



China connecting Europe?

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Abstract

The significance of China's Belt and Road Initiative (BRI) for Europe is increasing. The diplomatic initiative "16+1," comprising China and 16 Central, East and Southeast European economies (CESEE), expanded to a "17+1" format in April 2019, when Greece officially joined the cooperation forum. This expansion revived interest in Chinese activities aimed at better physical and digital connectivity in Europe and their effects. The article descriptively shows a geographical division of Chinese infrastructure development activities in Europe: the "17+1" region is targeted more intensively by Chinese construction projects. Moreover, roughly 90% of all construction contracts with the "17+1" region are attributable to connectivity sectors, while Chinese activities in other European regions are more diversified. In Europe, the Western Balkans are expected to economically benefit the most from the BRI, as they show particularly high deficiencies in infrastructure, and so far, have limited access to EU grants. Economic effects of infrastructure projects, however, trickle through European production and supply chains, affecting a larger number of countries than information on projects would suggest. EU initiatives presented since 2018 may help to increase complementarity between Chinese and European infrastructure development plans and reduce associated risks, such as unsustainable debt or new trade barriers arising from increased competition for Chinese investments. The BRI is about to change physical and digital connectivity within Europe, while the EU has yet to become an active player engaging in the initiative, in order to enable improved connectivity in Europe to drive economic convergence and not political divergence.

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The new “17 + 1” shaking Europe awake

Announced in 2013, the Chinese Belt and Road Initiative (BRI)¹ has become a global project, which is extensively discussed by politicians, academics, and the public. It aims to expand and develop infrastructure in the transport, energy, and information and communications technology (ICT) sectors.

The BRI's importance for China's internal development, as well as for its external diplomatic and economic relations, was highlighted during the 19th National Congress of the Communist Party of China in October 2017.² It may be regarded as a starting point of a wider geopolitical connectivity strategy, with the aim and potential to adapt the norms and conventions of the international order—under the weakening leadership of the USA—to Chinese interests (Godehardt 2020). In particular, Chinese digital infrastructure is facing increasing European skepticism. Concerns range from network security over European technological dependency³ to the spread of mass surveillance and new norms in digital rights and protection of personal data.⁴ A survey conducted in 2019 across the EU revealed that only 6% of respondents believe that Chinese companies treat their data responsibly (Bartsch and Laudien 2020). Skepticism is not confined to the ICT sector, though. Chinese involvement in other major infrastructure projects in Europe—such as power plants, ports, or rail links—is also viewed critically, not least because of the concern that countries along the Chinese BRI could turn into client states.⁵

Long-term investments in critical public infrastructure have macroeconomic, political, and security implications. The focus of this paper is on economic implications of Chinese activities in connectivity sectors in Europe, yet touches upon other dimensions in the consecutive discussion of risks and policy implications.

The analysis of the BRI is not a straightforward task, not least because there is no clear-cut definition of which infrastructure projects take place under the BRI. Nor is there a platform providing a global listing of projects, or details of progress in their implementation, financing conditions, or the involvement of local companies and labor. The data on Chinese activities presented in this report rely on the China Global Investment Tracker (2019) provided by the American Enterprise Institute and the Heritage Foundation. It collates investment or construction announcements from media reports, corporate statements, and government documents. However, there is no guarantee of completeness, and regular updates are necessary as firms'

¹ For a brief introduction to the Belt and Road Initiative (comprising the Silk Road Economic Belt and the Maritime Silk Road), its main components and corridors see, e.g., Urban (2016) or Barisitz and Radzyner (2017). BRI project maps are provided by, for example, the Mercator Institute for China Studies (merics 2018) or the Reconnecting Asia project of the Center for Strategic and International Studies (CSIS 2020).

² See Xi (2017) for the full speech published by the official state-owned Chinese press agency, Xinhua.

³ See, for example, Rühlig and Björk (2020) on the Huawei debate.

⁴ According to Khalil (2020), the Coronavirus pandemic starting in 2020 spurred China's ambitions to set “new norms in digital rights, privacy and data collection, simultaneously suppressing dissent at home and promoting [China's] geostrategic goals.”

⁵ See, for example, the report by Conley et al (2020) on Serbia.

announcements might be revised and projects may materialize only in part or not at all.⁶

China's actions—directly or indirectly linked to the BRI—extend over all continents but have a strong geographical focus on Eurasia. Within Europe, BRI-related construction works mainly target economies with a strong need for catch-up in infrastructure—those of Central, East and Southeast Europe (CESEE), which can be regarded as a gateway to Western European markets.

Until recently, the diplomatic initiative “16+1,” aiming to improve cooperation between CESEE and China, comprised 11 European Union Member States in Central and Eastern Europe (all the countries that have joined the EU in 2004 or thereafter, except Malta and Cyprus) and five Western Balkan countries (all except Kosovo); the “+1” refers to China.⁷

This forum was expanded to a “17+1” format when Greece officially joined in April 2019. This step was not too surprising, in view of Chinese investments since the onset of the global economic and financial crisis. In 2009, China Ocean Shipping Company (COSCO) acquired a 35-year concession for two of the three port terminals in the Greek harbor of Piraeus. In 2016, it obtained a share of 67% of the harbor for EUR 370 million and announced plans to invest another EUR 350 million to increase port capacity (Bauranov 2016).

However, the step by Greece to officially be part of the “17+1” forum revived debates about potential effects of Chinese investment activities in Europe, especially in the crisis-ridden Southern EU Member States and the EU's Southeastern neighborhood, where sentiments towards the European Commission have been faltering.

Italy, a crucial economy of the EU, is not part of the “17+1” forum; yet, it signed a Memorandum of Understanding (MoU) on cooperation with China within the BRI framework in March 2019. These recent steps by individual EU Member States have triggered discussions on whether an uncoordinated approach towards the BRI could lead to greater competition for Chinese investments in Europe, ultimately increasing red-tape obstacles to trade and investment. For example, the Slovenian port of Koper and the Italian port of Trieste aim to strengthen cooperation. However, if they follow non-aligned strategies towards the BRI, and Trieste were to experience a boom at the expense of Koper, there would be an incentive to increase trade barriers between Trieste—which is almost entirely surrounded by Slovenian territory—and EU markets. Similarly, the future attractiveness of the Italian port of Genoa depends on the Lyon-Turin rail link, but progress on its construction could be slowed in order to promote the French port of Marseille for the BRI.⁸

⁶ The same holds true for other datasets such as the fee-based fDi Markets database (www.fdimarkets.com), or the merics Belt and Road Tracker (www.merics.org/de/bri-tracker/methodology), which is not publicly accessible.

⁷ The first CESEE-China summit took place already 1 year before the BRI was officially announced: 2012 Warsaw (Poland), 2013 Bucharest (Romania), 2014 Belgrade (Serbia), 2015 Suzhou (China), 2016 Riga (Latvia), 2017 Budapest (Hungary), 2018 Sofia (Bulgaria), and 2019 Dubrovnik (Croatia). See <https://www.ceec-china-croatia.org/en/about-cooperation/>.

⁸ See, e.g., OBORurope (2019): <https://www.oborurope.com/en/italy-bri-european-integration/>.

