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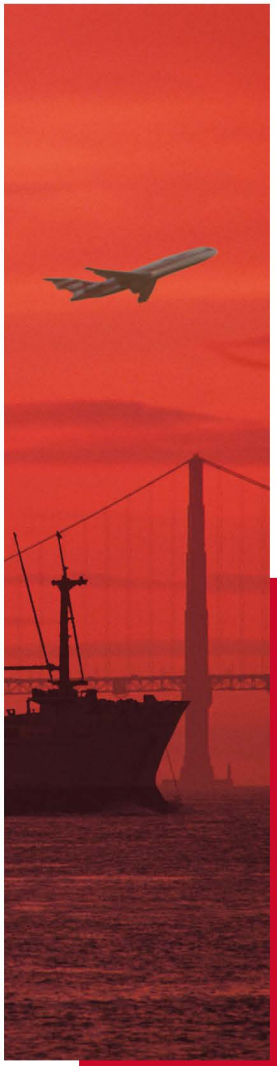

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Research for TRAN Committee: The new Silk Route - opportunities and challenges for EU transport

STUDY

EN FR

2018

European Parliament

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This document was requested by the European Parliament's Committee on Transport and Tourism.

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LINGUISTIC VERSIONS

Original: EN
Translation: FR

ABOUT THE PUBLISHER

To contact the Policy Department or to subscribe to updates on our work for TRAN Committee please write to: Poldep-cohesion@ep.europa.eu

Manuscript completed in January 2018

Print	ISBN 978-92-846-0556-9	doi:10.2861/95772	QA-02-17-061-EN-C
PDF	ISBN 978-92-846-0555-2	doi:10.2861/349796	QA-02-17-061-EN-N

This document is available on the internet in summary with option to download the full text at: http://bit.ly/2B6oyxJ

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http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_STU(2018)585907

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Please use the following reference to cite this study:
Steer Davies Gleave, 2018, Research for TRAN Committee: The new Silk Route – opportunities and challenges for EU transport, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels
Please use the following reference for in-text citations:
Steer Davies Gleave (2018)

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Research for TRAN Committee:
The new Silk Route - opportunities and challenges for EU transport

STUDY

Abstract

The new Silk Route Initiative brings opportunities and challenges for the European transport system. This research study analyses the Initiative, its impacts and prospects, as well as the EU transport system's readiness for the Initiative. It provides conclusions and recommendations to the European Parliament Committee on Transport and Tourism to address the Initiative's challenges.

IP/B/TRAN/IC/2017-006 January 2018

PE 585.907 EN

CONTENTS

LIST OF ABBREVIATIONS

ADBC	Agricultural Development Bank of China
AIIB	Asian Infrastructure Investment Bank
AMS	Amsterdam Airport Schiphol (NL)
ANSP	Air navigation service provider
AOA	Articles of Agreement
ARTC	Australian Rail Track Corporation
ASEM	Asia-Europe Meeting
AT	Austria
AUH	Abu Dhabi International Airport (UAE)
BJS	Beijing Capital International Airport (CHN)
BOT	Build-Operate-Transfer
BRF	Belt and Road Forum
BRI	Belt and Road Initiative
BRICS	Brazil, Russia, India, China, South Africa
CAREC	Central Asia Regional Economic Cooperation
CCCC	China Communications Construction Company
CDB	China Development Bank
CDG	Paris Charles de Gaulle Airport (FR)
CEE	Central and Eastern Europe
CEEC	Central and Eastern European Countries
CER	Community of European Railway and Infrastructure Companies
CHN	China
CIC	China Investment Corporation
CITI	China International Trade Institute

CMA CGM	Compagnie Maritime d'Affrètement - Compagnie Générale Maritime (Maritime Freight Company - General Maritime Company)
CMHI	China Merchants Holdings International
CNC	Core Network Corridor
COSCO	China Ocean Shipping Company
CO_2	Carbon dioxide
CRCC	China Railway Construction Corporation Limited
CSIS	Center for Strategic and International Studies
CUEC	China National Electric Import & Export Corporation
CZ	Czech Republic
DB	Deutsche Bahn (German Railways)
DE	Germany
DECC	United Kingdom's Department of Energy and Climate Change
DEFRA	United Kingdom's Department for Environment Food & Rural Affairs
DOH	Hamad International Airport (Doha, QAT)
DXB	Dubai International Airport (UAE)
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ECRL	East Coast Rail Line
EL	Greece
EP	European Parliament
EPRS	European Parliamentary Research Service
ES	Spain
ESADE	Escuela Superior de Administración y Dirección de Empresas (Higher School of Business Administration and Management)
ETNC	European Think-tank Network on China

ERTMS	European Railway Traffic Management System
EU	European Union
FDI	Foreign direct investment
FI	Finland
FR	France
FRA	Frankfurt Airport (DE)
FYROM	Former Yugoslav Republic of Macedonia
GDP	Gross Domestic Product
GHG	Greenhouse gas
GPA	Government Procurement Agreement
G20	Group of Twenty
HEL	Helsinki-Vantaa Airport (Helsinki, FI)
HKCSD	Hong Kong Commission on Strategic Development
HKG	Hong Kong; also: Hong Kong International Airport
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IDI	Inward direct investment
IEA	International Energy Agency
ILA	International lending agency
IMO	International Maritime Organization
IST	Istanbul Atatürk Airport (TUR)
IT	Italy
JFK	John F. Kennedy International Airport (New York, USA)
KTZ	Kazakhstan Temir Zholy (Kazakhstan Railways)
LEJ	Leipzig/Halle Airport (DE)
LHR	Heathrow Airport (London, UK)

LU	Luxembourg
LUX	Luxembourg Airport (LU)
MDST	MDS Transmodal
MERICS	Mercator Institute for China Studies
MoU	Memorandum of Understanding
MUC	Munich Airport (DE)
MXP	Milan–Malpensa Airport (Milan, IT)
NDB	China's New Development Bank
NDRC	China's National Development and Reform Commission
NL	Netherlands
OBOR	One Belt, One Road
ODI	Outward direct investment
OECD	Organisation for Economic Co-operation and Development
ORD	O'Hare International Airport (Chicago, USA)
OSS	One-Stop-Shop
PKP	Polskie Koleje Panstwowe (Polish State Railways)
PL	Poland
PRC	People's Republic of China
QAT	Qatar
R&D	Research & Development
RMB	Renminbi (the currency of China)
RUS	Russia
RZD	Rossiyskie Zheleznye Dorogi (Russian Railways)
SAFE	State Administration of Foreign Exchange of the PRC
SEETO	South East Europe Transport Observatory
SGP	Singapore

SIN	Singapore Changi Airport
SIPRI	Stockholm International Peace Research Institute
SRF	Silk Road Fund
SVO	Sheremetyevo International Airport (Moscow, RUS)
TEN-T	Trans-European Transport Network
TEU	Twenty-foot Equivalent Unit
TUR	Turkey
UAE	United Arab Emirates
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
UNECE	United Nations Economic Commission for Europe
UNIFE	Association of the European Rail Industry
USA	United States of America
USD	United States Dollars
VIE	Vienna International Airport (AT)
WCD	MDST's World Cargo Database
WTO	World Trade Organization

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EXECUTIVE SUMMARY

Introduction

This research study analyses the opportunities and challenges for the European transport system resulting from the Chinese "One Belt, One Road" (OBOR) Initiative. "One Belt, One Road" refers to the combination of the "Silk Road Economic Belt" (six major land corridors across the Eurasian continent) and the "21st Century Maritime Silk Road" (a network of maritime trade routes connecting Asia with Africa and Europe). This study refers to the Initiative as the "Belt and Road Initiative" (BRI), which is the name more recently used by Chinese governmental sources.

The development of this research study was based on desk research, quantitative analysis of trade and transport flows between Asia and Europe and interviews with business and institutional stakeholders both in Europe and Asia.

Definition and geography of the Belt and Road Initiative

No official or generally accepted definition of the BRI exists. Its geographical scope includes 65 countries which jointly account for some 60% of global Gross Domestic Product (GDP) and 30% of the world's population. The analysis of the BRI shows that it:

- involves a significant amount of communication and branding, with multiple projects labelled as BRI projects apparently because they fall within its geographical scope;
- is not subject to a clearly-defined development plan, programme or budget, and that there is no clear list of projects that it is intended to include; and
- has no clear geographical or economic boundaries – the BRI appears to have evolved in response to individual countries' engagement, with China rather than in line with an overarching strategy.

Objectives of the Belt and Road Initiative

China's stated objectives for the BRI refer to a broad intention to foster international understanding and collaboration with the countries involved, which focus on five areas: (i) policy coordination, (ii) capacity building, (iii) liberalisation and facilitation of trade and investment, (iv) financial cooperation and (v) people-to-people exchange.

The review of academic discussion about China's underlying objectives for the BRI conducted for the purpose of this study suggests that they are likely to include the following:

- supporting Chinese exports of products and equipment, as well as its engineering and construction capabilities and technologies;
- controlling logistics chains to support Chinese trade with Europe;
- encouraging economic convergence and more balanced development across China;
- providing a mechanism for increasing the use of the Renminbi (RMB), China's national currency, as a means of international payment; and
- creating alternative overland energy routes to supply oil and gas from Central Asia, Southeast Asia, and Pakistan.

Chinese engagement in the BRI, specific initiatives and projects

China's financial engagement in support of the BRI is mainly through loans arranged through national financial institutions and investment in foreign businesses. Overall, more than 80 transport-related projects benefitting from Chinese financial engagement have been identified in the course of this research study. They cover air, road, rail and maritime investments in a large number of countries. Furthermore, it can be observed that:

- investments in the EU mainly concern transport nodes and take the form of equity/acquisition of shares in ports, railways and airports;
- there is a concentration of investments at the borders of the EU, in particular in the Balkans as well as in central and eastern European countries; and
- port investments are spread along the whole maritime trade route connecting Asia to Europe.

Cooperation between China and Europe

China's engagement with the EU on the BRI has been primarily through bilateral discussions with individual EU Member States rather than through EU institutions. In particular, since 2014, EU Member States, and a number of other non-EU countries (mainly in Central and Eastern Europe), have signed Memoranda of Understanding (MoUs) with China within the framework of the BRI. In addition, a specific framework for cooperation between China and Central and Eastern European countries (the "16+1 Format[1]") has been implemented as a means to enhance the development of the BRI in these regions of Europe.

A coordinated and pan-European approach is only slowly emerging. Key areas of EU-China cooperation concern:

- reciprocity and the creation of a level-playing field in trade and investment;
- equal market access;
- promotion of jointly-agreed international standards; and
- coordination of infrastructure investments and transport services.

The EU-China "Connectivity Platform" is intended to be a forum to coordinate the infrastructure policies of the EU and China. Based on the findings of this research, the "Connectivity Platform" should be strengthened in a number ways, as discussed below.

The effect of the BRI on transport

Predicting the effect of the BRI on the transport network is particularly challenging, as there is no clear definition or programme for the BRI. In addition, it is not possible to distinguish trade specifically generated by the BRI from wider trade between the Far East and Europe. Investments attributed to the BRI are only a small part of the overall investment which will anyway be made by the owners and managers of air, sea, rail and road infrastructure across Eurasia.

[1] "16+1 Format" includes China, 11 EU Member States (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia) and five Balkan countries (Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia).

For maritime freight, it is estimated that the total westbound and eastbound trade flows between Far East and the EU were just over 16 million TEUs in 2016[2]. According to forecasts presented in this research, the total two-way freight traffic will be around 40 million TEUs by 2040. For air freight, the total two-way volume flown between Europe and the Far East was 3.3 million tonnes in 2016. It is estimated that this will grow to 5 million tonnes by 2040.

Moreover, this research assessed the extent to which cargo currently carried by maritime and air modes between Europe and the Far East will in future shift to rail as a result of improved services attributed to the BRI. The results of the analysis indicate that around 2.5 million TEUs could transfer to rail from maritime transport, and 0.5 million from air transport, by 2040. It is estimated that this is equivalent to 50 to 60 additional trains daily, or 2 to 3 trains per hour, in each direction. Rail services can be expected to target higher value and more time-sensitive goods than the current maritime transport.

