marine general cargo policy, and not as standalone policies.

⁵⁷ ALOP is part of engineering line of business. Similar to DSU, ALOP policy is usually not issued on a standalone basis and must be taken in conjunction with a CAR/EAR policy.

Risk management and opportunities for commercial insurers

The construction and testing of power and energy projects also carries significant risks.

It is estimated that power and energy projects will attract close to one-fourth of the total B&R investments through 2030. This typically involves construction of oil pipelines, refineries, power plants and T&D lines. Losses for power plants can occur in the testing/commissioning phase when different components constructed separately are tested in an integrated manner.⁵⁸ Construction in the energy sector is usually covered under erection-all-risk (EAR) insurance.⁵⁹

Pipeline projects are subject to the risks of malicious damage, theft and natural perils.

Pipeline projects are vulnerable to the uncertain political situations and risk of terrorism in some of B&R countries.⁶⁰ Much of the material used in the construction of pipeline is often stored in unprotected settings, and there can often be loss through theft. Depending on the terrain, there will often be need for excavation, especially for underground pipelines, and this can cause subsidence. Natural perils like floods and earthquakes can also cause serious damages along the pipeline project sites.

Transmission and distribution lines are vulnerable to the risk of theft, natural hazards, and bodily injury.

B&R power plant projects require T&D lines insurance to cover the risks involved in erecting towers and building sub-stations. There is also theft risk as the T&D lines themselves use expensive copper wire. There is third-party risk from surrounding property damage and bodily injury, especially when erecting towers in densely populated areas. Wind and ice formation are major natural hazard exposures, and so too are lightning and flood, which can cause serious damage to transmission and distribution infrastructure. The dangerous nature of work involved in building and maintaining power plants and transmission and distribution lines means that cover for employers' liability losses is also needed.

Wind, solar and hydro power plants will need dedicated risk protection during the construction phase.

Collision is a major risk during construction of wind power plants, because it can cause serious damage to wind turbine rotor blades. Lightning is another major loss factor, due to the height of wind turbines and open terrain. Construction of solar power plants involves laying large photo voltaic cells in open areas. These cells are fragile and can be damaged by wind, flood and lightning, and also during transportation to project site. Hydro power plants include dam construction, which is a complex process and can entail people displacement. Flood and water damage is also a significant risk. Furthermore, there can be third-party property damage and environmental liabilities.

⁵⁸ Design defects or other flaws can cause a section of the plant to interact in an unexpected manner and damage either that part and/or the interacting parts.

⁵⁹ EAR policy is similar to CAR but it is issued to cover projects where significant machinery erection and installation is involved.

⁶⁰ Political risk in construction projects is usually not covered under a CAR or EAR policy. However, it can be covered under a separate policy.

B&R projects outside of China could generate an estimated USD 14 billion of commercial insurance premiums in the construction phase by 2030.

The premium impact: engineering, marine and liability insurance

The B&R projects outside of China will generate an estimated USD 14 billion of commercial insurance premiums in the construction phase until 2030. Engineering and marine insurance stand to benefit most (see Table 4). Demand for one-off engineering and marine insurance will come during the construction phase of projects, followed by demand for ongoing property cover once projects are up and running.

Table 4

Estimated commercial premiums generated by B&R construction projects outside China up to 2030, USD billion

Commercial insurance lines	Total Overseas	Southeast Asia	Mongolia & Russia	South Asia	Central Asia	Middle East	CEE	Africa
Construction-phase								
Engineering	10.2	3.9	1.2	1.5	0.8	1.0	1.1	0.7
Transportation	3.1	1.1	0.5	0.5	0.2	0.3	0.3	0.2
Energy	2.4	1.0	0.3	0.3	0.2	0.3	0.2	0.2
Others	4.7	1.8	0.5	0.7	0.4	0.5	0.6	0.3
Marine (general cargo)	2.9	1.1	0.3	0.4	0.2	0.3	0.3	0.2
Marine*	0.5	0.2	0.1	0.1	0.0	0.1	0.1	0.0
Liability/PA**	0.4	0.2	0.0	0.1	0.0	0.0	0.0	0.0
Subtotal	14.0	5.3	1.7	2.1	1.1	1.4	1.5	0.9

Note: *Construction-related marine insurance includes project cargo and cover for delayed start-up. **Liability/PA includes single project professional indemnity, product liability and employer liability/PA. Personal accident can be purchased in lieu of employer's liability, and vice versa.