These examples highlight the importance of an EU approach towards China. Strategies on the EU level are discussed, but actual actions taken by EU Member States appear rather individualistic. This article reviews Chinese activities in connectivity sectors in Europe and discusses differences across regions, in particular between countries belonging to the “17 + 1” forum and Western European EU Members. It further illustrates by means of calculations based on input–output tables that economic effects of Chinese infrastructure activities are not confined to recipient countries due to the strong trade integration within the EU. Finally, it compares initiatives of the EU in connectivity sectors and discusses policy options to maximize benefits for economies targeted by European and Chinese infrastructure plans in a sustainable way.

Chinese activities in “connectivity sectors” throughout Europe

This section starts by showing the evolution of Chinese investments and construction volumes in Europe over time, distinguishing two major country groups. On the one hand, economies in the Western Balkans and the EU that are part of the “17 + 1” initiative are considered. Information for these economies is compared with data for countries in Europe outside the “17 + 1” forum, which include EU members, the economies of the European Free Trade Association (EFTA), and countries in the Eastern Neighborhood (Table 1).

The section goes on to illustrate volumes by country since the announcement of the BRI, highlighting some projects, and continues with a sectoral breakdown. Transport, energy, and telecommunications, which are at the heart both of the BRI and of strategies recently presented by the EU to improve intra-European networks, are henceforth referred to as connectivity sectors.

The data suggest that China’s total investments had been increasing until 2017, with a drop in 2018. The share of investments in Europe in overall Chinese investments was fluctuating over time, ranging from 6.5% in 2010 to 38.9% in 2017. Over the period 2007–2018, a quarter of Chinese investments targeted Europe. As shown in Fig. 1, the EU16 are the prime target in Europe; the “17 + 1” still play only a minor role. The large investment in the EFTA region in 2017 refers to the USD 43 billion takeover of Swiss seed and agrochemicals producer Syngenta by China National Chemical Corporation (ChemChina). This was described as a mistake in 2019 by China’s ambassador to Switzerland, Gen Wenbin. Without specifying reasons,⁹ his remarks may have been a response to calls by Swiss politicians for government intervention in sales of Swiss companies to foreign investors.

The lower panel of Fig. 1 presents the evolution of construction projects, showing a very different geographical pattern. Eastern economies—within and outside the EU—are significantly more important. Russia accounts for a large proportion

⁹ John Miller/Reuters (29 June 2019): <https://www.reuters.com/article/us-swiss-syngenta-china/chinese-envoy-says-syngenta-takeover-was-a-bad-deal-report-idUSKCN1TU0E0>.

Table 1 Country grouping: inside and outside the “17 + 1”

1. Western Balkans	Albania (AL), Bosnia and Herzegovina (BA), Montenegro (ME), North Macedonia (MK), Serbia (RS)	“17 + 1”
2. EU-CEE11	Bulgaria (BG), Czech Republic (CZ), Estonia (EE), Croatia (HR), Hungary (HU), Lithuania (LT), Latvia (LV), Poland (PL), Romania (RO), Slovenia (SI), Slovakia (SK)	
3. Greece	Greece (EL), so far, the only country within the “17 + 1” to have joined the EU prior to 2004	
4. EU16	Austria (AT), Belgium (BE), Cyprus (CY), Germany (DE), Denmark (DK), Spain (ES), Finland (FI), France (FR), Ireland (IE), Italy (IT), Luxembourg (LU), Malta (MT), Netherlands (NL), Portugal (PT), Sweden (SE), United Kingdom (UK)	Remaining Europe
5. EFTA	Iceland (IS), Norway (NO), Switzerland (CH), Liechtenstein (LI)	
6. Eastern Neighbors	Belarus (BY), Moldova (MD), Russia (RU), Turkey (TR), Ukraine (UA), and Kosovo (XK), the only Western Balkan economy not part of the “17 + 1” forum	

of contracts recorded for the country group of Eastern Neighbors, primarily in the energy sector. This is in line with expectations, given China’s incentive to improve and diversify its access to energy supplies. Russia is also central to the BRI’s success in the transport sector with respect to northern Eurasian routes. These have triggered much debate in the EU: railways in the EU and China use the so-called standard (or normal) gauge, but countries of the former Soviet Union use broad-gauge tracks, making gauge conversion a transport barrier to tackle. Technological solutions and locations of terminals in CESEE have been discussed.¹⁰ As long ago as 2008, the state railway corporations of Austria, Slovakia, Ukraine, and Russia founded a joint venture (Breitspur Planungsgesellschaft) aimed at extending the broad-gauge network from Košice (eastern Slovakia) to Vienna. Public debate in Austria revived in October 2019 after the publication of a report (ÖBB Infra 2019) on the environmental impact of the planned modification.

The share of Chinese construction project volumes in Europe never exceeded 19% of the total and amounted to 8.4% over the full period 2007–2018. For most West European economies, no contracts are recorded at all; this region appears to be more attractive for Chinese investments than for construction projects.

The geographical division—with Western Europe characterized by higher Chinese investment activities and Eastern Europe targeted more intensively by Chinese construction projects—is illustrated in Fig. 2, focusing on volumes in million USD reported after the announcement of the BRI. The only notable exception to this trend is Russia, which is a significant destination for both investments and construction projects.

¹⁰ For example, in the Budapest Guidelines for Cooperation between China and Central and Eastern European Countries in November 2017: http://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1514534.html.

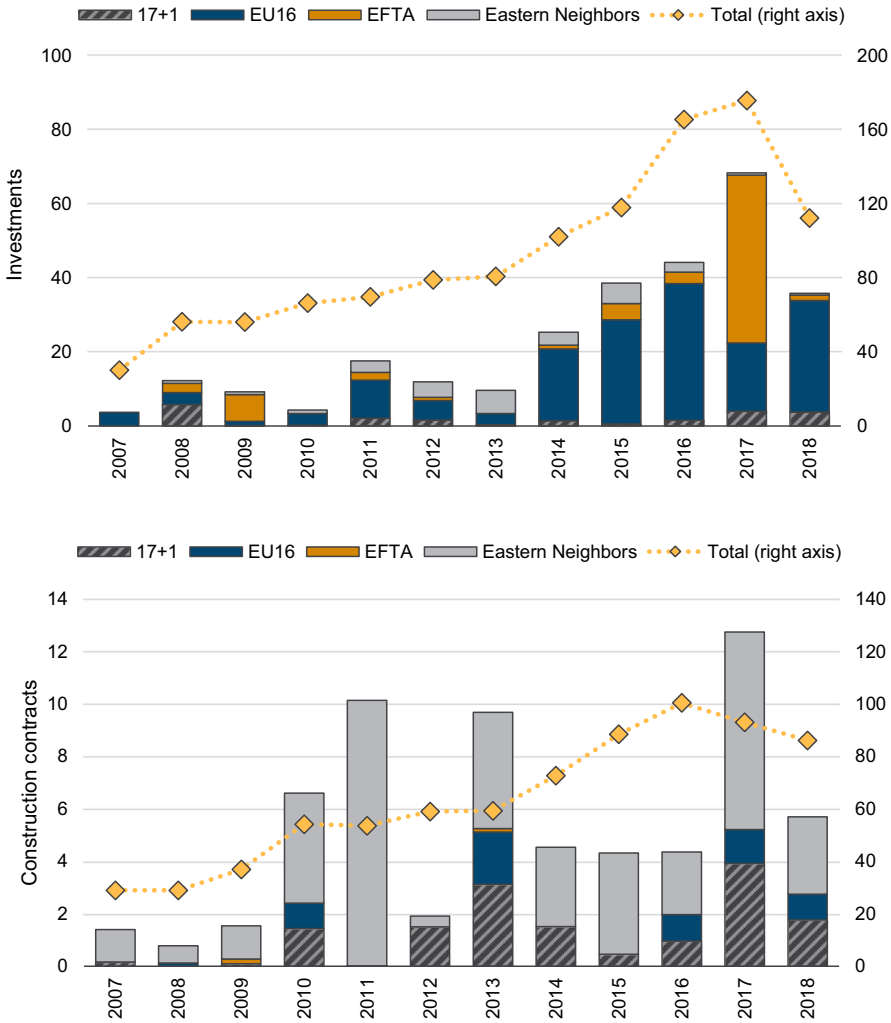


Fig. 1 Chinese investments and construction projects over time by European region (left axis) and in total (right axis) in billion USD. Source: China Global Investment Tracker (Spring 2019). Note: Author’s visualization