The opportunities and challenges of the BRI

In the course of this research, the following opportunities as a result of the BRI were identified:

- Chinese parties are willing to take construction risk and to develop construction projects.
- Commercially viable rail services between China and the EU can be beneficial to European operators, shippers and industry.
- The BRI can be a platform to streamline customs arrangements.
- EU businesses may be involved in transport infrastructure projects in countries along the BRI, in particular in Central Asia.
- The BRI may be beneficial to the environment, reducing CO_2 emissions as a result of the projected mode shift to rail freight between the Far East and Europe.

On the other hand, the following challenges were detected, and should inform the EU's policy response to the BRI:

- Infrastructure projects may be implemented because Chinese funding is available, with little focus on the demand for, or sustainability of, the services that they are intended to support.
- The lack of a clear BRI investment plan may generate investment projects which compete with or duplicate others, either inside or outside the EU.
- Chinese dominance in rail transport, or control of the entire logistics chain, may significantly increase its market power in respect of EU trade.
- Construction or operational EU standards in non-EU countries could be undermined by the promotion of different and sometimes lower Chinese standards.
- Improved accessibility for trade between China and the EU may alter the relative competitive position of individual EU Member States.

[2] TEU is the industry term for measuring volumes of container transport – one TEU represents the volume of goods carried by one twenty-foot container.

The readiness of the EU transport system for the BRI

The assessment of the routes most likely to be used in the future for the shift of container traffic to rail indicates that the most likely route is north of the Alps, towards EU Member States bordering the North Sea and the Baltic Sea. The containers carried by rail would primarily be those previously shipped to North Sea ports, and would mainly travel along the route from Moscow (Russia) through Brest (Belarus) and Warsaw (Poland) to Berlin (Germany), including part of the TEN-T North Sea – Baltic Core Network Corridor.

The review of the European Commission's North Sea – Baltic Core Network Corridor Study found that that rail infrastructure capacity in 2030 should be capable of meeting the current and forecast demand to that date. However, the Study appears not to include the volume of BRI-related traffic which may emerge by 2040. While bottlenecks may still emerge in the EU's transport network, specific changes to the TEN-T programme are not justified at the moment. Such changes would be premature and might be inadequate or redundant, depending on the future evolution of the BRI.

Recommendations

The study recommends the following:

1. While continuing a constructive dialogue and cooperation with China, the EU should seek greater clarity on the BRI's future plans, and encourage the development of studies concerning the connection of specific TEN-T and BRI corridors in the framework of the "Connectivity Platform" (starting from the North Sea – Baltic Core Network Corridor of the TEN-T and the New Eurasian Land Bridge Corridor of the BRI).
2. At the moment, TEN-T does not need to be modified due to the BRI. However, it is proposed that the TEN-T corridor studies are reviewed and developed periodically as the work of the "Connectivity Platform" progresses and the BRI is more clearly defined. This would require TEN-T policy to become more outward-looking.
3. To ensure that Europe remains a global hub for standardisation, EU institutions should foster the establishment of modern standardisation systems, in particular with reference to the European Railway Traffic Management System (ERTMS) technology, one of the largest beneficiaries of TEN-T funding in the 2007-2013 and 2014-2020 multi-annual Programmes.
4. EU institutions should continue to engage with the Chinese Government to agree possible specific contents of an EU and China Investment Agreement as soon as possible.
5. The European Parliament and the European Council should support the proposal of the European Commission (EC) to establish a framework for the Member States to screen foreign direct investments in the European Union (EC 2017/0224 (COD))[3]. This would ensure the EU's ongoing openness to foreign direct investments while preventing the capture of key European intellectual property by competitors.

[3] Procedure 2017/0224 (COD) – Proposal for a Regulation of the European Parliament and of the Council establishing a framework for screening of foreign direct investments into the European Union, Brussels, 13 September 2017, COM(2017) 487 final.

6. The European Parliament and the European Council should support the development of a legislative instrument, based on the European Commission's COM(2016)34[4], to guarantee reciprocity of access to public markets in the EU and China by European and Chinese businesses.
7. Finally, the Chinese Government should be encouraged by its EU partners to become a participant in the OECD Arrangement on Guidelines for Officially Supported Export Credits. In particular, it is recommended that, in monitoring progress towards a Comprehensive Agreement on Investment, the European Parliament seeks to ensure that China's participation in the OECD framework is a key objective of the EU's negotiating strategy.

[4] Procedure 2012/0060 (COD) – Amended proposal for a Regulation of the European Parliament and of the Council on the access of third-country goods and services to the Union's internal market in public procurement and procedures supporting negotiations on access of Union goods and services to the public procurement markets of third countries. Brussels, 29 January 2016, COM(2016) 34 final.

1. THE BELT AND ROAD INITIATIVE

KEY FINDINGS

- **The "Belt and Road Initiative" (BRI) is a major policy initiative developed by China to improve connectivity between Asia and Europe.** It includes seven major corridors using primarily land and sea-based transport and covering 65 countries.
- However, the **BRI is not precisely defined** and its geographical and project scope continue to evolve as China engages with different countries inside and outside the European Union (EU) on a bilateral basis.
- **China's stated objectives for the BRI are to promote cooperation** between participating countries in the interests of improving connectivity and facilitating trade, investment and the exchange of technology and expertise.
- There is considerable debate about China's underlying objectives. Nevertheless, some commentators agree that the **BRI is part of a geopolitical strategy to strengthen China's position** as a potential global leader as well as to improve its economic competitiveness.
- The **BRI has received financial support from a range of Chinese financial institutions**, including established "policy banks" and newly created international institutions that China has sponsored or in which it is actively participating.
- By the end of 2016, these financial institutions had provided USD 292 billion of financing for BRI-related projects, and President Xi Jinping has recently announced that a further USD 127 billion will be made available in the coming years.
- To date, BRI-related schemes within the EU have been generated through bilateral engagement between China and individual Member States. **Engagement at the EU level is now taking place through the "Connectivity Platform",** but work to coordinate TEN-T and BRI policy and to promote the application of market principles and EU standards is at an early stage.

1.1. Introduction

Xi Jinping, the President of China, announced the "One Belt, One Road" initiative (OBOR) in late 2013 "One Belt, One Road" refers to the combination of the "Silk Road Economic Belt" (six major land corridors across the Eurasian continent) and the "21st Century Maritime Silk Road" (a network of maritime trade routes connecting Asia with Africa and Europe). In Europe, the international trade and transport corridors resulting from OBOR are often referred to as the "New Silk Road(s)" (or "New Silk Routes"). This study refers to the "Belt and Road Initiative" (BRI), which is the name more recently used by governmental Chinese sources[5], or simply to "the Initiative".

[5] The name "Belt and Road Initiative" is used by: the People's Republic of China State Council, Chinese President Xi Jinping, who used it at the opening ceremony of the Belt and Road Forum for International Cooperation held in Beijing (China) on 14 May 2017, and the Belt and Road portal hosted by the Chinese State Information Center.

This chapter discusses in turn:

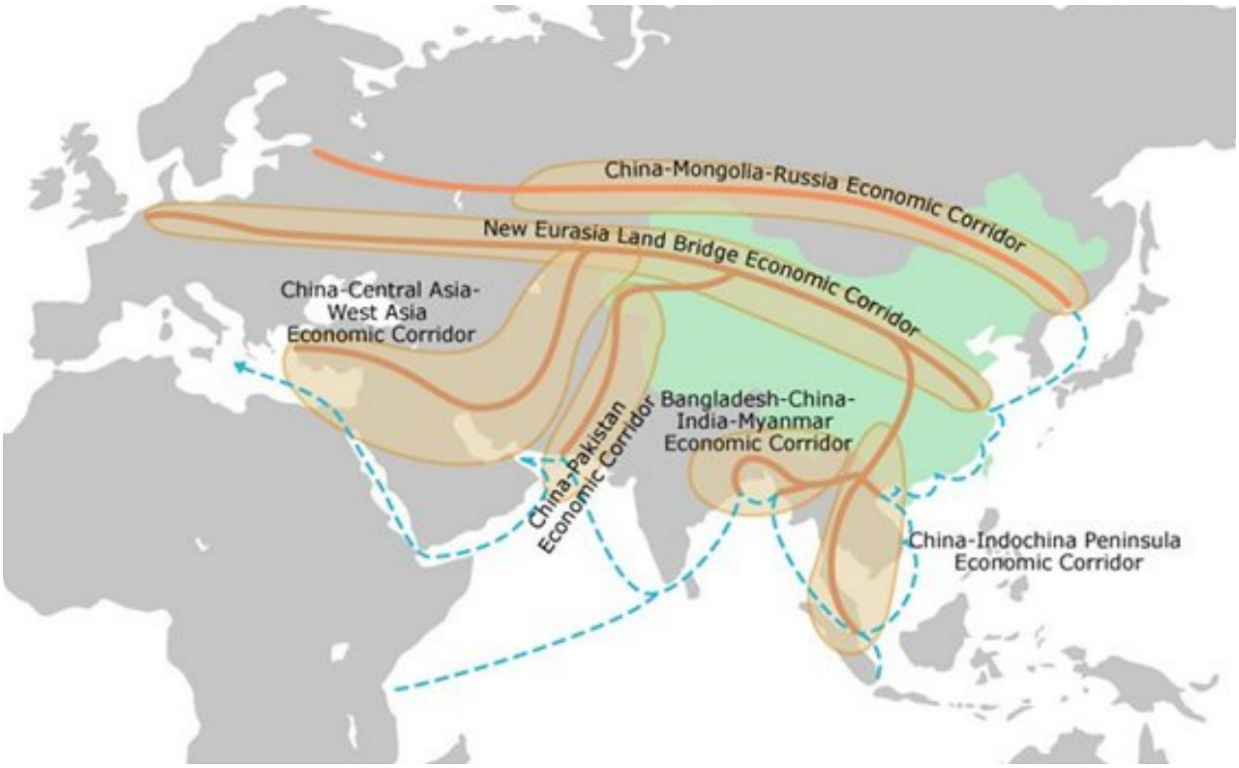
- the definition and geography of the BRI;
- the Chinese Government's objectives for the BRI;
- the specific initiatives and projects supporting it;
- the financial support for the Initiative being provided by China; and
- EU policy towards the BRI.

1.2. Definition and geography of the Belt and Road Initiative

1.2.1. Definition of BRI corridors

According to the "Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road" (hereafter the "Vision and Actions" document), published by the Chinese National Development and Reform Commission, the Chinese Ministry of Foreign Affairs and the Chinese Ministry of Commerce in March 2015, the BRI includes six major land corridors (the "Silk Road Economic Belt") and one maritime corridor (referred to as "The 21st Century Maritime Silk Road"), as shown in the map below (the green area is China, brown areas are the land corridors and the blue dotted line is the maritime corridor).

Map 1: The Belt and Road Initiative's economic corridors



Source: Hong Kong Trade Development Council (HKTDC) Research

The corridors are defined as follows:

- **New Eurasian Land Bridge Economic Corridor**: this is based on a railway line that connects Western China (Jiangsu and Xinjiang provinces) with Rotterdam in the Netherlands through Kazakhstan, Russia, Belarus and Poland.

- **China – Mongolia – Russia Economic Corridor**: this is based on the integration of existing Chinese, Mongolian and Russian regional development strategies[6] (Otgonsuren B., December 2015). The corridor is intended to strengthen cross-border road and rail links between the three countries.
- **China – Central Asia – Western Asia Economic Corridor**: this is a land corridor linking Xinjiang province in China with the Central Asia rail network, reaching the Arabian Peninsula and the Mediterranean coast. This corridor passes through five Central Asian countries (Kazakhstan, Kirghizstan, Tajikistan, Uzbekistan and Turkmenistan), one Middle Eastern country (Iran), and one European country (Turkey[7]).
- **China – Indochina Peninsula Economic Corridor**: this is a land corridor linking southern China with Singapore, intended to sustain the development of countries along the Mekong River[8] through transnational road, rail, and airport projects.
- **Bangladesh – China – India – Myanmar Economic Corridor**: this is a land corridor linking southern China with India.
- **China – Pakistan Economic Corridor**: this land corridor links China's Xinjiang Uyghur Autonomous Region with Pakistan's deep-water Gwadar Port. The corridor includes several road and rail infrastructure development projects and oil and gas pipeline and telecommunication network projects.
- **Maritime Corridor**: this corridor links the major ports within the South China Sea and the Mediterranean Sea, across the Bay of Bengal, the East African coast[9], and the Suez Canal. The corridor currently includes almost 30 ports.

