PwC CEE | B&RWatch

China and Belt & Road Infrastructure

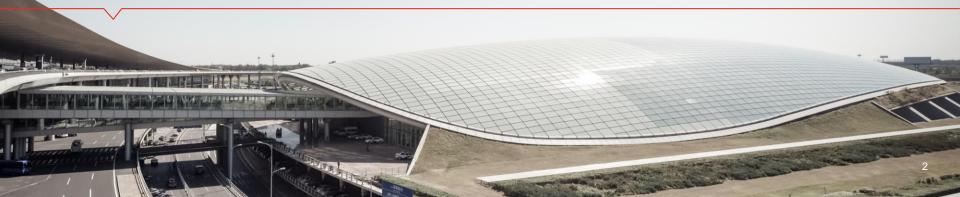
CEE transport infrastructure





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Executive Summary

1. Belt & Road overview

Un veiled in October 2013, the Belt & Road (B&R) initiative is a development framework promoting Eurasian trade and integration

- A terrestrial 'Silk Road Economic Belt' and a 'Maritime Silk Road'
- In stitutions supporting the initiative include AIIB
- A vast infrastructural network connecting China to Europe via South, Central Asia and the Middle East

The B&R region spans three continents and includes a total of 66 countries

2. Review of capital project and deal activity in the countries that fall under the Belt & Road Initiative in 2016

Projects and deals generated a com bined \$494bn in value in 2016. A third of B&R project and deal value generated in 2016 was in China

B&R GDP growth decelerated in 2016, expanding by 4.6%. B&R growth outstripped global output (3.1%). China's GDP for 2016 came in at 6.7%, growth outperformed expectations in Q4

2016 saw a rise in project dollar value, asgovernments battled to revive growth. Available data points to a drop in M&A 3. CEE transport infrastructure dynamics

In frastructure as the key factor for competitive growth in CEE, but the inadequate in frastructure supply creates a growth barrier in CEE

Fin ancial needs for further transport infrastructure development in CEE has been estimated at EUR 615 bn through 2025

Six technologies that we believe will impact transport infrastructure development: drones, 3D printing, Internet of Things, Augmented Reality, autonomous vehicles and smart cities/grids 4. Outlook

The Belt & Roada Initiative could have significant implications for CEE

Trans-Eurasian rail networks and China Railway Express will dramatically reduce the time between China and Europe & CEE con sumer markets

We see more project an nouncements across B&R in 2017 as governments continue to tackle economic slow down. Many of these will come from China 5. China Business Group in CEE

Central & Eastern Europe integrates the languages and cultures of several countries. To better meet the requirements of clients with varying cultural backgrounds and languages both in China and CEE, we have set up a CBG team in Central & Eastern Europe to provide you with customized services

260 partners, 9000 em ployees to support your investment in CEE. CBG team combines deep un derstanding of Chinese culture with technical skills and language fluency. We have successfully helped Chinese clients entering into CEE market

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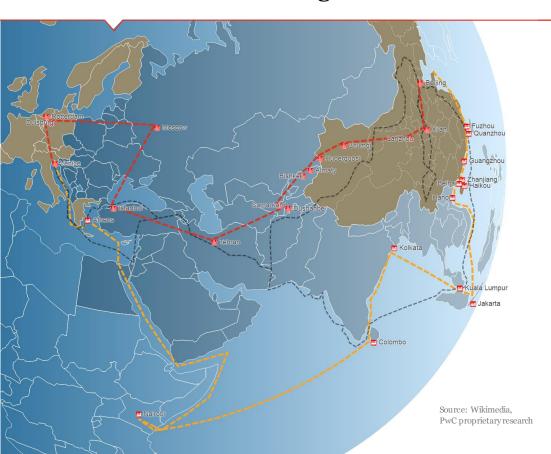
Belt & Road overview

Belt & Road: resurrecting the ancient silk route

The B&R region spans four continents and includes a total of 66 countries... from Lithuania to Indonesia