A sectoral breakdown shows that the connectivity sectors play a prominent role in investments and construction projects (Fig. 3). Over time, investments diversified more than construction projects, shifting the focus away from the energy sector towards sectors such as finance, tourism, and entertainment. The 22% figure for agriculture is driven by the above-mentioned investment in Switzerland; without this single take-over, the share of the agricultural sector would be 2%. Volumes of construction contracts were increasing as well, but less dynamically than investments, with connectivity sectors representing 70% of the total both before and after the BRI announcement.

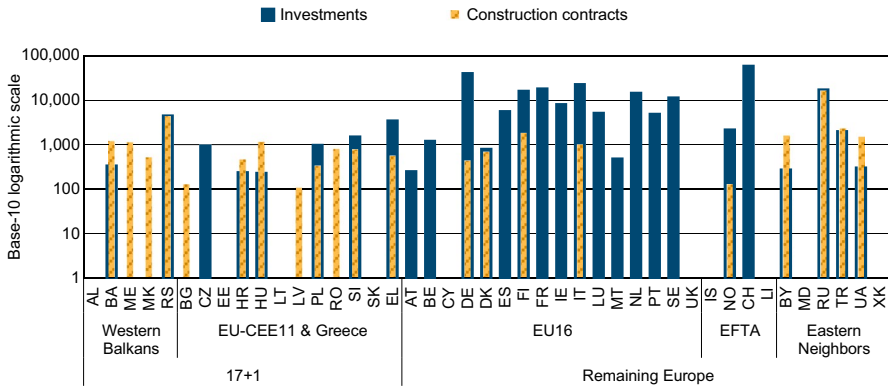


Fig. 2 Chinese activities by country, Oct 2013–Jun 2019, in million USD. Source: China Global Investment Tracker (Spring 2019); Author’s visualization

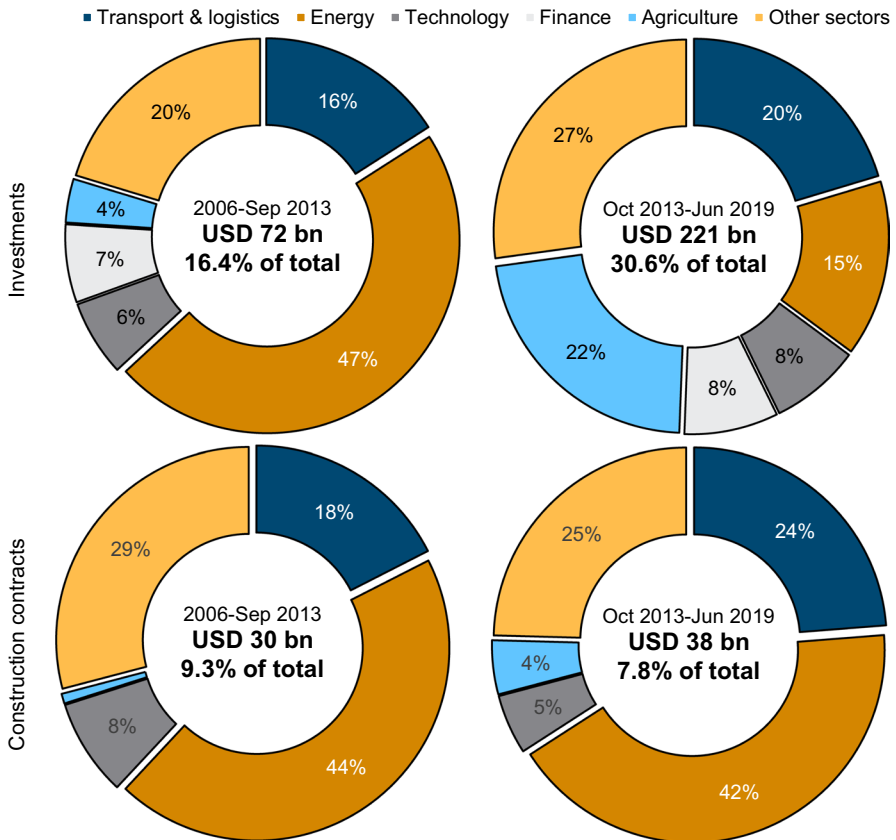


Fig. 3 Chinese investments and construction projects in Europe by sector. Source: China Global Investment Tracker (Spring 2019); Author’s visualization

In the “17+1” region, 92% of contracts worth USD 11.6 billion are attributable to connectivity sectors (Table 2). Only four countries in the EU outside the “17+1” framework (Germany, Denmark, Finland, and Italy) show any contracts, of which 75% are in connectivity sectors. In the Eastern Neighborhood, the share of connectivity sectors in overall construction volumes is lower, at 58%, owing to some sizeable projects in Russia’s steel and chemical industries, as well as real-estate projects in the region.

Table 2 Chinese construction projects in Europe Oct 2013–Jun 2019, in million USD

Country	ISO 2	Transport and logistics	Energy	Technology	Connectivity sectors	Total	Connectivity as % of total
Bosnia	BA	740	460	0	1200	1200	100%
Montenegro	ME	1120	0	0	1120	1120	100%
North Macedonia	MK	370	0	0	370	530	70%
Serbia	RS	2410	1390	170	3970	4390	90%
Western Balkans		4640	1850	170	6660	7240	92%
Bulgaria	BG	130	0	0	130	130	100%
Croatia	HR	470	0	0	470	470	100%
Hungary	HU	1040	110	0	1150	1150	100%
Latvia	LV	110	0	0	110	110	100%
Poland	PL	0	340	0	340	340	100%
Romania	RO	0	810	0	810	810	100%
Slovenia	SI	790	0	0	790	790	100%
EU-CEE11		2540	1260	0	3800	3800	100%
Greece	EL	0	230	0	230	570	40%
17+1		7180	3340	170	10690	11610	92%
Germany	DE	440	0	0	440	440	100%
Denmark	DK	0	0	700	700	700	100%
Finland	FI	0	850	0	850	1830	46%
Italy	IT	0	0	1010	1010	1010	100%
EU16- “out”		440	850	1710	3000	3980	75%
Norway	NO	130	0	0	130	130	100%
EFTA		130	0	0	130	130	100%
Belarus	BY	300	340	0	640	1590	40%
Moldova	MD	0	350	0	350	350	100%
Russia	RU	770	7480	0	8250	16,420	50%
Turkey	TR	0	2050	0	2050	2310	89%
Ukraine	UA	100	1410	0	1510	1510	100%
Eastern Neighbors		1170	11630	0	12800	22180	58%