No official or generally accepted definition of the Initiative exists. The BRI was initially only loosely defined when it was launched in 2013. The relevant literature suggests that it is best viewed as a "broad conceptual framework for policies contributing to greater economic integration within Asia, between Asia and Europe, and between Asia and Africa" (Van der Putten et al., 2016), rather than a formal, clearly-defined policy or programme.

1.2.2. Participating countries

As indicated by the number and scale of the corridors listed above, the geographical scope of the BRI is broad. A report, released by the China International Trade Institute in August 2015 (CITI, 2015), identified 65 countries along the BRI (see Table 1 below). These countries jointly account for some 60% of global Gross Domestic Product (GDP) and 30% of the world's population (Chin and He, 2016).

[6] These strategies include the following:
- "*Millennium Development Goals Based Comprehensive National Development Strategy of Mongolia*" (Mongolia, 2007);
- "*Strategy for the Socio-Economic Development of the Far East, the Republic of Buryatia, Zabaykalsk Krai and Irkutsk Oblast for the Period up to 2025*" (Russia, 2009); and
- "*Program of Cooperation between the Far Eastern and Eastern Siberian Regions of the Russian Federation and the Northeastern Region of the People's Republic of China (2009–2018)*" (China, 2009).

[7] The China International Trade Institute classified Turkey as part of Europe, as reported in Table 1.

[8] The Mekong River runs through China's Yunnan Province, Myanmar, Laos, Thailand, Cambodia and Vietnam.

[9] With reference to the East African coast, this geographical area was not analysed for the purposes of this study, as it is not directly relevant to the issue of trade and transport relations between Asia (and in particular China) and Europe.

Table 1: Countries participating in the BRI

Region	Countries
East Asia	China, Mongolia
Southeast Asia	Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, Vietnam
South Asia	Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka
Central Asia	Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan
Middle East and North Africa	Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Palestine, Syria, United Arab Emirates, Yemen
Europe	Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Former Yugoslav Republic of Macedonia (FYROM), Georgia, Hungary, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Turkey, Ukraine

Source: China International Trade Institute, quoted by Chin and He (2015)[10]

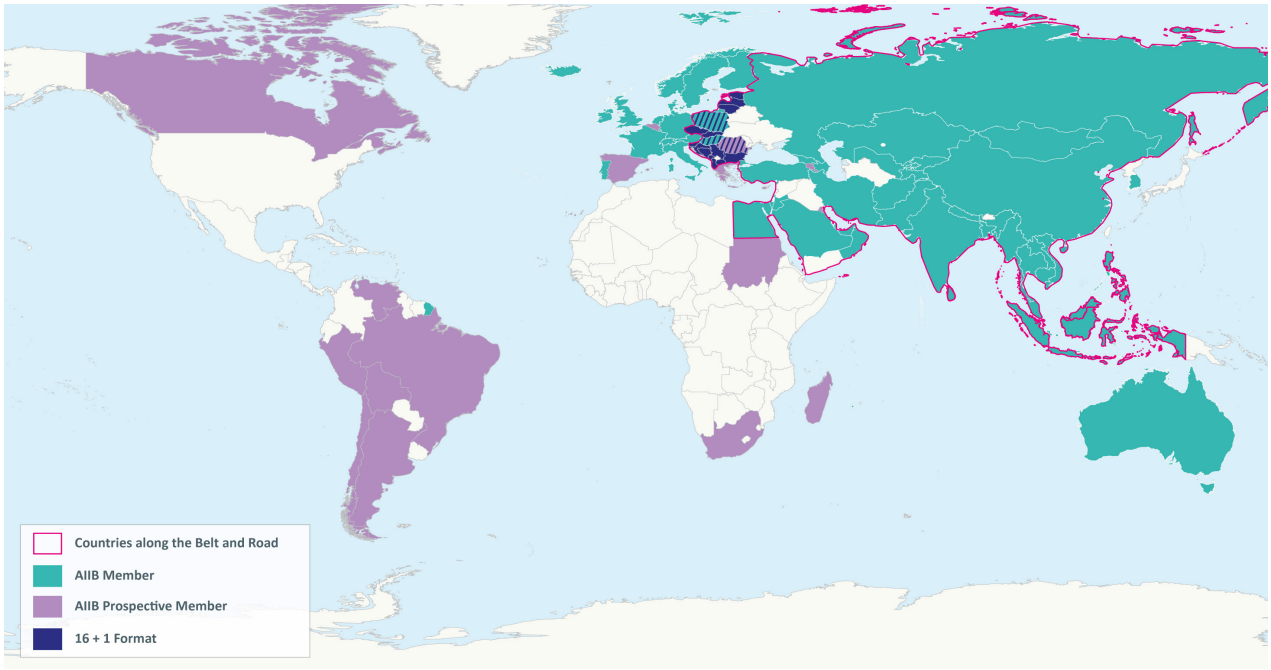
The geographical scope of the BRI is further illustrated in Map 2 below, which includes:

- the 65 countries along the BRI (as reported in Table 1 above);
- the countries which are Members or Prospective Members of the Asian Infrastructure Investment Bank (AIIB), an international financial institution focused on supporting infrastructure construction with particular relevance for the BRI (discussed further below in section 1.5.2); and
- the 16 European countries involved in the "16+1 Format", a framework for cooperation between China and Central and Eastern European Countries (also discussed further below in section 1.4.2).

Other countries have also participated or shown interest in the BRI by means of cooperation with China in transport infrastructure or more general forms of bilateral cooperation. Section 1.4 and Annex 2 include a more detailed analysis of Memoranda of Understanding (MoUs) between European countries and China, and transport infrastructure cooperation with China for specific projects.

[10] The countries are grouped based on the World Bank's classification by region.

Map 2: Geographical scope of the BRI



Source: Steer Davies Gleave analysis of Cooperation between China and Central and Eastern European Countries (November 2017), AIIB (November 2017) and Chin E., He W. (May 2016)

1.2.3. Definition of plans and projects

While the BRI has resulted in considerable interest and engagement at governmental level, it needs to be noted that:

- It involves a significant component of communication and branding, with many projects labelled as BRI initiatives apparently because they fall within its geographical scope. For example, Chinese investment in the port of Piraeus in Greece in 2009, which was secured well before the Initiative was launched, is now regarded as a major BRI project.
- It is not subject to a clearly-defined development plan and budget, and is not defined by a clear list of projects that it is intended to include.
- Similarly, it has no clear geographical and economic boundaries, and appears to have evolved in response to individual countries' engagement with China, rather than in line with an overarching strategy.

Section 1.3 and Annex 3 present the results of the analysis of projects covered by the BRI conducted for the purpose of this study. The apparent flexibility of the initiative, in terms of geographical scope and identity of projects, is confirmed by the "Vision and Actions" document, which indicates that "the Initiative is open for cooperation. It covers, but is not limited to, the area of the ancient Silk Road[11]. It is open to all countries, and international and regional organisations for engagement". In particular, it describes the BRI as an open platform among the participating countries and international organisations intended to improve policy coordination, infrastructure connectivity, and collaboration in trade, finance, science and technology.

[11] The Ancient Silk Road is a network of commerical routes throughout the Eurasian continent which connected Roman and Chinese civilizations.

1.3. The Chinese Government's objectives for the BRI

1.3.1. China's stated objectives

On 14 May 2017, Xi Jinping, President of China, set out a series of broad objectives for the Initiative. His speech was delivered at the opening ceremony, held in Beijing, of the Belt and Road Forum for International Cooperation (BRF). While reiterating his call for an open world economy, he stated that the aim of the BRI was to create "a new model of win-win cooperation" and to renew the ancient Silk Road spirit of "peace and cooperation, openness and inclusiveness, mutual learning and mutual benefit"[12]. He went on to identify a number of principles and objectives underpinning the Initiative, which can be summarised as follows:

- a readiness on China's part to "share practices of development with other countries" without the "intention to interfere in other countries' internal affairs, export our own social system and model of development";
- an intention to avoid "outdated geopolitical manoeuvring", but rather to achieve "a new model of win-win cooperation" so as to create "a big family of harmonious co-existence";
- a desire to "complement the development strategies of countries involved by leveraging their comparative strengths"; and
- an intention to "focus on the fundamental issue of development, release the growth potential of various countries and achieve economic integration and interconnected development".

These aims are largely focused on China's economic development agenda, although they also suggest a broader intention to foster international understanding and collaboration. The same themes are developed in more detail in the "Vision and Actions" document highlighting five areas in which the BRI is expected to encourage engagement and collaboration:

- **policy coordination** among countries participating in the BRI, particularly in respect of economic development strategies and policies, development plans and measures for regional cooperation, and the establishment of a multi-level intergovernmental macro policy exchange and communication mechanism;
- **capacity building** through improvement of connectivity and harmonisation of standards in transport, construction of port infrastructure, expansion of platforms for cooperation and improvement of infrastructure in energy and civil aviation, construction of cross-border communications networks, and strengthening cooperation in science and technology;
- **liberalisation and facilitation of trade and investment** to lower trade barriers, improve transparency in technical trade measures and expand mutually beneficial investment, as well as to strengthen cooperation in emerging industries and industrial parks (such as cross-border economic and trade cooperation zones);

[12] Elements of the BRI can be traced to the Third and Fourth Generations of Chinese leadership (respectively, 1992-2003 under Jiang Zemin's leadership, and 2003-2012 under the leadership of Hu Jintao), when several concepts and strategies were developed. These included the "Going Out" strategy (1999), the "Grand Western Development" strategy (2000), China's "Peaceful Development" concept (2003), the "March West" strategy (2004), and the "Harmonious World" concept (2005). The Fifth Generation of Chinese leadership (from 2012, under the presidency of Xi Jinping) has developed further concepts and strategies which can be considered as precursors to the BRI, including the "Chinese Dream" (2012) and the "Community of Common Destiny" (2013).

- **financial cooperation** to build currency stability, investment and financing frameworks, and credit information systems in Asia, and to encourage commercial equity investment funds and private funds to participate in the construction of key projects covered by the BRI; and
- **people-to-people exchange**, to advance cooperation in areas such as youth employment, student exchange programmes and training in entrepreneurship.

In the specific area of transport, the "Vision and Actions" document also sets out a number of particular goals shown in Table 2.

Table 2: Transport-related goals in the "Vision and Actions" document

Area	Goal
Transport infrastructure construction	"We [China] should focus on the key passageways, junctions and projects, and give priority to linking up unconnected road sections, removing transport bottlenecks, advancing road safety facilities and traffic management facilities and equipment, and improving road network connectivity."
Coordination and custom clearance	"We [China] should build a unified coordination mechanism for whole-course transportation, increase connectivity of customs clearance, reloading and multimodal transport between countries, and gradually formulate compatible and standard transport rules, so as to realize international transport facilitation." "We [China] should support inland cities […] in building airports and international land ports, strengthen customs clearance cooperation between inland ports and ports in the coastal and border regions […]."
Land transport	"On land, the Initiative will focus on jointly building a new Eurasian Land Bridge and developing China-Mongolia-Russia, China-Central Asia-West Asia and China-Indochina Peninsula economic corridors by taking advantage of international transport routes, relying on core cities along the Belt and Road and using key economic industrial parks as cooperation platforms." "We [China] should set up coordination mechanisms in terms of railway transport and port customs clearance for the China-Europe corridor, cultivate the brand of "China-Europe freight trains", and construct a cross-border transport corridor connecting the eastern, central and western regions."
Maritime transport	"At sea, the Initiative will focus on jointly building smooth, secure and efficient transport routes connecting major sea ports along the Belt and Road." "We [China] should push forward port infrastructure construction, build smooth land-water transportation channels, and advance port cooperation; increase sea routes and the number of voyages, and enhance information technology cooperation in maritime logistics."
Air transport	"We [China] should expand and build platforms and mechanisms for comprehensive civil aviation cooperation, and quicken our pace in improving aviation infrastructure."