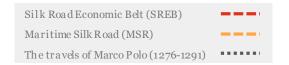


Belt & Road: resurrecting the ancient silk route

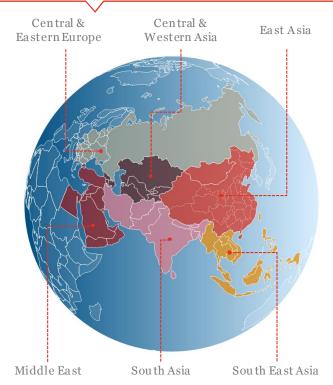


Unveiled in October 2013, the Belt & Road (B&R) initiative is a development framework promoting Eurasian trade and integration

- Includes two complementary components: a terrestrial 'Silk Road Economic Belt' and a 'Maritime Silk Road'
- Underscores China's drive to play a greater role in global affairs. Institutions supporting the initiative include Asia Infrastructure Investment Bank (AIIB)
- A cornerstone of the proposed initiative is a vast infrastructural network connecting China to Europe via South, Central Asia and the Middle East
- Seeks to unlock investments for priority projects in a number of 'economic corridors'



The B&R region spans three continents and includes a total of 66 countries... from Lithuania to Indonesia



Please contact Guillaume Barthe-Dejean for further methodological clarifications at guillaume.barthe-dejean@hk.pwc.com

Central & Western Asia

Armenia Azerbaijan Georgia Kazakhstan Kyrgyzstan Tajikistan Turkmenistan Uzbekistan

East Asia

China (incl. Hong Kong and Macau) Mongolia

South Asia

Afghanistan Bangladesh Bhutan India Iran Maldives Nepal Pakistan Sri Lanka

Central & Eastern Europe

Albania	Belarus	Bosnia	Bulgaria
Croatia	Czech Republic	Estonia	Hungary
Latvia	Lithuania	Macedonia	Moldov a
Montenegro	Poland	Rom ania	Russia
Serbia	Slovakia	Slovenia	Ukraine

South East Asia

Brunei	Cambodia	In don esia	Laos
Malaysia	My anmar	Philippines	Singapore
Taiwan	Thailand	Vietnam	

Middle East

Bahrain	Egy pt	Iraq	Israel
Jordan	Kuwait	Lebanon	Om an
Palestine	Qatar	Saudi Arabia	Syria
Turkey	UAE	Yemen	

02

Review of capital project and deal activity in the countries that fall under the Belt & Road Initiative in 2016

Projects and deals generated a combined \$494bn in value in 2016

A third of B&R project and deal value generated in 2016 was in China

Average project size in Chinarose by 14% in 2016



A word on assumptions, definitions and data compilation methodology

Our analysis relies on data from proprietary and publicly available data sources

Corporate disclosures are not an exact science. Statistics contained in this presentation may differ from previous PwC press releases and external data sources, as data is constantly updated and as deals / projects are confirmed and disclosed. Sometimes at a considerable lag

Our analysis should be viewed as a 'best-effort' synthesis of trends and available data points, at a particular moment in time

- We have reconciled, supplemented and enriched our analysis with deals and project datasets from Thomson ONE, Bloomberg and BMI
- We consider only deals that are completed in any given year.
 We consider only projects that are announced in any given year
- We consider all deals and projects in the B&R geographical grouping and exclude outbound flows to non-B&R countries
- All prices series are in nominal terms unless stated otherwise

Our in-house definition of infrastructure and industry classification standards

Our in-house project definition comprises four key sectors (utilities, transport, construction and social). Our deals definition includes a further three sectors (telecommunications, energy and environmental)

We group all project and deals sub-sectors according to the Global Industry Classification Standard (GICS)

Utilities	Transport	Construction	Social
Electricutilities	Airport services	Construction	Education
Gasutilities	Highway & rail	Real estate	Healthcare
Waterutilities	Marineports		Gov ernment

Telecoms	Energy	Environment
Alternative carriers	Storage	Waste
Integrated services	Transportation	management

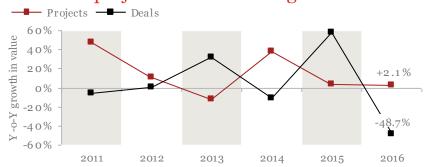
2016 saw a rise in project dollar value, as governments battled to revive growth. Available data points to a drop in M&A