China has not yet completed negotiations to get all countries on board for B&R. Also, the average premium rates used to estimate the potential premium volumes are based on broad assumptions and high-risk scenarios.

Source: Swiss Re Institute.

Risk management and opportunities for commercial insurers

Of those, more than USD 10 billion will likely be engineering premiums.

Engineering insurance during construction

B&R-driven demand could generate additional engineering premiums of more than USD 10 billion for insurers in China and elsewhere through 2030. There will be construction of transport and power infrastructure across the B&R region, with the largest share of resulting insurance opportunities coming from Southeast Asia.

Table 5

Exposure by risk and project type

Project/Risks	Transportation projects				Power and energy projects					
	Roads	Bridges	Ports	Airports	Gas Pipelines	T&D Lines	Hydro Power	Solar Power	Thermal Power	Wind Power
Fire	Low Risk	Low Risk	Low Risk	High Risk	High Risk	Low Risk	Medium Risk	Medium Risk	High Risk	High Risk
Explosion	Low Risk	Low Risk	Low Risk	Low Risk	High Risk	Low Risk	Low Risk	Low Risk	High Risk	Low Risk
Subsidence	High Risk	High Risk	High Risk	Medium Risk	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk
Flood	High Risk	High Risk	High Risk	High Risk	High Risk	High Risk	High Risk	High Risk	Medium Risk	Low Risk
Storm (Wind)	Low Risk	Medium Risk	Medium Risk	Low Risk	Low Risk	High Risk	Low Risk	High Risk	Low Risk	High Risk
Earthquake	Low Risk	Medium Risk	Medium Risk	Low Risk	Medium Risk	Low Risk	High Risk	Low Risk	Medium Risk	Low Risk
Lightning	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Medium Risk	Low Risk	Low Risk	Low Risk	High Risk
Terrorism	Low Risk	Low Risk	Medium Risk	High Risk	Medium Risk	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk
Theft	Low Risk	Low Risk	Low Risk	Low Risk	Medium Risk	Medium Risk	Low Risk	Low Risk	Low Risk	Low Risk
Third Party Liability	Low Risk	Low Risk	Low Risk	High Risk	Low Risk	Medium Risk	Medium Risk	Low Risk	Medium Risk	Low Risk
Political Risk	Medium Risk	Low Risk	Medium Risk	Medium Risk	Low Risk	Low Risk	Low Risk	Low Risk	Medium Risk	Low Risk
Employer's Liability	Low Risk	Low Risk	Medium Risk	Low Risk	Low Risk	High Risk	Medium Risk	Low Risk	Medium Risk	Low Risk

■ High Risk ■ Medium Risk ■ Low Risk

Note: All Nat Cat risks (EQ, Flood, Storm) depend on location. This heat map is based on the assessment by internal experts within Swiss Re.

Source: Swiss Re Corporate Solutions, Swiss Re Institute.

The total marine insurance premium opportunity is an estimated USD 3.4 billion through 2030.

Marine insurance

Marine insurance covers the losses from damage to ships, cargo and associated third-party liabilities. Project cargo insurance covers risks associated with the transportation of large, heavy, high-value or critical pieces of equipment needed for a particular B&R project. The opportunity from general cargo insurance will be around USD 2.9 billion in the years to 2030, much from Southeast Asia, while marine DSU cover will generate another estimated USD 0.5 billion (total premiums of USD 3.4 billion).

Additional liability premiums are estimated at USD 400 million.

Liability insurance/Personal Accident

The overall business opportunity for liability insurance from B&R projects outside of China to 2030 is estimated to be USD 400 million in premiums. B&R countries are mostly emerging markets with different laws and judicial systems, and there is likely to be growing demand for public liability, product liability and employer's liability insurance from project owners, operators, vendors and other stakeholders. Sometimes personal accident insurance is also purchased, in lieu of employer's liability insurance.

Infrastructure projects are vulnerable to a number of risks in operational phase...

... which can be covered by different forms of property insurance.