Source: NDRC (2015)

These goals focus on improving transport connectivity through investment in infrastructure, but also include measures to streamline processes that can reduce connectivity, such as customs clearance procedures. They are ambitious in that they cover all the principal modes of transport across the full geographical scope of the Initiative. However, while they support the broader stated objectives of the BRI reported above, they provide little information on China's underlying motives.

1.3.2. Other views on objectives

Much of the discussion of the BRI in the industry and academic literature has focused on the opportunities for increased trade between China, other parts of Asia, and Europe along newly-constructed and upgraded infrastructure. There has also been debate about the reasons for the Initiative, and what specific interests it serves, and both western and Chinese commentators remain divided over whether the BRI should be regarded as a primarily geostrategic, economic or national developmental strategy (Ghiasy and Zhou, 2017). Nevertheless, there is a widespread recognition that the BRI and its possible effects must be seen in the light of major geopolitical issues, such as China's relations with the United States of America (USA) and Russia and the stability of Southeast Asia against a background of growing tension in the South China Sea (involving a number of Southeast Asian countries whose cooperation the BRI is partly intended to foster).

This study sought to investigate China's underlying objectives for the BRI through investigation of the literature set out in Annex 1 and engagement with a number of stakeholders. The views set out below cannot be verified within the context of this study, which did not allow for extensive testing of observations and conclusions with a wide range of stakeholders. In particular, no representatives of the Chinese Government have been interviewed. Nevertheless, the desk research for this study suggests five broad objectives driving Chinese promotion of the BRI that are not stated in, but are broadly consistent with, official statements on the Initiative.

Firstly, the BRI can be seen as a response to a decline in China's domestic economic growth and export demand and increasing costs of labour in the more developed coastal regions (such as the Pearl River Delta and Yangtze River Delta) relative to those in inland provinces. These trends have resulted in over-capacity in a number of sectors, and a need to relocate the more labour-intensive elements of China's manufacturing sector to inland regions where labour costs are lower. By enhancing connectivity with Africa, Asia and Europe, the BRI is expected to support exports of materials and equipment as well as engineering and construction capability and technology[13]. It will also support the development of manufacturing in inland areas by providing connections with key export markets.

Secondly, a number of stakeholders suggested that China's promotion of the BRI was at least partly intended to enable it to control logistics chains supporting trade with Europe. Transport and warehousing costs can be a significant component of the price of final goods, and controlling their management will enable China to become more competitive. According to some stakeholders, this objective has underpinned much of China's investment in seaports, which are key nodes in the trade networks supporting Chinese exports to Europe.

[13] This is consistent with "Made in China 2025", an initiative to comprehensively upgrade Chinese industry, making it more efficient and integrated so that it can occupy the highest parts of global production chains (CSIS, June 2015).

Thirdly, the BRI will help to address the issue of uneven growth across China's provinces over the past 20 years. While central China is becoming a more popular investment destination (enjoying average annual growth in FDI of +8.1% between 2012 and 2015), the growth of FDI in the western provinces has been more variable (-14.7% in 2012, +7.1% in 2013, +1.9% in 2014 and -6.8% in 2015) (KPMG, 2016). Moreover, western and northern Chinese provinces suffer from weak trade connections with neighbouring countries (Puls, 2016) and, since trade with Europe and North America is mainly by sea, goods produced in western China bear the additional costs of reaching the ports in the eastern Chinese provinces. By providing better connections between inland provinces and potential export markets, the BRI can encourage economic convergence and more balanced development across China (Ghiasy and Zhou, 2017).

Fourthly, the BRI and its supporting financial framework may be regarded as a challenge to the western-led financial system, which continues to determine global protocols for commercial and financial transactions. Within China, the current system is considered to limit the country's role (and the role of other developing countries) in global financial decision-making processes (Gabuev, 2015). Against this background, the BRI can be seen as providing a mechanism for increasing the use of the Renminbi (RMB), China's national currency, as a means of international payment and finding applications for underused Chinese capital. These developments, in turn, could be expected to enhance China's international leadership role and to strengthen its economic position in relation to neighbouring countries.

Finally, the BRI appears to be partly driven by the need to reduce China's reliance on particular sources of energy. Its dependence on foreign supplies of oil and natural gas is significant and increasing, as demand for energy has far exceeded the available domestic supply (HKCSD, 2015). According to the International Energy Agency (IEA) 2017 World Energy Outlook, foreign oil accounted for approximately 64% of China's total domestic demand in 2016, and foreign supplies are likely to account for some 69% by 2020. Moreover, approximately 80% of China's energy imports currently pass through the Strait of Malacca[14]. Hence, in the view of the Stockholm International Peace Research Institute (SIPRI), one of China's objectives is to create alternative overland energy routes to supply oil and gas from Central Asia, Southeast Asia, and Pakistan. Upgrading the Pakistani port of Gwadar, located on the southern corridor of the Belt, and construction of a network of pipelines through Central Asia, could help meet this objective by enabling energy supplies to bypass the Strait of Malacca (Ghiasy and Zhou, 2017).

These objectives, while they cannot be confirmed, suggest a much greater focus on China's economic and strategic interests than is apparent from official documentation and public statements about the BRI. It also suggests that, while other countries may clearly benefit from the Initiative, the international response, including from the EU Member States and institutions, should take account of the implications of China's broader strategic agenda. This argues for a more coordinated approach, based on full consideration of the implications for trade, competition and finance, than has been applied hitherto.

[14] The Strait of Malacca is a narrow stretch of water between the Malay Peninsula and the Indonesian island of Sumatra.

1.4. Specific initiatives

1.4.1. Bilateral engagement

To date, China's engagement with Europe on the BRI has been primarily through bilateral discussions with individual countries rather than with EU institutions. This has meant that much of the discussion of opportunities and risks has been informed by national perspectives and that a coordinated, pan-European perspective is only slowly emerging. From 2014, various EU Member States, as well as a number of non-EU countries (mainly in Central and Eastern Europe), have signed MoUs with China within the framework of the BRI[15]. For the purposes of this study, two categories of MoU require close investigation:

- those providing for a general framework of cooperation; and
- those concerning transport-related issues, infrastructure development or cooperation over customs procedures.

Table 3 below presents an overview of these MoUs, while Annex 2 provides a fuller description of the MoUs currently in place.

Table 3: MoUs under the BRI framework

Category	Description
General framework of cooperation under the BRI	Hungary and China signed a MoU on "Jointly Promoting the Construction of the Belt and Road" in June 2015.
	Romania and China signed a MoU for the joint development of the Silk Road Economic Belt within the framework of the Romania-China Joint Intergovernmental Commission for Economic Cooperation in June 2015.
	Bulgaria, the Czech Republic, Poland, Slovakia, and Serbia signed a MoU with China on "Jointly Promoting the Belt and Road Initiative" at the 16+1 Summit in Suzhou (China) in November 2015.
	Turkey and China signed a MoU on "Jointly Promoting the construction of the Belt and Road Initiative" before the G20[16] Summit in Antalya (Turkey) in November 2015.
	Latvia and China signed a "MoU on Belt and Road Cooperation" in November 2016.
	At the BRF in Beijing (China) in May 2017, Croatia, Albania, Bosnia and Herzegovina, and Montenegro signed a MoU with China on "Belt and Road Cooperation", and Greece signed a "2017-2019 Plan on Key Areas of Cooperation".

[15] For example, MoUs specifically targeted at promoting the BRI, or MoUs signed during official BRI meetings (such as the Belt and Road Forum for International Cooperation - BRF).

[16] The Group of Twenty (G20) is a forum for the world's major economies to collectively assess and address the most pressing global issues and shape global policy. The G20 is made up of 19 countries (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom and the United States) and the European Union (G20's official website).

Category	Description
MoU on transport-related issues, infrastructure development, or custom cooperation	Hungary and Serbia signed a MoU with China on modernisation of the railway link between Budapest and Belgrade in November 2014. Further agreements for the upgrade of this link were signed at the "16+1 Summit" in Suzhou in November 2015, and at the Belt and Road Forum in Beijing in May 2017.
	Albania and Montenegro signed a MoU with Chinese company Pacific Construction Group on the construction of the Blue Corridor motorway project[17] at the 16+1 Summit in Suzhou in November 2015.
	In March 2016, German Railways (Deutsche Bahn DB) and China Railways signed a MoU on further developing the New Eurasian Land Bridge.
	In June 2016, Poland and China signed a MoU on strengthening investment cooperation in logistics infrastructure.
	Bulgaria, Croatia, Latvia, and Lithuania signed a MoU on "Port and Harbour Industrial Park Cooperation" at the "16+1 Summit" in Riga (Latvia) in November 2016.
	The railways of China, Belarus, Germany, Kazakhstan, Mongolia, Poland and Russia signed an "Agreement for Further Cooperation on China-Europe Container Block Trains" at the Belt and Road Forum in Beijing in May 2017.
	Belarus, Turkey, and Uzbekistan signed an "Agreement on international transportation and strategy coordination" with China at the Belt and Road Forum in Beijing in May 2017.
	A number of countries including Greece, Belarus, Serbia, Switzerland, and Turkey signed a Joint Initiative on "Strengthening Standards Cooperation and Building" at the Belt and Road Forum in Beijing in May 2017. Further Agreements on customs cooperation have been signed by Poland in June 2016 and by the Netherlands and Poland at the Belt and Road Forum in Beijing in May 2017.

Source: Steer Davies Gleave analysis

As presented in Table 3, a number of the MoUs, which are specific to transport, concern the development of rail services and infrastructure, although road and maritime initiatives are also included. In addition, a number of MoUs relate to other areas, including financial cooperation, industry development, trade and the exchange of people.

Table 4 below summarises the number and timing of MoUs signed since 2014.

[17] The Blue Corridor or the Adriatic–Ionian is a project to construct a motorway along the entire eastern shore of Adriatic and Ionian Seas, from Trieste in Italy to Greece via Croatia, Montenegro and Albania.

Table 4: MoUs signed by European countries and China

Category	Country	General framework of cooperation under the BRI	MoU on transport/ infrastructure/ customs cooperation	MoU on other topics
EU Member States	Austria			2017
	Belgium			
	Bulgaria	2015	2016	
	Croatia	2017	2016	
	Cyprus			2017
	Czech Republic	2015		2016, 2017
	Denmark			
	Estonia			2015, 2017
	Finland			
	France			2017
	Germany		2016, 2017	
	Greece	2017		2017
	Hungary	2015	2014, 2015, 2017	2017
	Ireland			2017
	Italy			2017
	Latvia	2016	2016	
	Lithuania		2016	
	Luxembourg			
	Malta			
	The Netherlands		2017	
	Poland	2015	2016, 2017	2015, 2016, 2017
	Portugal			
	Romania	2015		
	Slovakia	2015		
	Slovenia			
	Spain			
	Sweden			2015
	United Kingdom			2016
Other European countries	Albania	2017	2015	2017
	Belarus		2017	2016, 2017
	Bosnia and Herzegovina	2017		2017
	FYROM			2017
	Moldova			2017

Category	Country	General framework of cooperation under the BRI	MoU on transport/ infrastructure/ customs cooperation	MoU on other topics
	Montenegro	2017	2015	2017
	Norway			2017
	Serbia	2015	2014, 2015, 2017	2017
	Switzerland		2017	2017
	Turkey	2015	2017	2017
	Ukraine			2017

Source: Steer Davies Gleave analysis

Table 3 and Table 4 demonstrate that a total of 20 EU Member States and 11 other European countries signed BRI-related MoUs with China between 2014 and 2017. Among EU Member States, Poland and Hungary have been particularly active in engaging with China under the BRI framework. Similarly, all of the non-EU countries shown have MoUs with China in place, with Serbia arguably having the most developed framework of understanding (possibly reflecting the importance of the Budapest-Belgrade high-speed railway link, a major investment project under the BRI framework, discussed further below). Cooperation in respect of transport, infrastructure and customs procedures is particularly strong among Central and Eastern European countries.

1.4.2. The "16+1 Format"

In 2011, before the announcement of the BRI, China and 16 Central and Eastern European states established the "16+1 Format" framework. It was intended to enable greater cooperation between China, 11 EU Member States (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia) and five Balkan countries (Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia) in investment, infrastructure and transport, finance, science and technology, education and culture. The framework is based on annual summits attended by the Prime Ministers of the countries involved (including China), but representatives of the European Commission and the European Investment Bank attended the most recent summit, held in Riga in 2016, as observers (Le Corre, 2017).