- Regional growth moderated in 2016 on the back of weaker Chinese demand
- Rising oil and commodity prices fed into construction costs, heaping further pressure on sector profitability
- Public expenditure on projects remained strong, however.
 China's 'silk road' is materializing and driving investments across B&R
- Available data suggests infrastructure project spend tends to be counter-cyclical, correlating negatively with economic activity. M&A activity is driven by investor confidence and is typically pro-cyclical
- M&A activity points to a decline in volume and dollar value. Disclosures for 2016 are however still trickling in, meaning that there is still (limited) scope for more upside

Deals and project dollar value vs. B&R GDP growth



Deals and projects tend to move against one another



Focus on new projects saw value rising 2.1% at the expense of M&A activity

Projects: countercyclical strength

- Provisional numbers for 2016 see total new announced project value rising 2.1% to roughly US\$400bn
- Final numbers could see 2016 value rising by as much as 10%

Total project dollar value in B&R markets



Deals: pro-cyclical weakness

- Economic headwinds were not as kind to deal activity, with available data pointing to a 49% fall in dollar value
- The drop partly reflects peak levels reached in 2015, when deal activity rose to a record \$180bn
- China domestic deal value is also down, according to available data, but up 15% from 2014

Total deals dollar value in B&R markets

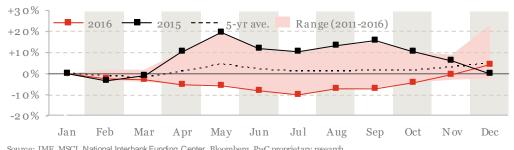


Equity infrastructure underperformance reflects downward M&A trend

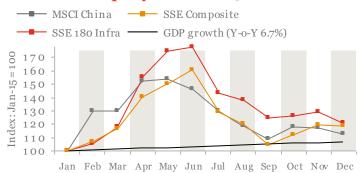
A subdued performance

- After two bumper years that saw the Shanghai infrastructure index surge by 85% between 2014-2015, the index rose only by a modest 9.9% in 2016
- Infrastructure equities trended at an average 4.1 percentage point (pp) discount to the Shanghai composite index, an average 6.9 pp discount to GDP, and a 12 pp discount to the MSCI China Index

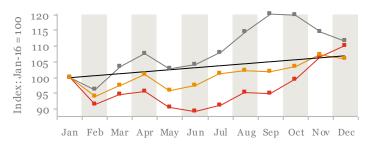
SSE 180 infrastructure index vs SSE composite



After a bumper year in 2015...



...infra equities underperformed in 2016



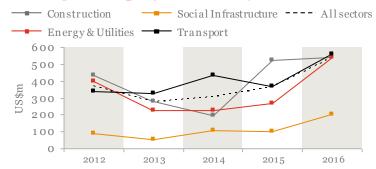
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Rising average project value points to a 'flight to quality'

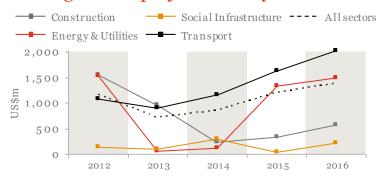
A multi-year trend of rising value

- Available data sees average project value rising 47% in B&R and 14% in China, and suggests more value was generated despite an absolute drop in projects
- The trend was at play in all sub-sectors, with noteworthy rises in utilities and transportation
- Available data suggests average value has been on the rise since 2013, with a CAGR of 33% for B&R and 27% for China
- Rising average project value is the flipside of growing uncertainty and feeble growth in regional markets, with investors and public authorities pooling investments away from riskier, non-essential ventures

Average B&R project value by sector

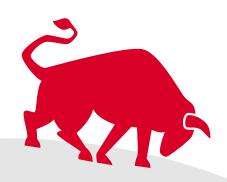


Average China project value by sector





Government policy across B&R was bullish for projects but bearish for deals



M&A bears

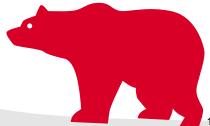
- Monetary policy is fuelling lending and likely generating a real estate bubble. This weighed on investor sentiment
- Real lending rates fell but were high for much of 2016
- The yuan weakened in 2016, moderating China's appetite for foreign acquisitions. This was compounded by lengthy regulatory approvals

Project bulls

- Monetary policy in China remained accommodative. Base rates hovered at their lowest level in two decades. New loans reached record highs
- Fiscal policy continued to fuel growth in China and B&R
- GDP growth rates soften across the region. This was a bullish driver for projects in 2016 as governments scrambled investments to offset declines