B&R will boost demand for property insurance as well.

Risk and insurance opportunities in B&R during operational phase

Infrastructure is vulnerable to a number of risks during operational phase. For example, the risks involved in operating roads are complicated given the vast expanses of areas covered, which makes it difficult to monitor and control exposures. In low lying areas, flood and water damage are big risks, especially during rainy seasons. Port authorities and terminal operators also face a variety of risks during operational phase, ranging from damage to vessels to potential losses caused by port blockages and environmental pollution, as well as liability caused by oil spills.

Broadly, infrastructure in operational phase is covered by property insurance, which provides cover for physical damage during the policy period. Covers normally not included are protection against terrorism, cyber risks and contingent business interruption. These can be included either as add-on covers or as separate policies. A port package policy provides property, engineering and liability insurance – the different risks involved in port operation – in one contract. Airports can be similarly insured under a package policy that combines various covers.⁶¹

Operational phase: Property

B&R will boost demand for property insurance. Moreover, the relocation of manufacturing plants to B&R countries, mostly emerging markets, from China will further drive demand for property protection because the risk management is more complex.

Table 6

Commercial premiums generated by B&R projects outside of China in operational phase, up to 2030, USD billion

Commercial insurance lines	Total Overseas	Southeast Asia	Mongolia & Russia	South Asia	Central Asia	Middle East	CEE	Africa
Operational-phase								
Property	13.5	5.3	1.3	1.7	1.0	1.3	2.0	0.8
Transportation	0.9	0.3	0.1	0.1	0.0	0.1	0.1	0.1
Energy	7.5	3.1	0.7	0.8	0.6	0.7	1.0	0.5
Others	5.1	1.9	0.5	0.7	0.4	0.5	0.9	0.3
Total	13.5	5.3	1.3	1.7	1.0	1.3	2.0	0.8

Note: China has not yet completed negotiations getting some countries on board for the B&R Initiative. Also, the average premium rates used to estimate the potential premium volume are based on broad assumptions. Therefore, the premium figures in Table 6 are indicative and do not suggest a definitive premium volume.

Source: Swiss Re Institute.

B&R projects, after completion, could generate USD 13.5 billion of property insurance premiums by 2030.

The B&R Initiative will generate an estimated USD 13.5 billion in property insurance premiums by the year 2030. More than half will come from cover for power plants and other energy-related projects in operational phase. Fire and explosion are major risks for all these facilities. These plants can be covered under a package, similar to ports and airports. Oil and gas pipelines may suffer damage due to earthquakes, floods and subsidence. Pollution from pipeline spillage may cause huge liability risk, while wind and flood is a major risk factor for power distribution towers. Damage to towers can result in electricity interruptions and may trigger loss-of-profit claims.

⁶¹ Port package and airport package policy can be a part of marine and aviation line of business respectively. For the sake of simplicity, this report classifies them as part of property line of business.

Conclusion

B&R will boost demand for commercial insurance.

Demand for commercial insurance will increase as a result of the B&R Initiative. There has already been tangible progress in B&R. For example, China has signed more than 30 bilateral cooperation agreements with the countries along the B&R route, and it is estimated the Initiative will attract USD 5 trillion in total investments in projects in B&R countries outside China by 2030, mostly in transport and energy infrastructure.

The Initiative will also present huge business opportunities around the world and across sectors...

B&R will provide huge opportunities to foreign, regional and local companies in supporting and financing the numerous ongoing, planned and upcoming projects within and outside of China. Companies involved in B&R are exposed to a complex risk landscape and as projects are implemented, the associated challenges will become clearer. This in turn will mean new opportunities for insurers to engage with companies and governments seeking to mitigate the risks involved. Foreign insurers, together with the local carriers, can provide a full range of insurance services to meet the needs of the domestic and regional markets.

...and stakeholders will buy insurance to cover their risk exposures.

The assistance of multinational insurers with expertise in cross-country exposure and alternative risk capability will be a critical part of the risk management strategy for all stakeholders. So much so that B&R projects will generate an estimated USD 28 billion in commercial insurance premiums in countries outside of China in the years to 2030.

In total, B&R is expected to generate USD 28 billion in commercial insurance premiums in countries outside China in the years to 2030.