Notwithstanding its broader purpose, the "16+1 Format" has been a means of furthering the development of the BRI since 2013. More specifically, those attending the 2015 summit in Suzhou (China) (Ministry of Foreign Affairs of the People's Republic of China, 2015), declared their intention to:

- work to reinforce a safe and efficient network of connectivity between China and Europe, on land, at sea and in the air, and jointly build the New Eurasian Land Bridge Economic Corridor;
- build the China-Europe Land-Sea Express Line[18];
- establish an association for building cooperation in transport and infrastructure; and
- strengthen cooperation in manufacturing of equipment, including rail transport, ship and ocean engineering equipment, aviation equipment and automobiles.

The 2016 summit in Riga (Latvia) provided further confirmation of an increasing focus on BRI-related projects and initiatives. At the closure of the summit, participants declared that they would make concerted efforts to develop synergies between the BRI and relevant EU initiatives such as the Trans-European Transport Network (TEN-T), more generally support the development of transport routes between Europe and Asia, and establish multimodal logistics centres throughout the area of the New Eurasian Land Bridge. They also committed to improving the international supply chain and border crossing rules on key transport corridors and the connection from the Port of Bar (Montenegro) to the railway network in Central and Eastern Europe.

However, there are mixed views on whether the "16+1 Format" has enabled material progress with the BRI. Bogdan Góralczyk (Centre for Europe at the University of Warsaw, Poland) has argued that, apart from the annual summit meetings, few of the ambitious goals originally set were implemented by May 2017 (Góralczyk, 2017). Similarly, Dragan Pavlićević (Department of China Studies at Xi'an Jiaotong-Liverpool University of Suzhou, China) notes that there is "*palpable frustration*" within China and the other countries involved regarding the speed and substance of developments under the "16+1 Format". Nevertheless, the latter underlines that the portfolio of Chinese infrastructure and development projects, equity investments, and acquisitions in the region is growing (Pavlićević, 2016). We summarise next the status of a number of projects in participating countries as part of a broader review of BRI initiatives in the following section.

1.4.3. Specific projects

It is difficult to identify which projects are associated with the BRI, for a number of reasons:

- The BRI continues to develop in response to further engagement between China and the wide range of other countries involved. Moreover, as already noted, there is no structured programme of projects or clearly defined budget allowing ready identification of the investment schemes covered.
- There appears to be no single branch of the Chinese Government responsible for the BRI, and many of the investment projects underpinning the Initiative are sponsored by provincial-level government (Nikkei Asian Review, 2017). More generally, a wide range of stakeholders is involved through a large number of different frameworks (including bilateral MoUs as well as multilateral fora such as the "16+1 Format"). Hence, it is not possible to identify a single, comprehensive source of relevant projects.
- Similarly, there are multiple funding sources for BRI-related projects, including Chinese financial institutions providing loans and Chinese companies providing equity. Again, this makes it difficult to identify comprehensive and consistent information across the full range of projects.
- Many schemes referred to as BRI projects were either begun before the Initiative was announced or would have taken place in its absence (European Think-tank Network on China – ETNC, 2016). This further complicates the task of preparing a list of clearly defined projects that are clearly within the scope of the BRI.

[18] The China-Europe Land-Sea Express Line is a fast intermodal transport route connecting the Chinese port of Ningbo and the Greek port of Piraeus (by sea), and the latter with Hungarian capital city of Budapest (by rail).

These observations were confirmed by several stakeholders interviewed during the project. A number noted that the BRI is a platform for communication and promotion of an overall vision rather than a programme of specific investment.

Nevertheless, this research sought to identify information on the nature, level of funding and status of a large number of projects that are within the scope of the BRI and benefit from Chinese investment, drawing on information reported by official sources and relevant financial institutions as well as the general and trade press.

The key sources used in this research, set out in Table 5 below, were supplemented by the sources reported in Annex 1: References.

Table 5: Sources of information on BRI projects

Type of source	Organisation
Financial institution	Silk Road Fund Asian Infrastructure Investment Bank New Development Bank Export-Import Bank of China China Development Bank
Other	Chinese Xinhua News Agency (2017) Inframation[19] Center for Strategic and International Studies[20] South East Europe Transport Observatory[21]

Source: Steer Davies Gleave analysis

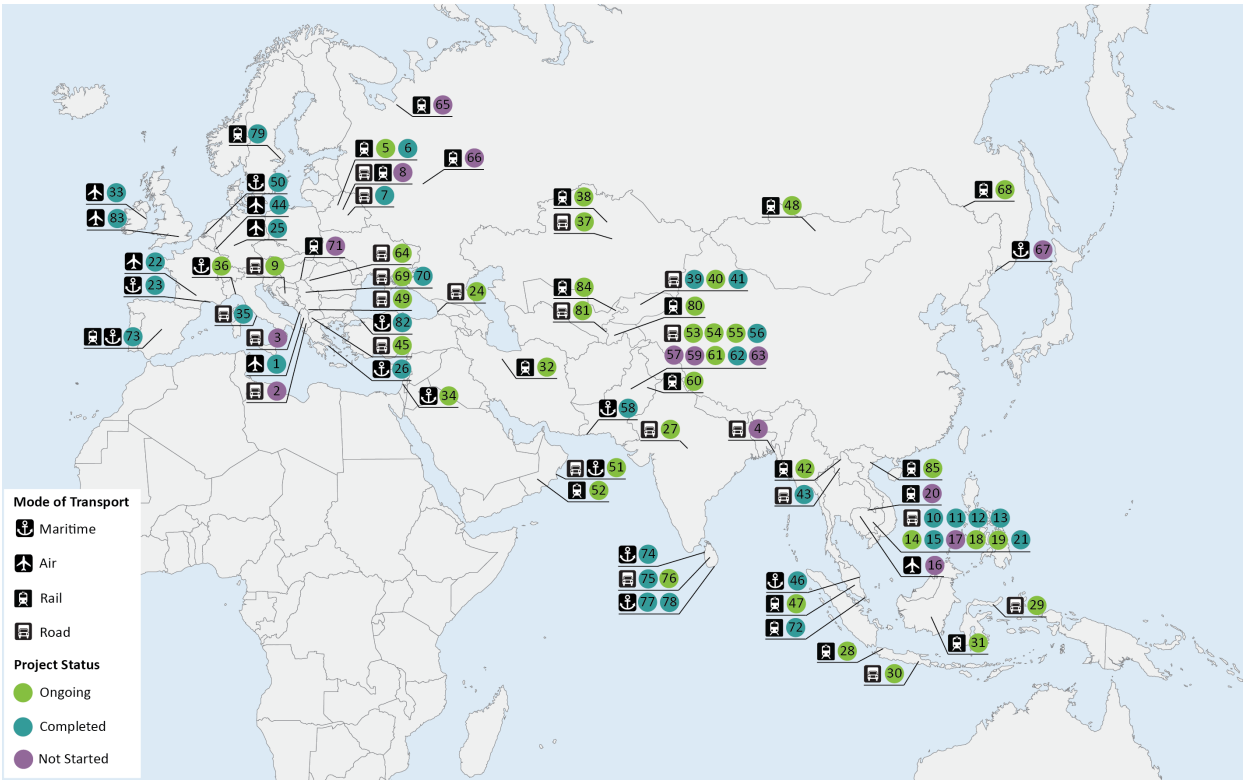
This information was also used to prepare a summary, provided in Annex 3, which includes more than 80 transport-related projects benefitting from Chinese financial support. Map 3 below shows the location of these projects and the modes of transport covered.

[19] "Inframation" is an Acuris Company Group specialising in providing information on infrastructure transactions (https://www.inframationnews.com).

[20] The "Center for Strategic and International Studies" (CSIS) is a non-profit policy research organisation which also developed a database of investment projects in Asia (https://reconnectingasia.csis.org/database/projects).

[21] South East Europe Transport Observatory (SEETO) is a regional transport organisation established by the MoU for the development of the Core Regional Transport Network, signed on 11 June 2004 by the Governments of Albania, Bosnia and Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia as well as the United Nations Mission in Kosovo and the European Commission (http://www.seetoint.org).

Map 3: Mapping of BRI transport-related projects (2010-2017)



Source: Steer Davies Gleave analysis[22]

Map 3 and the information in Annex 3 confirm the wide range of BRI projects, covering road, rail and port investment in a large number of countries. Of the projects identified, the majority are already underway or completed, with relatively few not yet started. However, given the difficulties in obtaining information reported above, this may reflect a lack of disclosure of planned projects rather than the progress of the Initiative. In summary, the following should be noted:

- 11 major investment projects in EU Member States received financial support from China. This support appears to be primarily in the form of equity finance for, or acquisition of shares in, ports, railway organisations and airports. The importance of equity investment reflects the relatively low number of greenfield infrastructure projects (which tend to require extensive debt finance) and the fact that loan finance for EU projects tends to be provided by EU-based financial institutions. The total Chinese investment in EU Member States is estimated to be around €4.8 billion[23].
- A concentration of 15 investment projects occurs at the borders of the EU, in a number of Balkan and Central and Eastern European countries. Most are road or rail projects, with an aggregate capital cost of approximately €7.7 billion[24].
- A number of port investment projects are located along the entire maritime trade route connecting Asia and Europe, including in Malaysia, Sri Lanka, Pakistan, Oman, Israel, Turkey, Greece, Italy, France and Spain. The total port investment is estimated to be around €6.2 billion.

[22] The numbers displayed in Map 3 refer to the list of transport projects shown in Table 16 in Annex 3.

[23] The figure includes the acquisition of the Irish aircraft leasing company Avolon for €2.5 billion. It excludes budget for cross-border projects between EU Member States and non-EU countries, which accounted for a total of €2.7 billion (please see Annex 3 for more details).

[24] Projects are in: Albania, Belarus, Bosnia and Herzegovina, FYROM, Montenegro, Serbia and Turkey. The €7.7 billion includes the €2.7 billion mentioned in the previous footnote for cross-border projects involving both EU Member States and non-EU countries.

In view of their importance for connections with the EU transport network, the study sought to identify the level of Chinese investment in projects on the borders of the EU, in particular projects in Central and Eastern European countries participating in the "16+1 Format". Table 6 below shows that the total value of investment is estimated to be some €6.3 billion (excluding investment in a number of significant projects in Albania, the value of which is not available from published information).

Three major projects, a motorway project in Bosnia Herzegovina, motorway connections across Romania, Serbia and Montenegro, and the Budapest-Belgrade high-speed railway link, account for 65% of the total.

Table 6: Chinese investment and projects in "16+1 Format" countries

Country	Mode of Transport	Project title	Parties engaged	Approximate project value	Status
Albania	Air	Acquisition of Tirana International Airport	China Everbright and Friedmann Pacific Asset Management	N/A	Completed in 2016
Albania	Road	Completion of Albania Arber motorway to FYROM and Bulgaria	Albanian Government and Export-Import Bank of China (based on MoU)	N/A	Not Started
Albania-Montenegro	Maritime	Construction of the Blue Corridor motorway that will stretch from Trieste (Italy) to Greece via Croatia, Montenegro and Albania	Albanian Government, Montenegro's Government and Pacific Construction Group (based on MoU)	N/A	Not Started
Bosnia Herzegovina	Road	Motorway Banja Luka-Mlinište	Export-Import Bank of China	€1,400 million	Ongoing
FYROM	Road	Construction of Kicevo-Ohrid and Miladinovci-Stip motorway sections	Export-Import Bank of China	€581 million	Ongoing
Montenegro	Road	Construction of the motorway connection between the port of Bar and Boljare; Smokovac-Uvač-Mateševo section (part of European Motorway XI)	Export-Import Bank of China, Government of Montenegro	€807 million	Ongoing

Country	Mode of Transport	Project title	Parties engaged	Approximate project value	Status
Romania-Serbia-Montenegro	Road	Construction of highway corridor sections from Timisoara (Romania) to Bar (Montenegro), via Belgrade (Serbia) (part of European Motorway X)	Export-Import Bank of China	€1,028 million	Ongoing
Serbia	Road	Corridor XI, Motorway E-763 Belgrade-Southern Adriatic (Obrenovac-Ub and Lajkovac-Ljig sections)	Export-Import Bank of China	€600 million	Ongoing
Serbia	Road	Pupin bridge in Belgrade	Export-Import Bank of China	€216 million	Completed in 2014
Serbia-Hungary	Rail	Belgrade-Budapest high-speed railway link	Export-Import Bank of China	€1,711 million	Not Started

Source: Steer Davies Gleave analysis

The Budapest-Belgrade high-speed railway serves to demonstrate some of the issues arising from Chinese investment within the EU and/or crossing the EU's borders. The European Commission investigated the project to determine whether it complied with EU legislation on tendering (Financial Times, 2017). Recent press reports (Budapest Business Journal, bne IntelliNews, and Dailynews Hungary, 2017) indicate that the Hungarian Prime Minister, Viktor Orban, announced a new tender for the upgrade of the Hungarian stretch of the Budapest-Belgrade rail line during the summit between China and Central and Eastern European countries held in Budapest on 27 November 2017. The contracting entity is Chinese-Hungarian Railway Nonprofit Ltd., owned by China Railway International Corporation and China Railway International Group (85%), and by Hungarian Railways (15%).