Notes: No contracts recorded in the “17+1” during this period for Albania, Czech Republic, Estonia, Lithuania, and Slovakia. No contracts recorded outside the “17+1” during this period for Austria, Belgium, Cyprus, France, Ireland, Luxembourg, Malta, Netherlands, Portugal, Spain, Sweden, and the UK. Iceland, Liechtenstein, Switzerland, and Kosovo

Source: China Global Investment Tracker (Spring 2019). Author’s calculation

Notwithstanding the vagueness of the BRI concept, the fact that Chinese construction activities focus on sectors in which many of the targeted economies in CESEE face major deficiencies clearly increases the importance of China in Europe over time. The Transition Report published by the European Bank for Reconstruction and Development (EBRD 2017) suggests that infrastructure investment needs in some Western economies of the “17 + 1” group (such as the Czech Republic, Slovakia, Poland, and Slovenia) were about 3–4% of their annual GDP over the period 2018–2022. The need for infrastructure investment in the Western Balkans, Bulgaria, and the Baltic states exceeded 8% of their GDP throughout this period.¹¹

The need to extend and modernize infrastructure is greatest in the transport and energy sectors. Deficiencies in the former are particularly pronounced in the Western Balkans, which are characterized by very limited North–South connections and hardly any West–East transport infrastructure, as they are currently not well integrated into the EU Trans-European Network for Transport (TEN-T).¹² The Baltic states, by contrast, show gaps in the energy sector. For example, the electricity network in these countries still mainly consists of 300–330 kV grids (synchronized with Russia and Belarus), while 380–400 kV transmission lines are standard elsewhere in the EU.¹³ Infrastructure gaps were in general lower in the less capital-intensive ICT sector, with strong catch-up by Western Balkan economies in recent years.¹⁴

BRI effects trickling through European value chains

Chinese construction projects in Europe are concentrated in Eastern Europe and primarily in the energy sector. This does not mean, however, that economic effects are confined to these countries and sectors. The implementation of infrastructure projects triggers demand in the construction industry of that country. The domestic construction industry consequently may need inputs from other industries, stemming from domestic and foreign markets. The European Single Market is characterized by wide-spreading production networks, such that an increase of demand in one industry in one country can result in increased production, trade, and income in many other countries and industries. The linkages between industries of different countries can be analyzed with the “wiiw Integrated Europe Input–Output Database” (Reiter and Stehrer 2018),¹⁵ which comprises gross and value-added trade flows of

¹¹ For comparison, construction contracts reported in Table 2 in terms of countries’ GDP in 2018 amounted to 7.38% of targeted Western Balkan economies, and 0.25% of Eastern EU members. For the four Western EU members outside the “17 + 1” for which construction contracts were recorded, these were in the size of 0.02% of their GDP in 2018; for Eastern Neighbors they were in the order of 0.48% of their GDP.

¹² The TEN-T is a pan-European transport infrastructure network comprising railway lines, roads, inland waterways, maritime shipping routes, ports, airports, and railroad terminals aimed at connecting regions of the EU. See https://ec.europa.eu/transport/themes/infrastructure/ten-t_en.

¹³ See for example the interactive ENTSO-E Transmission System Map: <https://www.entsoe.eu/data/map/>. Note: In mid-2018, the Baltic states reached a political agreement for synchronizing their power system with the EU network by 2025.

¹⁴ See, e.g., Eurostat (2019) online publication “Enlargement countries – statistical overview.”

¹⁵ The data were constructed following the methodology of the World Input-Output Database (WIOD, Timmer et al., 2016).

32 industries in 50 countries, covering all of Europe except Belarus, Kosovo, Liechtenstein, and Moldova for the years 2005 to 2014.

To assess the potential effect of China-led infrastructure projects in Europe, we use the data on construction projects retrieved from the China Global Investment Tracker (2019) for the period October 2013 to June 2019. We assume a “business as usual” scenario in which construction industries of recipient countries source inputs for these projects as was the case in the past. Put differently, our calculations do not assume that projects with Chinese involvement primarily use Chinese production networks for their implementation. The results therefore need to be interpreted as upper-bound short-term effects, as some anecdotal evidence suggests that projects initiated by China involve to a large extent Chinese workers and materials.¹⁶ However, a study by Oya and Schaefer (2019) based on fieldwork in Angola and Ethiopia, covering 76 companies (31 of which were Chinese), over the period 2016–2019 suggests that Chinese firms do not act differently to non-Chinese companies with respect to the employment of local workers, wages paid, or training provided.

Estimated GDP effects resulting from trade linkages across Europe triggered by Chinese construction projects since October 2013 are depicted in Fig. 4. They need to be understood as the cumulative GDP impact over the full period of project implementation. A direct comparison with GDP per capita levels at purchasing power parities (i.e., accounting for different price levels across countries) shows that the biggest effects as a proportion of GDP occur in less wealthy countries in the Western Balkans. GDP effects exceeding 2% of GDP are found for Montenegro (13.6%), Serbia (6.3%), Bosnia and Herzegovina (4.4%), and North Macedonia (2.3%).

Highest effects among EU member states within the “17 + 1” group are found for Slovenia (1.4%), Croatia (1.0%), and Hungary (0.6%). For remaining EU and EFTA members, the effects are rather small, but greater than zero, although most of them were not directly subject to any construction projects.

These figures do not include induced effects, which would take into account the “multiplier effect”: a part of the income that is earned by households through the implementation of construction projects is going to be saved, but the other part will be spent again, further increasing the impact on GDP.

Furthermore, the analysis based on the Leontief-type demand-driven input–output model does not account for dynamic effects that are expected to occur as a medium/long-term consequence of infrastructure development, primarily related to the saving of cost and time.¹⁷ In the transport sector, the expansion and upgrading of road and rail infrastructure will ultimately result in a modal shift of goods and passenger transport. A reduction of overland transport costs will result in a shift from maritime to overland transport, while savings in transport time will result in a shift from air to overland transport.

¹⁶ E.g., Tschinderle F./*Erste Stiftung* (29 October 2018) on Serbia: “The Chinese bring money, they bring companies. Even the workers’ food is imported.”; Jardine B./*The Washington Post* (16 October 2019) on Central Asia; Servant 16FL02 J.-C./*The Guardian* (11 December 2019) on Zambia.

¹⁷ Assuming a reduction of railway and maritime transportation costs by 50% and 5%, respectively, for economies along the BRI corridors for a simulation exercise, García-Herrero and Xu (2017) find that trade gains would occur primarily for Western European economies.