Sagging fundamentals

- Construction costs bounced backon rising crude and steel. This was bearish as reflected global markets and domestic production cuts more than rising domestic demand
- Loosening fundamentals. Freight volumes, port throughput and industrial power demand fell. Overcapacity drove down fixed asset investments
- Sovereign debts suffered a couple of downgrades in 2016 (although the picture is broadly stable)



B&R GDP growth moderated in 2016 but trended high above global output. China exceeded expectations in Q4

A challenging growth environment

B&R GDP growth decelerated in 2016, expanding by 4.6% against 5.2% in 2015 and a 5-year average at 6.1%

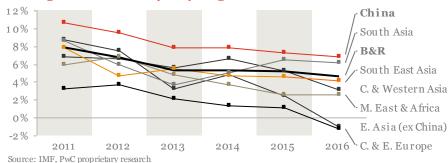
- In 2016 South Asian output fell for the first time in three years. The IMF downgraded India on the back of Modi's rupee note ban
- Countries with trade exposures to China have seen cooling demand for exports

China is slowly bottoming out of its multi-year decline

B&R growth outstripped global output (3.1%) and that of advanced and emerging groupings at 3.4% and 3.6% respectively

- China's GDP for 2016 came in at 6.7%, within the government 6.5-7% target range. Growth outperformed expectations in Q4
- IMF forecasts have been firming up since Oct-15
- The Caixin PMI registered its fastest rise in 3 years in December

B&R growth rates by key regions



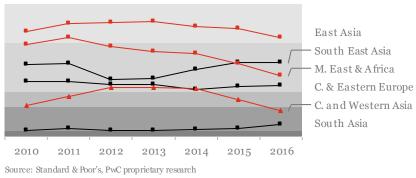
Trending GDP forecasts for China

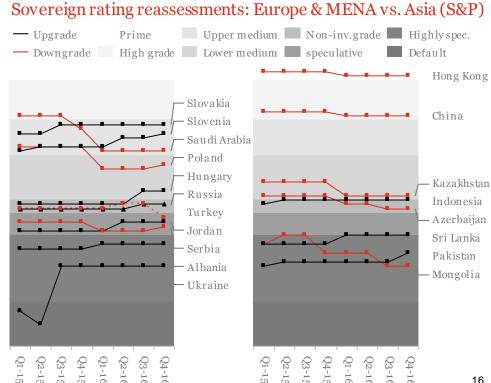


A few downgrades did not destabilize the B&R sovereign debt environment

- Europe and MENA saw some downgrades on the back of political instability (e.g. Turkey and Poland) but was more upbeat overall. Russia was upgraded from BB+ negative to stable in September (S&P)
- Asia saw some downgrades in Central Asia, but the credit environment was otherwise stable

B&R regional ratings crude average (S&P)





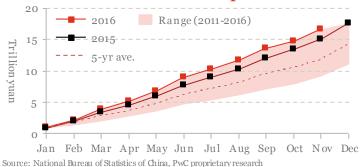
China's fiscal stimulus announcements and infrastructure spending had another bumper year in 2016

Infrastructure remained a policy lever of choice

Total spending is expected to reach 20 trillion yuan this year, which is more than 10% over that of 2015 and 40% more than the 5-yr average

- Beijing announced a series of fiscal stimulus measures in infrastructure, including 4.7 trillion yuan package for transportation in June
- In December, the Government announced plans to invest 3.5 trillion yuan in railway networks from 2017-2020 to connect 80% of China's major cities
- We believe infrastructure spending growth will come in at 14% for 2016, which is down slightly from an average five-year growth rate at 14.5%
- Infrastructure spending will continue to grow robustly, howeverwe expect its relative share to decelerate over time

Cumulative Government expenditure



Infra spending growth remains robust



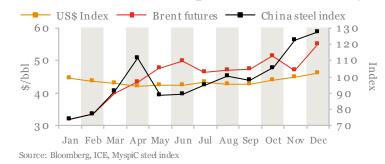
Construction costs rise on the back of materials and wage inflation

Input costs recover from multi-year declines

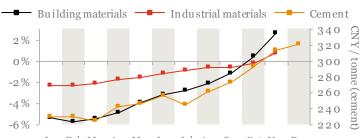
Rising input prices increased pressure points on the infrastructure value chain