Demand for engineering, marine and third party liability insurance products will grow strongly during the construction phase of individual projects. During the construction phase, B&R will generate an estimated USD 14 billion in commercial insurance premiums by 2030. Property insurance demand will also rise by around USD 14 billion once projects are up and running (the operational phase).

Appendix

[Description of infrastructure investments estimate methodology.](#)

[B&R-related overseas infrastructure investments by region.](#)

Table 7

Detail of external sources used for infrastructure investments estimate.

Infrastructure investments estimate methodology

This section outlines the methodology used to estimate the infrastructure demand in B&R countries and related commercial insurance premium potential in the period 2015–2030.

The infrastructure investment estimates by region are mainly based on estimates of infrastructure demand (sourced from external studies and estimates provided by central banks and other government agencies (Table 7)), geostrategic importance of a region from the B&R perspective (based on geostrategic location, resource availability and the strategic importance of the region/country for China), and the trade relations of a country/region with China (based on correlation between trade and Chinese ODI).

Reference	Regional focus	Data available and used in this report
ADB	32 Asian developing economies	Estimate of total infrastructure requirement by sector for Southeast Asia, South Asia and Central Asia between 2010 and 2020.
McKinsey	84 countries that account for 90% of global GDP	Estimate of total infrastructure requirement by sector for CEE and Middle East between 2016 and 2030.
The Infrastructure Consortium for Africa	Africa	Estimated based on central government financing data from 42 countries to show how African economies are mobilising their own resources.
Gazprombank	Russia/Global	Estimate of total infrastructure requirement by sector for Russia between 2014 and 2020
Swiss Re urbanisation model	Global/Emerging markets	Swiss Re Institute internal based on urbanisation growth

Source: ADB Institute, McKinsey, the Infrastructure Consortium for Africa, Gazprombank, Swiss Re Institute.

[B&R-related overseas infrastructure investments includes investments with and without Chinese involvement.](#)

Total overseas investment in B&R-related projects are estimates of the value of B&R-related investments with and without Chinese involvement:

- Total overseas investments with Chinese involvement are estimates of China's ODI, overseas contract values in B&R countries, planned B&R projects and infrastructure demand by region and sector, and the strategic importance of a region/country along the B&R route.
- The value of total B&R-related overseas investments without Chinese involvement are estimates based on the locational importance of a region from the B&R perspective, income level of a country, political landscape and China's relationship with that country.

B&R-related overseas infrastructure investments by sector.

Infrastructure investment estimates by sector are mainly based on the estimated demand by infrastructure project type by regions, and the relevance of those projects for B&R.⁶² Here, the “relevance of infrastructure projects for B&R” mainly refers to:

- the degree of correlation between the estimated total infrastructure investment demand by sector and infrastructure required for the smooth functioning of the B&R Initiative; and
- the strategic importance of a region/country for China. B&R is a China-led initiative, and the strategic importance of a region/country along the route is critical to understand how, where and what kind of investment will be made for successful and timely implementation of the Initiative. For instance, Central Asia is a key link between China and Europe, and a majority of infrastructure investments will be in roads and railway to enable smoother, faster and cheaper transportation of goods and services. Similarly, there will be large investments in the energy sector in the Middle East and western Asia to ensure China’s energy security. At the same time, China is investing heavily in CPEC to reduce the transportation time from the Persian Gulf.

Premium estimates are based on insurance penetration and premium rates.

Insurance premiums estimate methodology

The commercial insurance premium estimates (in Table 4 and Table 6) are influenced by two key variables: insurance penetration rates and premium rates. Insurance penetration rates vary across different lines of business. For instance, while project owners purchase 100% engineering cover for the construction phase, only about one-tenth buy single project professional indemnity (SPPI) liability cover to insure against the risk of professional negligence by service providers. Premium rates vary according to line of business and the characteristics of individual projects. For instance, premium rates for general cargo insurance depend on the type of products being shipped, the destination and transportation vehicle. Premium rates for property insurance depends upon occupancy, earthquake zone, flood zone etc.

⁶² The infrastructure investments are categorised into four sectors: infrastructure, agriculture, cultural exchange & tourism, and others. The assessment of infrastructure requirements by region as well by sector are based on estimates from external studies.

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