In addition, Serbia and the Export-Import Bank of China (China Exim Bank) signed a loan agreement for the financing of a double section of track between Belgrade and Stara Pazova in May 2017 (Railway Pro, 2017), and work on this section of the line was begun at an official opening ceremony held in Belgrade on 28 November 2017 (Xinhua News Agency, 2017). The upgrade work will be carried out by China Communications Construction Company (CCCC) and China Railways International.

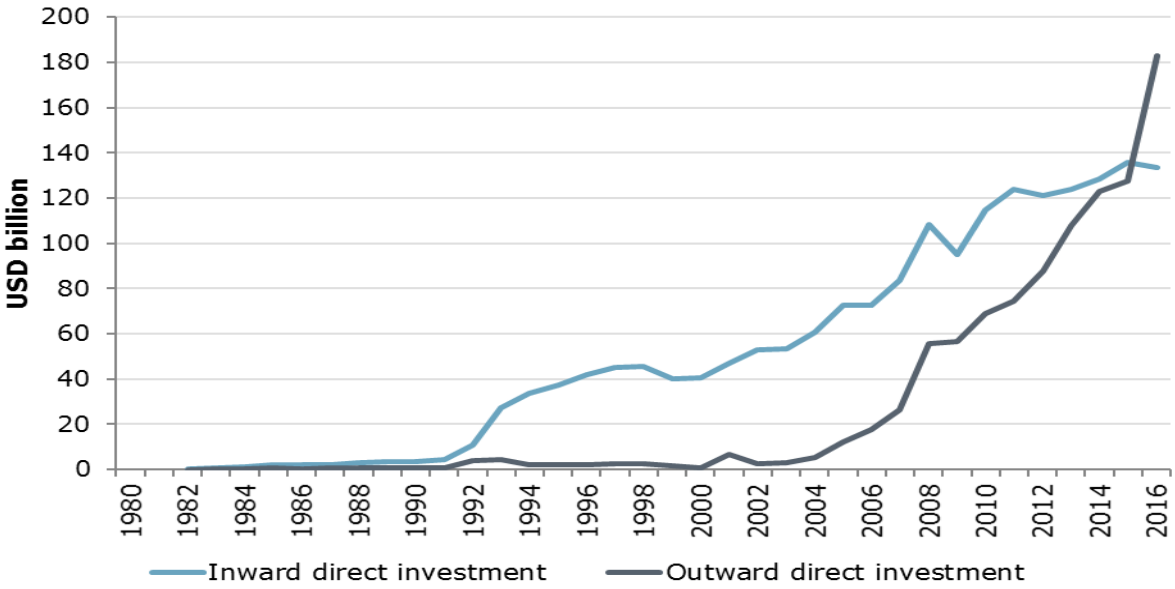
Notwithstanding that the project now appears to be proceeding, it demonstrates the potential for Chinese investments to conflict with broader EU objectives concerning public procurement and competition. This issue is further analysed in the discussion of opportunities and threats in Chapter 3.

1.5. Financial support from China

1.5.1. China's outward direct investment

In 2016, China's total outward direct investment (ODI) has been estimated to be between USD 170 billion and USD 217 billion[25]. This reflects the gradual shift in the composition of the country's overseas capital recorded in the years following the global financial crisis of 2007-2009. While such capital was primarily held as foreign-exchange reserves[26] at the beginning of the century, the share of ODI substantially increased after the crisis, with the result that foreign exchange reserves fell from around 80% of the country's total overseas assets in 2009 to below 50% in 2016. ODI accounted for 20% of China's overseas assets in 2016, having risen from only 5% in 2005 (Zixuan and Heiwai, 2017). By 2016, the value of ODI exceeded the value of inward direct investment (IDI), as shown in Figure 1 below.

Figure 1: China's outward and inward direct investment, 1980-2016



Source: UNCTAD (2017)

ODI to countries covered by the BRI has accounted for a significant proportion of the total in recent years, as shown in Table 7 below. Moreover, while total ODI fell by 66.4% during the first half of 2017, a reflection of tighter controls on capital outflows published by China's State Council (The General Office of the State Council of the People's Republic of China, 2017), the fall in ODI to BRI countries, while substantial, was not as great. Indeed, while the State Council required Chinese companies to restrict investment in sectors regarded as particularly speculative or risky (such as real estate, entertainment and hospitality), it sought to encourage investment in BRI projects supporting the development of trade links such as the enhancement of infrastructure and technology development (OBOReurope, 2017). Other official statements also confirm that the increased scrutiny of ODI by the Chinese authorities is not intended to restrict investment in BRI projects (Global Times, 2017).

[25] Ministry of Commerce of the People's Republic of China: USD 170 billion; UNCTAD: USD 183 billion; and China's State Administration of Foreign Exchange (SAFE): USD 217 billion.

[26] Foreign-exchange reserves are holdings of cash, bank deposits, bonds, and other financial assets denominated in currencies other than the national currency.

Table 7: Chinese ODI to BRI countries as a share of the total

Year	Total ODI (USD billion)	Percentage change in total ODI	ODI to BRI countries (USD billion)	Percentage change in ODI to BRI countries	ODI to BRI countries as a share of the total
2015	118.0	-	14.8	-	12.5%
2016	170.1	+44.2%	14.5	-2.0%	8.5%
2017 (Jan-Jul)	57.2	-66.4%	7.7	-46.9%	13.5%

Source: Steer Davies Gleave analysis of data from the Ministry of Commerce of the People's Republic of China (2017)

1.5.2. Investment by Chinese and international financial institutions

This study also investigated lending to, and equity investment in, BRI projects by Chinese banks and international financial institutions. Since 2013, most loans to BRI projects have come from two of the three Chinese "policy banks" (the China Development Bank (CDB) and the China Exim Bank[27]), as well as from the "big four" state-owned Chinese commercial banks (the Bank of China, the China Construction Bank, the Industrial and Commercial Bank of China, and the Agricultural Bank of China). In addition, some funding has been provided by the Silk Road Fund (SRF), the Asian Infrastructure Investment Bank (AIIB) and the New Development Bank (NDB) operated by the BRICS countries (Brazil, Russia, India, China, and South Africa).

The remainder of this section discusses the role and contribution of the main financial institutions before summarising the evidence on future financing commitments underpinning BRI investment. These commitments should be seen in the context of total overseas lending by the Chinese banking sector of USD 115 billion in 2016 (SAFE, 2017).

The **CDB** is a Chinese financial institution established in 1994 under the direct jurisdiction of the State Council. As one of the three "policy banks", it is primarily responsible for raising funding for large infrastructure projects. According to its Chairman, Hu Huaibang, the focus of the bank's international operations is supporting the BRI. By the end of 2016, the CDB had approved committments worth USD 160 billion to countries covered by the BRI, providing finance for projects in energy, mining, high technology industries, transportation and infrastructure (CDB, 2017), and was planning more than 500 additional projects requiring a combined investment of USD 350 billion (CDB, 2017).

The **China Exim Bank** is a state-owned "policy bank" supporting China's foreign trade, investment and international economic cooperation. The bank plays a crucial role in promoting economic growth and structural adjustment as well as in implementing the "going global" strategy. As of May 2017, it had financed more than 1,200 projects in over 50 countries participating in the BRI, accounting for investment of over RMB 640 billion (€84 billion at current exchange rates) (China Exim Bank, 2017).

Launched by China in February 2014, the **SRF** was created to foster investment in infrastructure projects in countries covered by the BRI. Its initial capital of USD 10 billion was established through contributions from China's foreign exchange reserves (65%), the

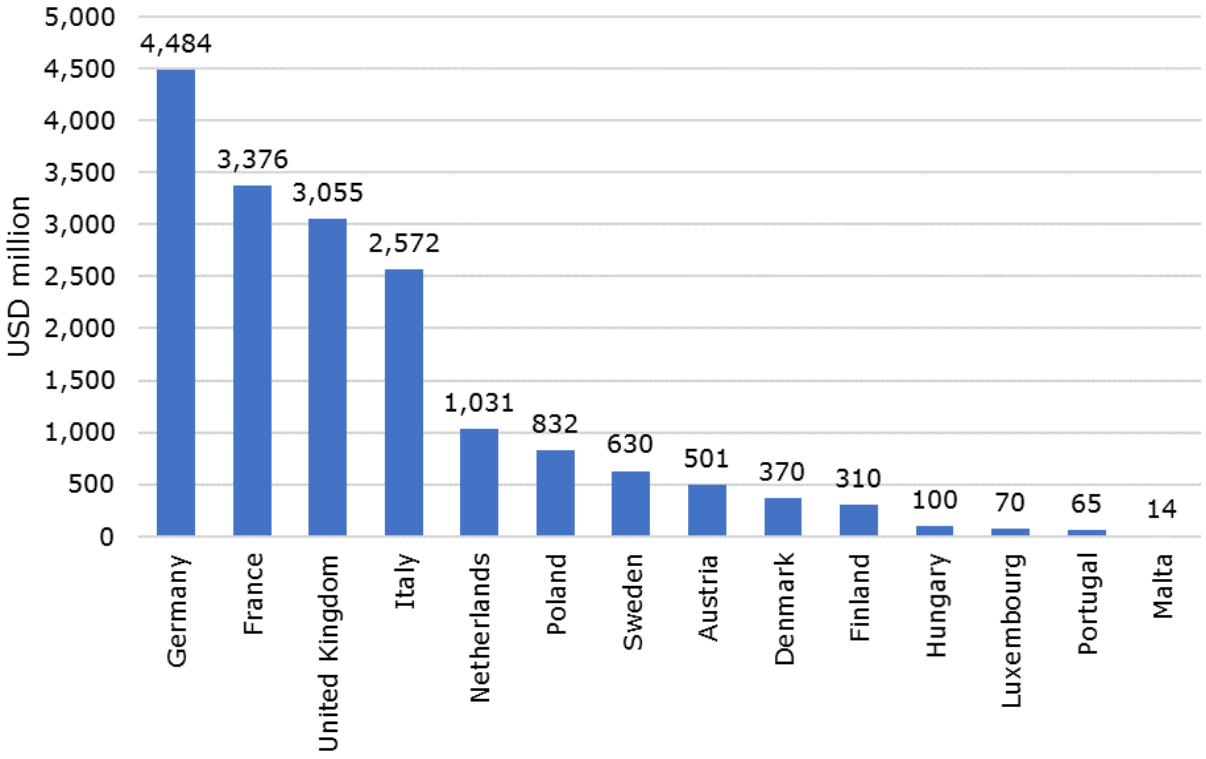
[27] The third "policy Bank" is the Agricultural Development Bank of China (ADBC).

China Investment Corporation (15%), the China Exim Bank (15%), and the CDB (5%) (SRF, 2017). It is expected that further capital contributions will be provided by both domestic and foreign investors, and that the SRF will eventually have access to currencies other than the RMB. China's President Xi Jinping announced at the opening ceremony of the Belt and Road Forum in 2017 that China will increase financial support for the BRI through additional funding for the SRF of RMB 100 billion (or USD 15 billion[28]).