- Crude prices rebounded on the back of global tightening fundamentals and the US dollar trended low up until the December Fed rate hike
- Domestic steel prices surged on construction demand, shrinking inventories and Beijing removing 45 million tonnes in capacity.
 Rebar prices rose higher still on Beijing moving to close coal mines
- Indices for industrial and building materials bottomed out in 2016 and expanded for the first time in five and three years respectively
- Nine provincial regions raised minimum wages in 2016. Construction wages will have risen somewhere between 5-8% in 2016

Crude and steel are up 70% since January



Key construction costs are rising



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Source: National Bureau of Statistics of China, Bloomberg, PwC proprietary research

CEE transport infrastructure dynamics

In frastructure is the key factor for competitive growth in CEE, but the inadequate infrastructure supply creates a growth barrier in CEE

EUR 615 bn is needed to develop the transport infrastructure in CEE

How to build for the future? The impact of technology and a digital future on transport infrastructure

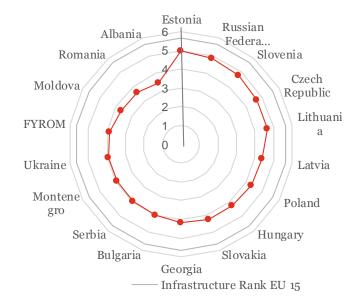


Infrastructure as the key factor for competitive growth in CEE, but the inadequate infrastructure supply creates a growth barrier in CEE

Business leaders still believe that inadequate infrastructure is a substantial barrier to business growth in CEE

- In the WEF Global Competitiveness Report, CEE ranks significantly lower in the infrastructure index than Western Europe
- Infrastructure is the 4th most significant barrier for growth in Bulgaria, and 7th in Poland and Romania
- Poland world's 36th most competitive country, ranks only 53th when it comes to infrastructure

GCI (2016/2017) – Infrastructure Rankin CEE

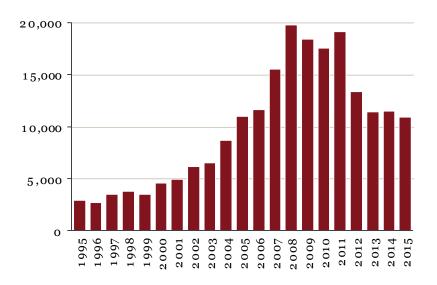


Source: WEF, PwCproprietary research

With the support of EU, CEE Infrastructure has significant progress to date, and there is still ground to cover

- Almost EUR 210 bn has been spent on transport infrastructure in CEE EU Member States over the past 20 years. This equals to over EUR 100 spent per capita in each year
- Over EUR 150 billion has been spent from EU Structural Funds only
- Additional money made available from the Connecting Europe Facility and the European Investment Bank who invested almost EUR 30 billion in transport in CEE over last 10 years
- European Fund for Strategic Investment (part of Juncker Plan) plays increasingly important role in CEE – by mitigating risks and offering attractive financing

Infrastructure Investments in EU11 (EUR million)

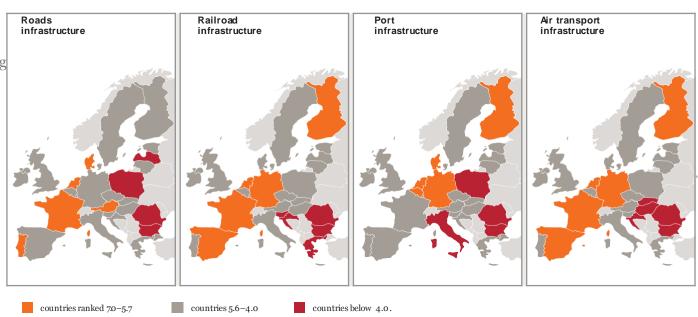


Source: OECD, PwC proprietary research

However, CEE needs further investments to reach the EU15's level of competitiveness