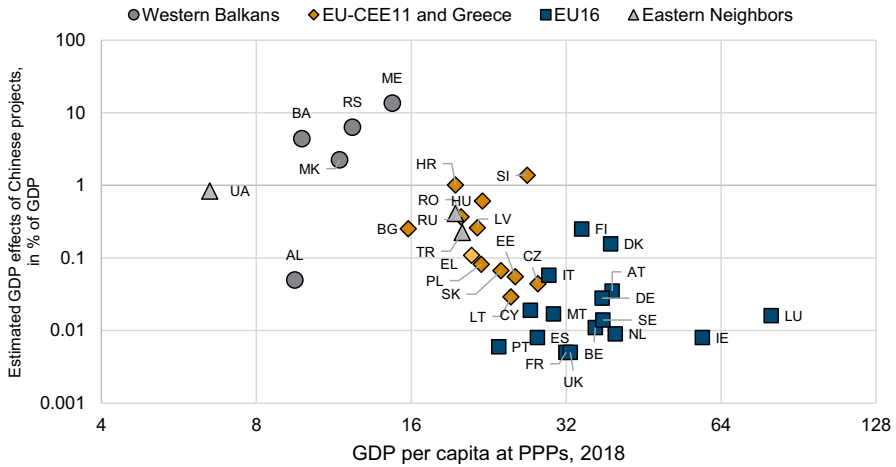


Fig. 4 Highest impact in less wealthy economies in Southeast Europe. Note: Logarithmic scales. Sources: GDP effects from *wiiw* calculations based on Chinese construction contracts in transport, logistics, energy, and technology covered by the China Global Investment Tracker between October 2013 and June 2019; in percent of 2014 GDP levels; Belarus not covered by WIOD. GDP per capita at PPP: *wiiw Handbook of Statistics* 2019; Author’s visualization

Recent estimates by the World Bank (2019) suggest that travel times will decline by up to 12% along BRI corridors and on average by 3% with the rest of the world. For comparison, a study by Schade et al. (2018) for the European Commission suggests that the completion of the Trans-European Network for Transport (TEN-T) brings the biggest time savings for passenger transport by rail along the Mediterranean (30%) and Orient/East-Med (27%) corridors (Fig. 5). Reductions in freight transport time are even more pronounced (44% for the Mediterranean and 34% for the Orient/East-Med corridor). The current official Orient/East-Med corridor circumvents the Western Balkans (See European Commission, DG MOVE 2020). However, the EU strategy towards the Western Balkans, adopted in February 2018, aims at including the region for better external (and internal) connectivity.¹⁸

The modal shift will primarily concern the transport of higher-value and more time-sensitive goods. A study by Steer Davies Gleave (2018) for the European Parliament suggests that improved services attributable to the BRI could result in a modal shift of 2.5 million containers¹⁹ from maritime transport and 0.5 million

¹⁸ For indicative maps of the extension of the TEN-T, which were prepared with the Western Balkan region and endorsed at the Western Balkans Summit in Vienna on 27 August 2015, see Annex III Vol 30/33 and Annex III Vol 31/33 as adopted by the European Parliament and the Council in December 2013 covering the amended Commission delegated regulations (EU) 2019/254 from 9 November 2018 and (EU) 2017/849 from 7 December 2016. Available at <https://ec.europa.eu/transport/infrastructure/ten-tec/tentec-portal/site/en/maps.html>.

¹⁹ Figures are reported in TEU (=twenty-foot equivalent units), which are a capacity measure in container transportation.

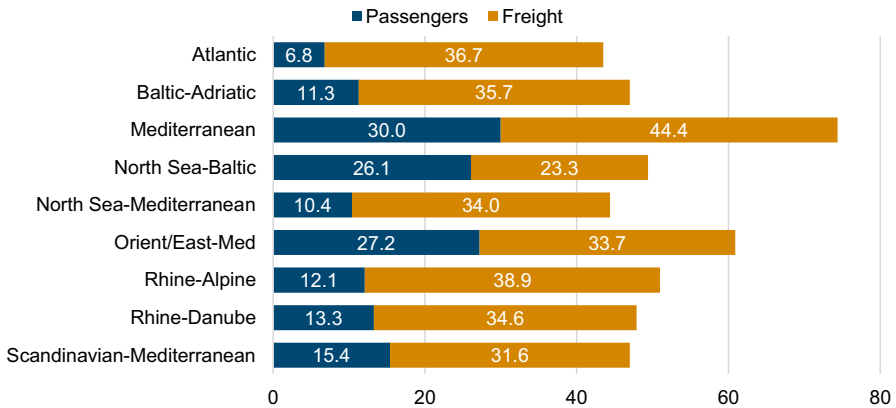


Fig. 5 Expected savings in travel time by rail in %, resulting from TEN-T investments. Source: Schade et al. (2018), p. 17; Author's visualization. Note: Transport time reductions relative to a baseline scenario that assumes no implementation of core TEN-T investments after 2016

containers from air transport towards rail transport. These figures correspond to 50–60 additional trains daily, or two to three trains per hour, in each direction, primarily using the New Eurasian Land Bridge through Kazakhstan, Russia, and Belarus.

Similar to the findings by Steer Davies Gleave (2018) on the effect of BRI investments, Schade et al. (2018) find support for a modal shift towards rail transport for EU investments in the TEN-T network. For the EU28, road activity in freight transport measured in ton-kilometers is expected to reduce by 0.4%, while freight transport by rail is calculated to increase by 4.7% and via inland waterways by 0.6%. For passenger transport, road traffic in passenger-kilometers is estimated to reduce by 0.7%, while rail transport is projected to experience an even higher gain of 8.4%.

A sustainable modal shift could contribute to the European Green Deal presented by the European Commission on 11 December 2019,²⁰ in particular as transport is increasingly contributing to environmental degradation (Fig. 6). The share of greenhouse gasses (GHG) attributable to the transport sector has climbed from around 20% in 1990 (when the energy industries accounted for 40%) to more than 30% in 2016, only slightly behind the 35% share of the energy industries (European Environment Agency 2018).

Better infrastructure and related services might give an additional boost to trade and investment opportunities, allowing for the diversification of traded goods and services and companies involved in international trade. Cheaper imports, better access to export markets, and increasing competition may also result in productivity gains, benefiting the economies in the long run.

²⁰ See the Commission's press release: https://ec.europa.eu/commission/presscorner/detail/en/IP_19_6691.

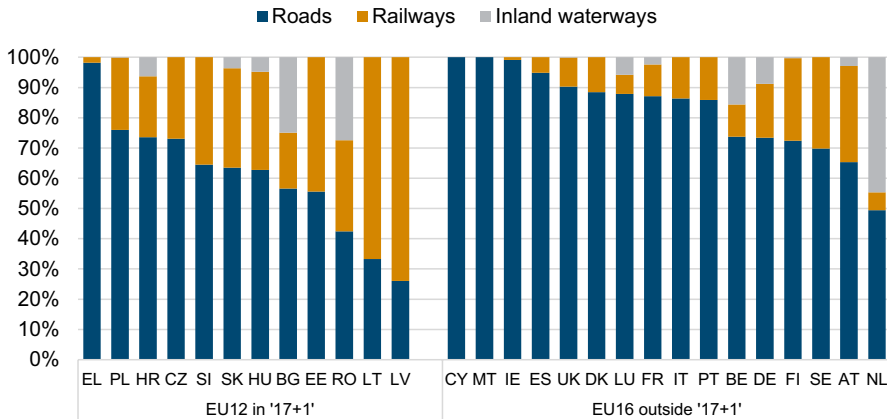


Fig. 6 Modal split of freight transport in the EU, 2017. Notes: Percentage of each inland mode in total freight transport performance measured in ton-kilometers. Source: Eurostat [tran_hv_fmmod]; Author's visualization

Uncertainties and risks accompanying the BRI

The development of public infrastructure on a large scale—whether initiated by the EU or China—has significant economic potential for targeted economies, particularly those with large deficiencies in key infrastructure. However, there are also uncertainties and risk factors, which are not easily quantifiable but need to be considered seriously.

Foreign production networks

Ex ante, there is no guarantee that projects will be implemented by employing local contractors, suppliers, materials, or workers. If investments financed by foreign donors use production networks of the donor country for the construction of infrastructure, hoped-for GDP effects in target countries would be severely limited in the short term.