The **AIIB** is an international financial institution focused on supporting infrastructure construction. The bank was proposed by China in October 2013 at the Asia-Pacific Economic Cooperation Summit in Bali (Indonesia). The Articles of Agreement (AOA) have been finalised and open for signature by Potential Founder Members since June 2015, and the bank was formally established in Beijing in December 2015 (Xinhua News Agency, 2017). AIIB is currently supported by 56 other member countries from Asia, Europe, Oceania, Africa and South America (37 regional members and 19 non-regional members) and there are a further 22 prospective members.

The initial capital of the AIIB amounts to USD 100 billion (Weiss, 2017), of which USD 93 billion had been subscribed by June 2017. Notwithstanding some initial reluctance to support the bank among European countries, the AIIB's membership now includes 14 EU Member States, accounting for a combined capital contribution of USD 17.4 billion (19% of the total). A breakdown of this contribution is shown in Figure 2 below.

Figure 2: AIIB capital subscription by EU Member States, June 2017



Source: AIIB

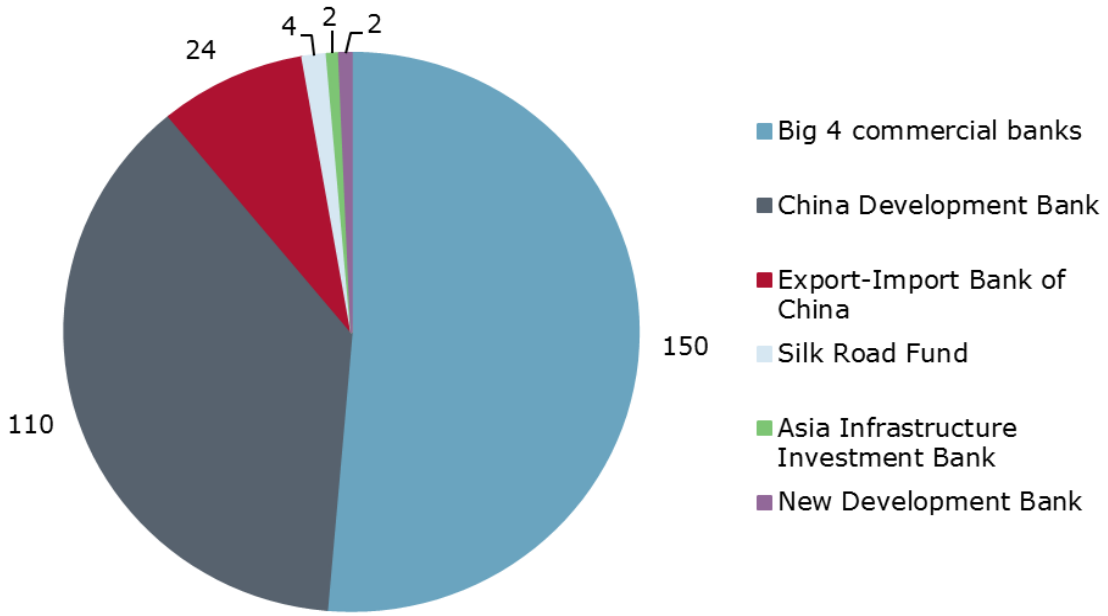
The **NDB** was established to support infrastructure investment and sustainable development in the BRICS countries and other emerging economies (NDB, 2017). It was formally launched in Shanghai (China) in July 2015 with an initial capital injection of USD

[28] Exchange rate on 25 October 2017, 1 RMB = 0.15073 USD.

100 billion and a further reserve currency pool also with a value of USD 100 billion. The bank's primary focus is the financing of infrastructure projects, and it is authorised to lend up to USD 34 billion annually. Although the NDB was not established to support the BRI, the inclusion of Russia, India and China among its founding members, and its focus on encouraging greater financial and development cooperation, mean that it is clearly aligned, to some degree, with BRI objectives.

As shown in Figure 3 below, to date the recently-created international financial institutions have so far provided only limited financing for BRI projects. Of the total financing of USD 292 billion that had been made available by the end of 2016, 51% was provided by the "big four" commercial banks and a further 38% by the CDB, with the newly created institutions accounting for only 3%. This data, initially published by the Financial Times, is broadly consistent with a study by Grisons Peak's China Investment Research, which indicated that 192 financial commitments backed by the Chinese Government, representing some USD 135 billion[29], were granted by the Chinese "policy banks" between 2013 and 2015 (prior to the involvement of the SRF and AIIB) (China Investment Research, 2016).

Figure 3: Outstanding loans and equity investment by the Chinese banking sector



Source: Financial Times (2017)
Note: Values in USD billion at the end of 2016

However, it should be noted that financial support for the BRI from a range of sources, including the SRF, is expected to increase. During the opening ceremony of the Belt and Road Forum for International Cooperation in Beijing (China) on 14 May 2017, China's President Xi Jinping indicated that additional funding of RMB 840 billion, equivalent to USD 127 billion, was being committed. As shown in Table 8, the funding sources will include a new overseas RMB Fund.

[29] Only loans signed/committed by Chinese Government institutions, and validated (in most cases) by the Ministry of Finance of the recipient country, are included.

Table 8: BRI funds pledged by China's President Xi Jinping in March 2017

BRI funding initiative	Budget (RMB)	Budget (USD)
SRF	RMB 100 billion	USD 15 billion
New overseas RMB Fund	RMB 300 billion	USD 45 billion
CDB (support for cooperation in financing, infrastructure and industrial capacity)	RMB 250 billion	USD 38 billion
China Exim Bank (support for cooperation in financing, infrastructure and industrial capacity)	RMB 130 billion	USD 20 billion
Chinese Government (support for countries and international organisations participating in the BRI)	RMB 60 billion	USD 9 billion
TOTAL	**RMB 840 billion**	**USD 127 billion**

Source: Steer Davies Gleave analysis of Xinhua News Agency (2017)[30]

China's continuing focus on the BRI as a major investment opportunity is further confirmed by trends in the global balance of financial commitments made in recent years. As shown in Table 9, Chinese loans and other forms of financial commitment to projects in Africa accounted for only 20% of the total in 2015, having fallen from 40% in 2013. By contrast, the share taken by Asia increased from 21% to 38% over the same period, while the share taken by Europe also increased slightly. This is consistent with greater prioritisation of projects located in the countries covered by the BRI.

According to Grisons Peak's China Investment Research, the overall fall in Africa's share masks significant variation between regions within the continent, with coastal countries receiving substantially more investment in 2015 than in 2013. This is also consistent with the prioritisation of BRI-related investment, which, as already noted, includes the development of a maritime corridor linking Chinese ports with the Mediterranean Sea via the East African coast and the Suez Canal.

Table 9: Allocation of Chinese financial commitments by region, 2013-2015

Region	Allocation in 2013	Allocation in 2015
Africa	40%	22%
Asia	21%	38%
Europe	13%	15%
Latin America	23%	26%
Oceania	3%	0%

Source: Grisons Peak's China Investment Research data (2016)[31]

[30] Exchange rate on 25 October 2017, 1 RMB = 0.15073 USD.
[31] Percentages for the year 2015 do not sum up to 100% due to rounding.

1.6. Cooperation between China and EU institutions

1.6.1. EU policy towards China

Cooperation between China and the institutions of the EU must be seen in the context of broader EU policy towards China set out in the "Elements for a new EU Strategy on China" (EC, 2016) and the "Council Conclusions on EU Strategy on China" (Council of the European Union, 2016). According to the strategy defined by these two documents, relations between the EU and China must be underpinned by principles of reciprocity, a level-playing field, and fair competition across all areas of cooperation. In addition, a key objective of the strategy is to improve infrastructure, trading, digital, and people-to-people connectivity to deliver benefits for all EU Member States as well as for China.

More recently, the European Commission has explained how it is seeking to deepen and rebalance the EU's relations with China, notably through greater access for EU-based organisations interested in investment in China's markets (EC, 2017). To that end, over the past four years it has been negotiating with China on a Comprehensive Agreement on Investment (EC, 2017)[32], which is intended to provide for a more level playing field for business, to open new market opportunities for EU Member States and China, and to pave the way for a broader trade agreement. A key objective for the EU is to promote international standards that can reduce costs and barriers which prevent imports to the EU of Chinese products that do not conform to EU requirements.

1.6.2. EU policy towards the BRI

The EU's broader aims in building a relationship with China have underpinned its approach to the BRI. In May 2017, at the Belt and Road Forum held in Beijing, Jyrki Katainen, Vice-President of the European Commission, set out the EU's vision for improving connectivity between Europe and Asia. He stressed the urgent need for an investment agreement between the EU and China ensuring reciprocity in market access conditions for investors, and highlighted that schemes to improve connectivity should adhere to a number of principles including rules on market access and compliance with international standards. He also noted the importance of ensuring that such schemes complemented existing networks and policies.

While a comprehensive agreement embracing these principles is not yet in place, the EU and China have already signed an MoU to set up a "Connectivity Platform", providing a forum for coordinating EU and Chinese infrastructure investment relating to TEN-T and the BRI. A key objective of the "Connectivity Platform" is to ensure that investment takes place within a framework of fair and undistorted competition based on regulatory convergence, while promoting cooperation in areas such as technology, engineering, construction and the development of standards. However, as the MoU was only signed in September 2015, progress on these issues is still at an early stage[33].

An important initial area of work for the "Connectivity Platform" is the financing of investment on priority transport corridors. An Expert Group on Investment and Financing has been established to review a list of potential TEN-T-related projects proposed by participating countries with a view to exploring sources of finance. These are shown in Table 10 below.

[32] The EU-China 2020 Strategic Agenda for Cooperation considers an EU-China Investment Agreement as central to the EU's long-term bilateral relations with China. Negotiations for the Investment Agreement began in November 2013.

[33] Based on the outcomes of the "First Working Group Meeting of the EU – China Connectivity Platform" (Brussels, Belgium, 20-22 January 2016), and the "Second Chairs' Meeting of EU – China Connectivity Platform" (Brussels, Belgium, 1 June 2017).

Table 10: Pilot projects considered under the EU-China Connectivity Platform

Country	Proposed project	Country has signed transport-related MoU with China?	Project overlaps with Chinese investment?
Bosnia and Herzegovina	Corridor 5c Highway Project	No	Yes
Bulgaria	Hemus motorway project	Yes	No
Bulgaria	Black Sea motorway project	Yes	No
Bulgaria	Restoration of the design parameters of the Ruse-Varna Railway Line Project	Yes	No
Croatia	Rijeka-Zagreb-Budapest project	Yes	No
Hungary	V0 Rail Cargo Line bypassing Budapest	Yes	No
Hungary	Hungary-Serbia Railway	Yes	Yes
Italy	Genoa Port breakwater project	No	No
Italy	Trieste Integrated Rail Hub	No	No
Latvia	North Sea – Baltic Corridor	Yes	No
Poland	Adjusting Odra River Waterway (E30) to the international waterway standards	Yes	No
Poland	Silesian Channel	Yes	No
Poland	Middle and lower Vistula cascade (E40 and E70 waterways)	Yes	No
Poland	Warszawa-Brzesc connection (E-40 waterway)	Yes	No
Serbia	Projects in the Orient/East-Med Corridor in the Western Balkans Region	Yes	Yes (Partially)
Slovakia	Košice Intermodal Terminal	No	No
Slovakia	Leopoldov Intermodal Terminal	No	No
Slovakia	Bratislava Trimodal Terminal	No	No
Slovenia	Railroad Project from Koper to Divača	No	No

Source: Outcomes of the "First Working Group Meeting of the EU – China Connectivity Platform" (Brussels, Belgium, 20-22 January 2016), and the "Second Chairs' Meeting of EU – China Connectivity Platform" (Brussels, Belgium, 1 June 2017)

The table shows that few of the projects under review overlap with investment being undertaken by China. More generally, as the projects were identified on a voluntary basis by countries participating in the Expert Group, it is not clear that they provide a basis for assessing key priorities reflecting the need to coordinate project activity along corridors connecting to TEN-T. Hence, there is a risk that work on financing of potential projects is premature, pending a fuller analysis of current and future links between TEN-T and the BRI. Given the difficulties of defining the geographical and project scope of the BRI noted in Sections 1.1.3 and 1.3.3, this is likely to be challenging but would be an important first step in ensuring effective coordination of policy and investment strategy.