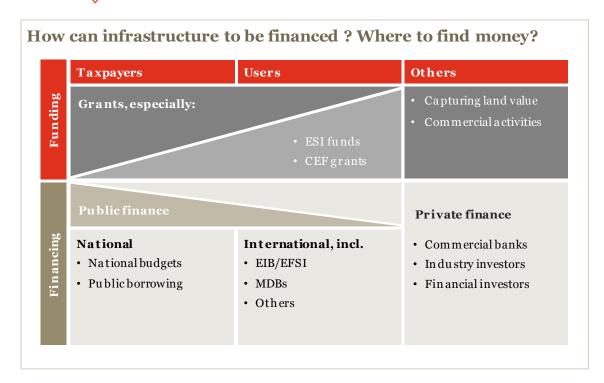
Quality of transport infrastructure

• After decades of underinvestment, ploughing money into new routes and modernising and maintaining the existing transport system across the region remains crucial for achieving sustainable economic growth and maximising the region's competitive potential



Rating based on a survey by the World Economic Forum, using a scale from 1 (extremely underdeveloped) to 7 (extensive and efficient). Source: World Economic Forum

EUR 615 bn is needed to develop the transport infrastructure in CEE



Financial needs for further transport infrastructure development in CEE* has been estimated at EUR 615 bn through 2025, which equals to just below EUR 170 to be spent per

capita in CEE each year.

Source: PwC proprietary research

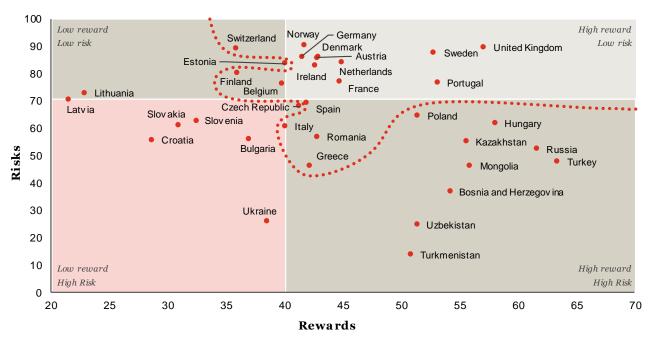
^{*} Broadly defined CEE, including Balkans

CEE region is land of opportunity, but what is the balance of risk and reward?

CEE risk / reward balance is generally less attractive than in Western Europe

■ This chart makes it clear that CEE countries will have to compete with Western European economies, which are generally perceived as more attractive. Still, the scarcity of "ready-to-finance" infrastructure projects globally and the enormous liquidity awaiting investment opportunities might play in favour of CEE, provided there is a pipeline of well-prepared projects, and risks are mitigated

Infrastructure Risk-Reward Index



How to approach financing—key recommendations

Commercially attractive, revenue-generating projects, with a sound financial rationale. Such projects include:

- Infrastructure of critical importance to the European transport network
- Brownfield projects upgrade / enhancement of infrastructure capacity and performance, with proven traffic / revenue generation potential
- Investment with relatively smaller CAPEX component in relation to commercially attractive service provision (e.g. terminals, toll roads with attractive traffic forecast)

2. Projects of key economic impact with lower financial returns. Such projects include:

- Large greenfield projects with unproven traffic and revenue generating potential
- Several cross-border connections (esp. railways) which are necessary as the relieve key bottlenecks in networks
- Inland waterway navigability improvements which typically require significant financial investment, including significant environmental works
- Some large-scale projects developed by smaller or poorer countries e.g. Rail Baltica (Baltic States with project value of EUR 5.9 billion) or the Gdansk-Odessa Motorway (Ukrainian section)

Global private capital already in CEE

Some of the **global top 10 construction companies** as VINCI, Skanska, Hochtief and Bouygues and the largest infrastructure funds have **invested billions of euros in key transport projects in Poland, Slovakia, Hungary and Croatia**

Examples of privately financed motorways



A1 and A4 in Poland

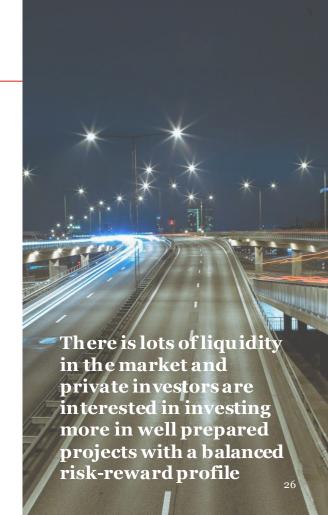


R1 and D4/R7 Slovakia



M5 and M6 in Hungary



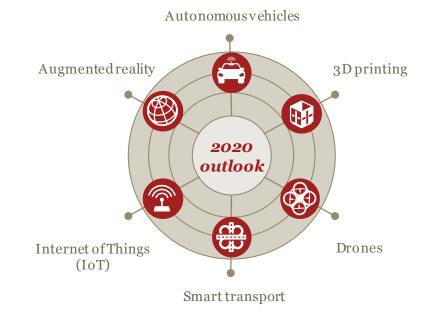


How to build for the future? The impact of technology and a digital future on transport infrastructure