Fearing a debt trap

Whereas EU grants do not affect public debt, loans/credits do. A study by Hurley et al. (2019) concludes that eight out of 68 analyzed countries face severe risk of debt distress as a consequence of BRI infrastructure financing. Among these eight economies is Montenegro, owing to the highway project linking the port of Bar with Serbia. The first construction phase cost USD 1.1 billion, equivalent to roughly one-quarter of the country's GDP. The Exim Bank of China financed 85% of the first phase at an interest rate of 2%, leading the International Monetary Fund (IMF) to conclude that debt default would be likely without highly concessional funds for the second and third phases of the project.

The World Bank (2019) concludes that 12 out of 43 analyzed low- and middle-income countries along the BRI corridors might experience a deterioration of their medium-term outlook for debt sustainability, even if BRI investments boosted economic growth. No European economies feature among the countries associated with the highest risks.

Notwithstanding the risks associated with overburdening debt and financing constraints, the allegation that China is deliberately following a “debt trap diplomacy” is contested (Brautigam 2019; Lai et al. 2020).

Circumventing public procurement rules

State-to-state negotiations without well-established public procurement rules increase the risk that opportunities of infrastructure development are lost or undermined by corruption. For example, reports of direct payments to politicians, inflated costs through mismanagement and direct awarding of subcontracts without tendering processes overshadowed the North Macedonian highway projects between Kičevo and Ohrid, as well as between Skopje and Štip (Makocki and Nechev 2017). The Exim Bank of China financed 85% of the projects, which were implemented by Sinohydro. Public procurement rules in the EU tend to be more stringent than in the rest of Europe. These have proved helpful in ensuring fair competition and reducing corruption but have been contentious among EU Member States.

Although China’s economic diplomacy towards CEE does not point towards a divisive strategy designed to benefit China at Europe’s expense (Garlick 2019), some European political leaders are propagating Chinese investments as an alternative to EU investments and thereby exemplify the observable political divergence within the EU. These do not openly present to the public the difference between EU grants available (predominantly) for EU members, which do not have to be paid back and thus do not pose any risk to debt sustainability, and loans from the EU or other foreign donors, which directly affect public debt.²¹ One of the most prominent examples is the Budapest-Belgrade railway project. Hungary did not adhere to EU public procurement rules, resulting in infringement proceedings in 2016. A project tender was released during the sixth CEE-China summit in 2017, but a new procurement process was launched in December 2018 owing to a substantial increase in expected project costs.²² Finally, in June 2019, the project was awarded to a Hungarian-Chinese consortium.²³ Although officially resolved, criticism and concerns about future infringement proceedings persist.

²¹ For a discussion on the importance of Chinese loans in comparison to EU loans and grants, see, for example, the Special Section of the *wiiv Autumn Forecast 2018* by Adarov et al. (2018).

²² According to Ralev (2018), the Hungarian government announced that China offered a loan over a period of 18 months with an interest rate of 2.5% for the 152-km Hungarian section.

²³ Joo, F./*International Railway Journal* (2019): “Ownership of the CRE Consortium is split 50:50 between Chinese-owned and Hungarian companies. China Tiejiju Engineering & Construction Hungary and China Railway Electrification Engineering Group (Hungary) will work with RM International, founded by R-Kord and Mészáros és Mészáros.”

Political impact of financial dependency

China may well have an interest in intervening in political decisions taken in countries targeted by BRI activities. However, even if important creditors, such as China, do not actively interfere, recipient countries might act to please them. This concern was voiced loudly in the media when Greece was blocking an EU statement regarding human rights violations by China shortly after COSCO acquired the majority share of the port in Piraeus in 2016. These worries are underpinned by the increasing importance of China as creditor and investor, while the EU's budgetary position is set to weaken as a consequence of Brexit.²⁴

In addition, the global massive economic downturn resulting from the COVID-19 pandemic, which started in early 2020, has put many countries in an extremely precarious position. Within the EU, however, it simultaneously triggered the so far largest fiscal stimulus package. By the end of 2020, the next long-term EU budget was adopted, with the multiannual financial framework (MFF) for 2021–2027 amounting to EUR 1074 billion and the new “Next Generation EU” (NGEU) instrument amounting to EUR 750 billion. There is a lot of potential to use these funds for long-term sustainable infrastructure investments. However, a potential risk to the effectiveness of the projects is the institutional design, as funding is linked to national structural reform plans. This bottom-up approach might be an obstacle to the implementation of large-scale pan-European infrastructure investments, which can generate EU-wide spillovers²⁵ (Beetsma et al. 2020).

Deterioration of standards

China is working on its internal ecological transition, for example through the dismantling of coal-fired power plants, attracting green investment and the introduction of an environmental tax. However, more stringent environmental policy may in the short-term lead to the relocation of dirty and resource-intensive industries/technologies to other countries (Baum 2017). Feng (2017) reported that Chinese companies were involved in the construction of 240 coal-fired power projects in 65 countries along BRI corridors between 2001 and 2016.

Several initiatives tackling these issues were launched during the second Belt and Road Forum in April 2019. The “Beijing Initiative for the Clean Silk Road” aims to promote transparency and combat corruption in line with the UN Convention Against Corruption. The “Green Investment Principles for the Belt and Road” are aimed at improving environmental and social sustainability in accordance with the UN 2030 Agenda for Sustainable Development and the Paris Agreement. Finally, the Debt Sustainability Framework launched by China's Ministry of Finance should avoid BRI-induced debt traps. How these initiatives are going to be operationalized remains to be seen. First assessments, e.g., by Chen and Wang (2020), conclude that

²⁴ Following a referendum in June 2016, the United Kingdom withdrew from the European Union on 31 January 2020. This event is known as the Brexit (“British exit”). It applies since January 2021.

²⁵ See, e.g., Creel et al (2020) for recent proposals for projects, such as a European high-speed rail network, European Silk Road initiative, or an “e-highway” electricity grid for renewable energy.

the Chinese course has not advanced sufficiently towards a “BRI 2.0” that could gain broad support from Western developed nations. Implementing a “green BRI” based on voluntary self-governance has so far not shown to be effective, not least due to limited political willingness and capacity of BRI partner countries (Coenen et al 2020). As the World Bank (2019) notes, “improved transparency and data on projects are an indispensable precondition for many of these actions. This will require coordination among different actors within China-government bodies, lending institutions, private sector firms, and SOEs [*state-owned enterprises*]. A first immediate objective should be to set up a comprehensive database of BRI projects” (p. 128).

European policy needs: create a level playing field and increase complementarity

Without doubt, the BRI brings opportunities as well as challenges for Europe. The EU and countries targeted by the BRI should become more proactive in order to maximize the benefits of the initiative and reduce the risks associated with it.

An important step towards a level playing field in infrastructure development and investments is the stand-alone EU-China Comprehensive Agreement on Investment (CAI). Negotiations started in 2013, the same year that the BRI was announced. At the EU-China Summit on 9 April 2019, the parties agreed to accelerate negotiations and work towards the conclusion of the agreement by 2020. Negotiation rounds have since taken place almost every month. Indeed, the agreement in principle was concluded on 30 December 2020. According to the European Commission (2020), China committed *inter alia* to better market access for investments of EU companies, improving transparency of subsidies and prohibiting forced technology transfer. Both parties aim to conclude negotiations on investment protection and dispute settlement within 2 years. Notwithstanding the many critiques the agreement faces, it may well provide the foundation for a rule-based bilateral relationship predicated on the principles of non-discrimination and reciprocity. Thus, it serves better transparency and predictability and is therefore expected to increase trust of (and in) Chinese and EU investors.