75% of the infrastructure that will exist in 2050 does not exist today

 New technologies will impact not only the way transport infrastructure will be designed, built and operated, but also the demand for transport services

Six technologies will impact transport infrastructure development



Source: PwC proprietary research

Outlook

The Belt & Road In itiative could have significant implications for CEE

Belt & Road and CEE countries

- M&A in frastructure could rebound in 2017

More broadly, we see five key themes shaping the outcome for 2017



The Belt & Roada Initiative could have significant implications for CEE

- Of the six economic corridors outlined in the B&R initiative, the most relevant for CEE and the rest of Europe is the New Eurasian Land Bridge, which connects China to Europe via Central Asia, past Russia and through to the Netherlands. China plans to strengthen connectivity and speed up freight transport along this route
- The initiative offers new opportunities to broaden and deepen trade and investment cooperation between China and CEE.
 Moving from being export destinations to becoming investment partners in production, technology, finance and infrastructure development, the CEE countries are likely to see new trade patterns emerge with China

Proposed routes of the Belt and Road initiative



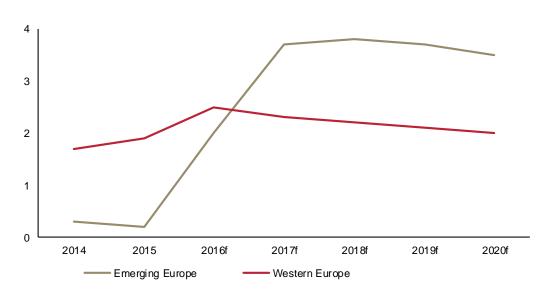
Source: PwC proprietary research

CEE is expected to outpace Western Europe over the next 5 years with construction market growth of 3.1%

CEE is expected to outpace Western Europe over the next 5 years with construction market growth of 3.1%. This creates good opportunities for domestic and international companies and investors

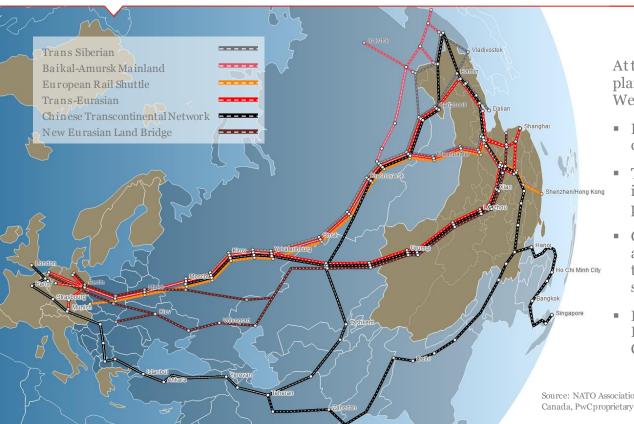
Construction Market Growth

Construction Industry Value, Real Growth, % Chgy-o-y



Source: European Commission, PwC proprietary research

Trans-Eurasian rail networks and China Railway Express will dramatically reduce the time between China and Europe & CEE consumer markets



At the heart of China's Belt & Road initiative is a planned network of railways connecting China to Western Europe & CEE

- Beijing hopes to complete this project within a decade
- The planned rail network will deepen economic integration in some of the word's most densely populated regions
- Once completed, it will provide a high capacity alternative for bulk-consumer good transportation. It will offer valuable freight time savings over ship transport
- In January this year a freight train arrived in London after completing a 12,000 km fro Yiwu, China, via Kazakhstan and Russia and France

Source: NATO Association of Canada, PwCproprietary research

Belt & Road and CEE countries - M&A infrastructure could rebound in 2017

China: domestic and inbound

We see potential for a rebound in domestic activity driven by a maturing and consolidation of the Chinese economy