Furthermore, the EU maintains—and continues to expand—its sizeable network of trade agreements. China, however, is not on the agenda. Since China’s accession to the WTO in 2001, the multilateral trade rules of the WTO form the basis for EU-China trade relations and dispute settlement. A very shallow bilateral Trade and Economic Cooperation Agreement dating back to 1985 does not reflect the current reality of EU-China trade. Nonetheless, negotiations on a necessary upgrade of the bilateral trade agreement, which started in 2007, were halted in 2011. Given the publicly raised concerns regarding expected import surges resulting from BRI infrastructure investments, a revival of negotiations to achieve a new generation trade agreement extending from tariff reductions to product, labor, and environmental standards could promote trust among European consumers. Finding common ground on trade matters is particularly urgent, given that the US administration is undermining multilateralism. The US has blocked the appointment of new members

to the Appellate Body of the WTO, which became non-functional on in December 2019.²⁶

Trade and investment are closely linked, particularly in the connectivity sectors targeted by the BRI. All of these sectors can be regarded as strategically important and are therefore subject to the new EU foreign investment screening regulation that entered into force in April 2019.²⁷ Within the EU, 14 member states have a national screening mechanism in place, including Austria, Germany, and Italy. Although non-discrimination is a key requirement, China could become the main economy subject to investment screening, due to its increasing importance in inward investment in the EU and also because state-owned enterprises—which play a prominent role in Chinese activities—are associated with a higher risk for security and public order.

Apart from creating a level playing field, better coordination of infrastructure development in the energy, transport, and ICT sectors between recipient countries, the EU, and China would be beneficial for the region. Improved complementarity should be pursued within the three EU initiatives, as set out below.

InvestEU program

This program was proposed in June 2018 as part of the long-term EU budget for the period 2021–2027. It succeeds the European Fund for Strategic Investments (EFSI), which was at the heart of the Investment Plan for Europe, the so-called Juncker Plan. It aims to trigger EUR 500 billion in investments in the EU through the provision of EUR 33.5 billion in guarantees for business and infrastructure projects (EUR 26 billion from the EU budget and EUR 7.5 billion from the EIB Group).

Figures on the achievements of the ongoing program are regularly updated. As of March 2020, EUR 60.9 billion of financing by the EIB and EUR 24.5 billion of financing by the European Investment Fund (EIF) had been approved, with a total investment of EUR 466 billion related to these EFSI approvals. Of these investments, 31% target smaller companies and 26% are dedicated to research, development, and innovation (RDI). Among the connectivity sectors, energy has the highest share (17%), followed by the digital (9%) and the transport (7%) sectors.

Major beneficiary countries of the EFSI with respect to approved financing and expected investments in absolute terms are France, Italy, Spain, Germany, and Poland. However, in terms of triggered investment relative to GDP, Greece ranks first, followed by Estonia, Portugal, Bulgaria, and—again—Poland (European Commission, EIB and EIF 2020).

The new InvestEU program initially envisaged guarantees in the order of EUR 47.5 billion (EUR 38 billion from the EU budget and the rest from financial partners such as the EIB), aiming at generating total investment in the EU of EUR 650 billion over a 7-year period through crowding-in of private and public investment. The

²⁶ By 10 December 2019, the terms of two judges expired. These agreed to continue their work on three appeals for which oral hearing has been completed. After that, there is only one judge left (out of seven, originally) and the WTO Appellate Body is dysfunctional.

²⁷ See Regulation (EU) 2019/452 of the European Parliament and of the Council of 19 March 2019: <https://eur-lex.europa.eu/eli/reg/2019/452/oj>.

main value-added of the new program is the aggregation of currently multiple EU loan and guarantee financing instruments as well as 13 different advisory services (European Commission, 2018b).

The COVID-19 crisis resulted in a substantial rescaling of the InvestEU program. The InvestEU budget guarantee amounts to some EUR 75 billion, with EUR 20 billion earmarked for sustainable infrastructure and EUR 31 billion for strategic European investment. The allocation of the multiannual financial framework for 2021–2027 to the InvestEU program was set at EUR 2.8 billion, with an additional contribution of EUR 5.6 billion from the newly established “Next Generation EU” (NGEU) instrument aimed at tackling the socio-economic problems arising from the COVID-19 pandemic (European Parliament 2020).

Six EU flagship initiatives for the Western Balkans

In the “17 + 1” region, China so far acted more as a norm-taker than norm-setter (Gerstl 2020). This is particularly true for the EU Member States in the region, for which the EU governance mechanism applies. More concerns are raised for the Western Balkan region, which is not fully integrated into the EU’s legal framework. However, the reinvigorated interest of the EU in engaging and investing in the region, while reviving membership prospects, strongly restricts the Western Balkans’ ability to develop independently their economic relationship with China (Pavličević 2019).

The EU initiatives towards the Western Balkans are based on the strategy for “A credible enlargement perspective for and enhanced EU engagement with the Western Balkans” adopted in February 2018 (European Commission 2018a), which suffered a setback in October 2019, when the European Council postponed the start of EU enlargement negotiations with Albania and North Macedonia.²⁸ Increasing connectivity within the region as well as between the Western Balkans and the EU features among the targets (European Commission 2018c).

In the transport sector, the EU aims to increase the use of the Connecting Europe Facility (CEF) in the Western Balkans, which implies that the region will gain better access to EU grants. Currently, loans dominate EU financing in the Western Balkans and therefore also increase the region’s indebtedness. Furthermore, the region should be better integrated into the Trans-European Network for Transport (TEN-T), in particular through the inclusion of the region in the new rail strategy for the Orient/East-Med and the Mediterranean core TEN-T corridors, and through the removal of barriers at road and rail border crossings.

The expansion of the Energy Union to the Western Balkans is part of the action plan for the energy sector. In the ICT sector, the EU provides support in developing eGovernment, eHealth, digital skills, and broadband infrastructure. In view of potential future EU enlargement, it will enhance support for the implementation of EU regulations in line with the EU Digital Single Market.

²⁸ See, for example, wiiw News, “Making the best of a bad hand” (29 October 2019): <https://wiiw.ac.at/n-399.html>.

EU strategy for connecting Europe and Asia

Transport, energy, and digitalization form three of the four pillars of the EU strategy for Connecting Europe and Asia presented in September 2018. The fourth facet of connectivity addresses the human dimension, including the areas of education, research, innovation, culture, and tourism.

Fostering cooperation within the EU-China Connectivity Platform set up in 2015 is a key action addressed in Chapter 4 on building international partnerships for sustainable connectivity, to “promote the digital economy, efficient transport connectivity and smart, sustainable, safe and secure mobility, based on the extension of the TEN-T network, and promote a level playing field in investment” (EEAS 2018, p.9). This cooperation forum explicitly addresses actions to identify synergies between the European TEN-T policies and the Chinese BRI. The fourth chairs’ meeting took place in the course of the 21st EU-China Summit in April 2019, where parties agreed *inter alia* on the terms of reference for a joint study on sustainable railway-based transport corridors between Europe and China via the Balkan Peninsula.

In addition, five expert group meetings²⁹ took place between 2016 and 2019, at which both parties presented planned transport infrastructure projects potentially suitable for cooperation. A total of 20 projects in China, 20 projects in the EU, five projects in other European countries, and four projects in Central Asian economies have been collected.³⁰ Within the EU, 18 projects addressed the EU-CEE economies; the remaining two concern the Italian ports of Genoa and Trieste.

The EU might go a step further, initiating a cohesive complementary European Silk Road. Holzner et al. (2018, 2019) propose two main overland transport connections throughout Eurasia, with substantial employment and growth potential. Construction costs for state-of-the-art transport infrastructure along the northern route, from Lisbon to Uralsk (on the Russian-Kazakh border), together with the southern route, from Milan to Volgograd (Russia) and Baku (Azerbaijan), are estimated at around EUR 1 trillion, or 7% of EU GDP. Currently, investment in infrastructure is particularly attractive, for three reasons: the underdevelopment of infrastructure in peripheral regions in Eurasia; low/negative real interest rates; and potential growth effects that allow for “self-financed” investment.

Conclusion

The BRI was announced in 2013. Since then it has advanced to a global infrastructure development project, aimed at the transport, energy, and ICT sectors. Its implementation has far reaching—economic, political, and geostrategic—implications.

In Europe, the interest in the BRI revived when Greece officially joined the “16+1” initiative in 2019. The paper describes the sectoral evolution of Chinese

²⁹ EU-China Connectivity Platform expert group meetings: November 2016 in Beijing, May 2017 in Brussels, July 2018 in Beijing, November 2018 in Brussels, and July 2019 in Beijing.

³⁰ See Appendix Table 3 for lists of projects presented by the EU-China Connectivity Platform (2019). Unfortunately, these are not accompanied by information on expected project volumes, whether and how parties in fact cooperated, or how they were supposed to be financed.

investments and infrastructure construction projects across European regions. It shows that most construction projects in Europe are concentrated in the “17 + 1” region, comprising five Western Balkan countries, eleven EU Member States in Central and Eastern Europe, as well as Greece. Furthermore, connectivity sectors—transport, energy, and ICT—dominate these construction projects, whereas investments in other European regions are more diversified.

The concentration of Chinese infrastructure activities in the “17 + 1,” however, does not mean that their economic effects are limited to this region. The spillovers to other economies are *inter alia* due to the strong intra-European supply and production networks. The analysis of input–output tables reveals that Western Balkan economies are expected to benefit the most in relative terms from Chinese BRI activities in Europe. Nonetheless, Western European economies could also profit—in the short term via international trade, and in the medium and long run via cheaper and faster transportation, higher demand induced by increases in income and shifts towards more sustainable modes of transportation.

The paper summarizes uncertainties and risks associated with Chinese BRI activities in Europe from an economist’s point of view related to potential debt traps, financial dependency, foreign production networks, the circumvention of public procurement rules, and deterioration of standards. Keeping these in mind, policy recommendations—also with respect to recent EU investment initiatives, such as the InvestEU program—are derived. They emphasize the strong need for better coordination and more complementarity between European and Chinese activities, and to supplement the EU’s primary bottom-up approach by some top-down initiatives to allow for the effective implementation of large-scale pan-European projects, generating spillovers for the EU as a whole.

Importantly, it is in the interests of the EU and China, but even more so of the economies in Eurasia targeted by infrastructure financing and investments, to make European and Chinese initiatives a success for economic and political reasons. Chinese infrastructure development activities in Europe can indeed contribute to better connecting European economies, physically and digitally. However, without sufficient information and political support, European citizens will not be able to embrace these large-scale undertakings.

Reducing the complexity of financing structures,³¹ for example, as envisaged for the InvestEU Program, is a step in the right direction on a rather long journey towards transparency, which should also cover the collection of official data and monitoring of the financing and implementation of projects and their effects. The communication of the reduction of transport time and costs, the impact on local employment, and the effects on economic growth, regional wealth distribution, and public debt might influence public perceptions as well as the actions taken by investors and donors.

³¹ European grants and loans for the development of connectivity sectors encompass, for example, the Connecting Europe Facility (CEF), the European Fund for Strategic Investments (EFSI), the European Structural and Investment Funds (ESIF) including the Cohesion Fund (CF), which partly acts through the CEF. The Western Balkans receive funding *inter alia* through the Instrument for Pre-accession Assistance (IPA) as well as the Western Balkans Investment Framework (WBIF). See Gruebler et al. (2018) for a more detailed discussion of Chinese and EU financing institutions and instruments.

Epilog

The global unfolding of the COVID-19 crisis in 2020 will result in breaks in investment trends, postponement or even cancelation of BRI construction plans. The future progress of BRI will depend on the actual scale of the economic downturn of donor/investor and recipient/target economies for infrastructure development. In Europe, the economic environment for Chinese investment activities will alter, e.g., by new guidance to EU Member States on investment screening and the Coronavirus Response Investment Initiatives of the European Commission. However, policy recommendations discussed in this paper continue to hold for the time, when the major health and economic risks related to COVID-19 are resolved.

Appendix

Table 3 EU-China Connectivity Platform projects in Europe (2016–19)

Projects in Europe within the EU		Location
1	Hemus motorway project and Black Sea motorway project	Bulgaria
2	Restoration of the design parameters of Ruse-Varna Railway Line	Bulgaria
3	Modernization of Sofia-Pernik-Radomir Railway Line Project	Bulgaria
4	Modernization of the Karnobat-Sindel Railway Line	Bulgaria
5	Rijeka-Zagreb-Budapest railway	Croatia
6	Accessibility of Rijeka port in the context of the Croatian railway network: - Karlovac-Oštarije section - Oštarije-Škrljevo section - Škrljevo-Rijeka-Jurdani section	Croatia
7	V0 Rail Cargo Line bypassing Budapest	Hungary
8	Hungary-Serbia railway	Hungary
9	Genoa Port breakwater project	Italy
10	Trieste Integrated Rail Hub	Italy
11	North Sea Baltic Corridor, comprising of the following sub-projects: - Logistics and industrial center project at the Freeport of Riga - New terminal “Northern port” project at the Freeport of Ventspils - Rail Baltica Intermodal Logistics Center freight village - Logistics center for e-commerce business in the Riga International Airport	Latvia
12	Adjusting Odra River Waterway (E30) to the international waterway standards	Poland
13	Construction of Silesian Channel (Silesia Waterway Project)	Poland
14	Construction of middle and lower Vistula cascade (waterways E40 and E70)	Poland
15	Warszawa-Brzesc connection—extending E-4o waterway	Poland
16	Connections Timisoara—Romanian/Serbian border: - Timisoara-Moravita motorway - Timisoara-Stamora Moravita railway line	Romania
17	Development of the Košice Intermodal terminal (Košice Joint Transport Terminal Construction Project)	Slovakia
18	Development of the Leopoldov Intermodal Terminal	Slovakia
19	Development of the Bratislava Trimodal Terminal	Slovakia
20	Railroad Project from Koper to Divaca	Slovenia

Table 3 (continued)

Projects in Europe outside the EU		Location
1	Adriatic Ionian Motorway	Albania
2	Corridor 5c Highway Project	Bosnia and Herzegovina
3	Mateševo-Andrijevic section of the Bar-Boljare highway (BBH)	Montenegro
4	Serbia railway network	Serbia
5	Ferry Railway Complex in Chornomorsk port	Ukraine

Source: EU-China Connectivity Platform via European Commission: <https://ec.europa.eu/transport/sites/transport/files/eu-china-connectivity-platform-projects-2019.pdf>

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Code availability Stata code deriving value-added trade effects is available upon reasonable request.

Declarations

Conflict of interest The author declares no competing interests.

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