- Infrastructure will outperform on countercyclical spending and as investors shun manufacturing and industrial sectors with lower potential for organic growth
- We do not expect a sharp rise in inbound M&A given rising interest rates and the accumulation of risks in overseas markets. Outbound restrictions will boost domestic M&A
- Key signpost for 2017 is the Communist Party 19th Congress.
 Investors will weigh up the risk of new regulations

B&R and China outbound deals

New regulation and capital controls will act as a drag on overall China M&A outbound transactions

- The infrastructure sector is considered strategic. Transactions will not be subject to inhibitive levels of scrutiny
- Outbound investments that dovetail with strategic objectives will instead be encouraged. Chinese investors with dollar reserves will have an advantage over pure Yuan players

B&R markets will continue to offer riskier but more attractive returns with higher potential for organic growth

- B&R region remains politically volatile, however, and subject to adjustments to external pressures, current account imbalances and currency movements
- Should the risks dashboard deteriorate we could see more sovereign downgrades affecting project economics

We see five key themes shaping the outcome for 2017

Political leadership unveiling ambitious goals

We see more project announcements across B&R in 2017 as governments continue to tackle economic slow down

Many of these will come from China, as Beijing will need to supplement current announced packages to keep up the pace of investment and drive momentum behind its silk road ambitions

A m bitious infrastructure goals bring new challenges for policymakers. Spending will likely run up against budgetary constraints, and, even with the influx of private capital, there may not be enough to meet needs

Future-proofing against obsolescence

Rapid urbanisation, climate change, shifts in global economic power, demographic changes, and technological breakthroughs – can cause even traditional assets to lose relevance quickly

As a result of these trends, in frastructure (which was traditionally seen as a conservative asset class) now faces new risks. To future-proof their infrastructure spending, governments and investors will need new assessments and skills to prepare for emerging opportunities and challenges

Sustainable infrastructure for the long term

We see a growing push to decarbonise economies, implement green construction methods, and make cities more ecologically sustainable

Con flicts will of course arise between the green agenda and con cerns about costs to con sumers. These conflicts will be most apparent in countries where pressures from fast rising populations and urbanisation are the highest

The key question is whether governments prioritise shortterm cost savings over longerterm benefits that come with su stainable development

Commodity-rich regions prioritize infrastructure

B&R Countries rich in natural resources have suffered from the fall in commodity prices, with government budgets taking a hit.

Many of these countries however see infrastructure as a way to maintain growth, support vulnerable sectors of the economy, and eventually transition away from commodity-dependent growth models

We think governments will in creasingly consider in novative private financing options and turn to the private sector to support these plans

CEE is important part of B&R initiative

We do foresee increased Chinese investment in CEE, especially in infrastructure area.

Ch ina investors should monitor the key issues learned from other Chinese and non-Chinese in frastructure investment in CEE, especially on the coor dination of multiple a uthorities, preparation of feasibility study and adopt stakeholder consultation procedures.

China Business Group in CEE

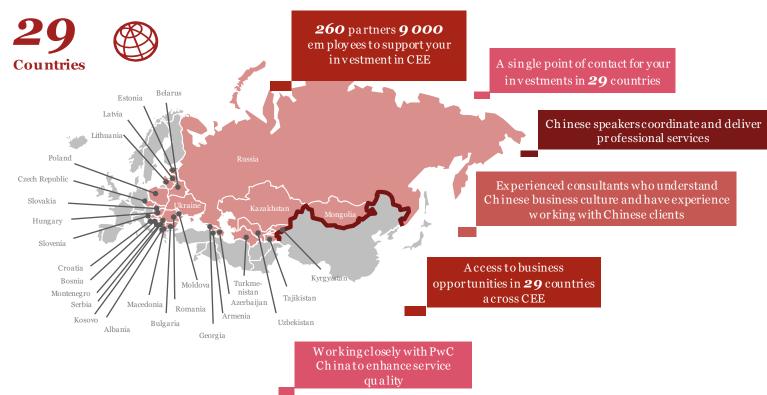
260 partners, 9000 em ployees to support y our investment in CEE

The CBG specializes in the challenges faced by companies with business ties involving China and CEE. We focuses on Assurance, M&A, Tax & Legal and Advisory services

Chinese speakers to support your investment



China Business Group in CEE



Thank You!

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