Notwithstanding the intention of the "Connectivity Platform" to align principles and priorities underpinning relevant policy initiatives, Chinese investment under the "16+1 Format" continues to raise questions about the compliance of BRI-related projects with the relevant framework of EU legislation and standards (European Parliament, 2017). As discussed further in Chapter 3, the interviews with stakeholders have highlighted concerns about the willingness and ability of Chinese investors and contractors to comply with EU market principles and standards. These issues are considered further in Chapter 4 and Chapter 5.

2. THE EFFECT OF THE BRI ON TRANSPORT PATTERNS

KEY FINDINGS

- **Predicting future patterns of freight transport is complicated** by uncertainties concerning what products will be made, where they will be produced, and how transport operators and logistics companies will organise their services to connect producers with consumers.
- The EU's trade with the Far East is now dominated by trade with China. **Shipping carries around 11 million TEUs from the Far East to Europe but only around 5 million TEUs from Europe to the Far East.**
- **When ports and airports become congested, freight can be diverted elsewhere**, but this is less likely to be possible with rail freight, which must use a limited number of routes between the Far East and Europe.
- **By 2040, rail may carry 3 million TEUs of freight between the Far East and Europe, around 2.5 million diverted from shipping and 0.5 million diverted from air**. This will primarily use the corridor through Kazakhstan, Russia and Belarus to carry relatively high value freight to northern Europe.
- Less urgent freight remaining on shipping to the Mediterranean may continue further by ship, rather than transferring to rail at the first port of call in the EU.
- More urgent freight carried by air is likely to continue to travel to a range of EU airports, either on dedicated freighter aircraft or in the holds of passenger aircraft.
- With shipping times from Far East to the North Sea up to one week longer than to the Mediterranean Sea, rail would be most attractive for transport to Europe north of the Alps, including to EU Member States bordering the North Sea and Baltic Sea.
- There would be a **potential reduction of up to 15% in traffic from China to North Sea ports**. However, ports such as Rotterdam and Zeebrugge might, in principle, gain traffic from China transferring from rail to ship to reach the United Kingdom and Ireland. There would be **no net change in the use of Mediterranean ports**.

2.1. Introduction

This chapter discusses the potential effects of the BRI on the modes and routes used to trade goods between Europe (including the EU) and the Far East (including China).

Firstly, the potential scale and nature of trade was examined, which included the effects of the BRI by 2040, when many infrastructure investments currently being planned will be in use and mature.

Secondly, the following two issues were analysed:

- the potential for the BRI to result in changes in transport patterns; and
- the extent to which, in the EU, these changes in transport patterns will affect TEN-T.

The next paragraphs briefly summarise uncertainties which limit the scope to make detailed predictions about the BRI and its consequences.

2.1.1. Uncertainty in patterns of trade

Several factors limit the scope to make detailed predictions about future trade flows:

- Trade is a dynamic process, reflecting the changing relative advantages of extracting raw materials, creating intermediate products, processing them into final products, and selling them to consumers, in different locations.
- Airlines, shipping companies and railway operators have wide flexibility to link different airports, ports or freight terminals, either directly or indirectly, alone or in alliances, depending on their assessment of their relative commercial value.
- Logistics companies have wide flexibility to use these air, shipping and rail networks, or to build their own, to carry some or all of their traffic, depending on their assessment of how best to serve their customers.
- In the longer term, the raw materials and products being traded will continue to change. By 2040, products which have not yet been invented will be manufactured in factories which have not yet been built at locations selected by companies which do not yet exist.

2.1.2. Uncertainty in the BRI and its effects

As set out in Chapter 1 (please see Section 1.2.3), the BRI itself is not a clearly-defined programme of investment, or a statement of the capacity and level of service by air, sea and rail that it will bring about. The broad geographical scope of the BRI, covering 65 countries (please see Table 1 in Section 1.2.2), means that its effects will not be limited to trade between Europe and Asia. Even within Eurasia:

- improved transport to and within the EU will facilitate trade to non-EU states such as Switzerland and Norway; and
- improved transport to and within China will facilitate trade to other states through the Far East.

This means that, while the intended focus of this study may be trade between the EU and China[34], it is in practice not possible to distinguish such trade from the wider trade between Europe and the Far East.

2.1.3. Uncertainty in future infrastructure capacity and allocation

There is also uncertainty in the availability of future capacity at and between airports, ports and rail terminals across Eurasia and other areas covered by the BRI and, where capacity is constrained, in how it is allocated in the short term and expanded in the long term. Investments attributed to the BRI are only a small part of the overall investment which will in any case be made by the owners and managers of air, sea, rail and road infrastructure across Eurasia. While some infrastructure managers have detailed and long term plans, others can and do respond to rising demand at short notice through relatively small or cheap increases in capacity. In the absence of long term plans, however, it is not possible to say either where specific capacity constraints will arise or where and how operators,

[34] The terms of reference request a comprehensive description of the One Belt, One Road (OBOR) initiative, which we refer to as the BRI, but request analysis of the most suitable transport routes between China and the EU.

logistics companies and customers will adapt to mitigate or eliminate the effects of any constraints.

A specific issue is the capacity of the railways, which may be dominated by long-distance or even transcontinental freight traffic, but in much of the EU are dominated by passenger traffic which is intra-EU, domestic, regional or even suburban. Capacity which appears to be available for rail freight, along a transport corridor or at junction, may be rapidly absorbed by a decision to introduce or expand urban commuter services in or around a city[35]. Such services may be introduced at relatively short notice, depending on the growth in an urban area, the public transport policies of the competent authorities, and the extent to which these result in investments which result in reductions in the capacity available to rail freight.

Within the EU, "Railway Recast" Directive 2012/34/EU[36] sets out rules for the allocation of railway infrastructure capacity. Section 3 of Chapter IV of the Directive requires that specific capacity allocation rules shall be laid down[37] and that there shall be cooperation in the allocation of infrastructure capacity on more than one network[38]. However:

- The Directive does not require that the capacity allocation rules prioritise freight (whether domestic, intra-EU, with non-EU states or BRI-related). Capacity may be allocated to passenger services for up to 15 years[39], even if subsequent requests for capacity for BRI-related flows would have greater economic, social or environmental benefits.
- The Directive does not apply to railways outside Europe across which BRI-related freight would need to travel, including those of China, Kazakhstan and Russia. Provision of rail capacity for BRI-related trains within the EU does not guarantee that suitable capacity will be available over the entire route on which the trains (or connecting ferry services[40]) would operate.

2.2. The routes and nodes used by flows resulting from the BRI

For the purposes of this research, the World Cargo Database (WCD) owned by MDS Transmodal (MDST) was used to analyse:

- the scale and nature of freight flows in the area covered by the BRI;
- the scope for their growth, the potential impact of the BRI; and
- the EU transport system's readiness.

The WCD[41] holds data on worldwide containerised cargo from 1996 to the present date and includes an estimated 99.9% of global containerised trade. The database provides quarterly forecasts to the end of 2040 by commodity type and pair of countries. Within the WCD:

[35] The port of Felixstowe in the United Kingdom is the seventh busiest container port in the EU and on the TEN-T core network. It handles around 3.7 million TEU per year, over 0.9 million of them by rail, on up to 32 trains per day. Rail access is by a single track line shared with local passenger services to the town of Ipswich.
[36] Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area Text with EEA relevance.
[37] Article 39.
[38] Article 40.
[39] Article 42 provides for "framework agreements", which may be for a period of 15 years, allocating capacity for services using specialised infrastructure which requires substantial and long-term investment.
[40] Some BRI-related traffic travelling mainly by rail may need maritime connections to reach its destination. Therefore, constraints at ports or on ferries may be as critical as constraints on railways.
[41] MDST's analysis is based on updates to the World Cargo Database as of August 2017.

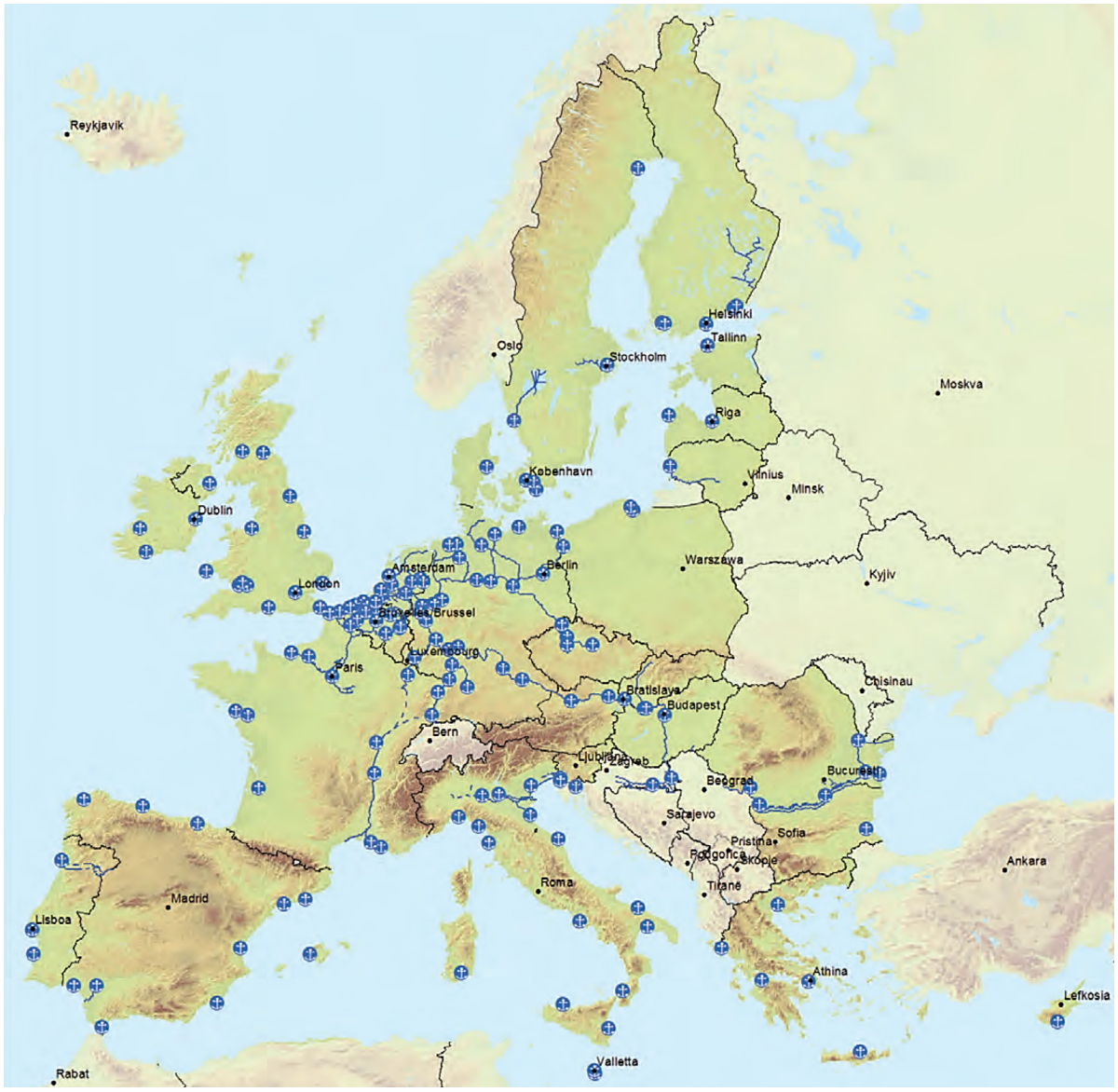
- EU Member States are recorded separately.
- China is subdivided into three regions: central, northern and southern.

Freight travelling to or from airports, ports or freight terminals in China might in practice be travelling to or from other countries in the Far East[42]. Freight travelling to or from airports, ports or freight terminals in the EU might in practice be travelling to or from non-EU European states such as Norway or Switzerland.

2.2.1. Sea freight in 2016 and 2040

Map 4 below shows the ports and inland waterways on the TEN-T core network. The EU has ports on the Black Sea, Mediterranean Sea (including the Aegean, Adriatic, Tyrrhenian and Balearic Seas), North Atlantic Ocean, North Sea and Baltic Sea. These provide a wide range of access points for shipping from outside the EU.

Map 4: TEN-T core network: ports and inland waterways



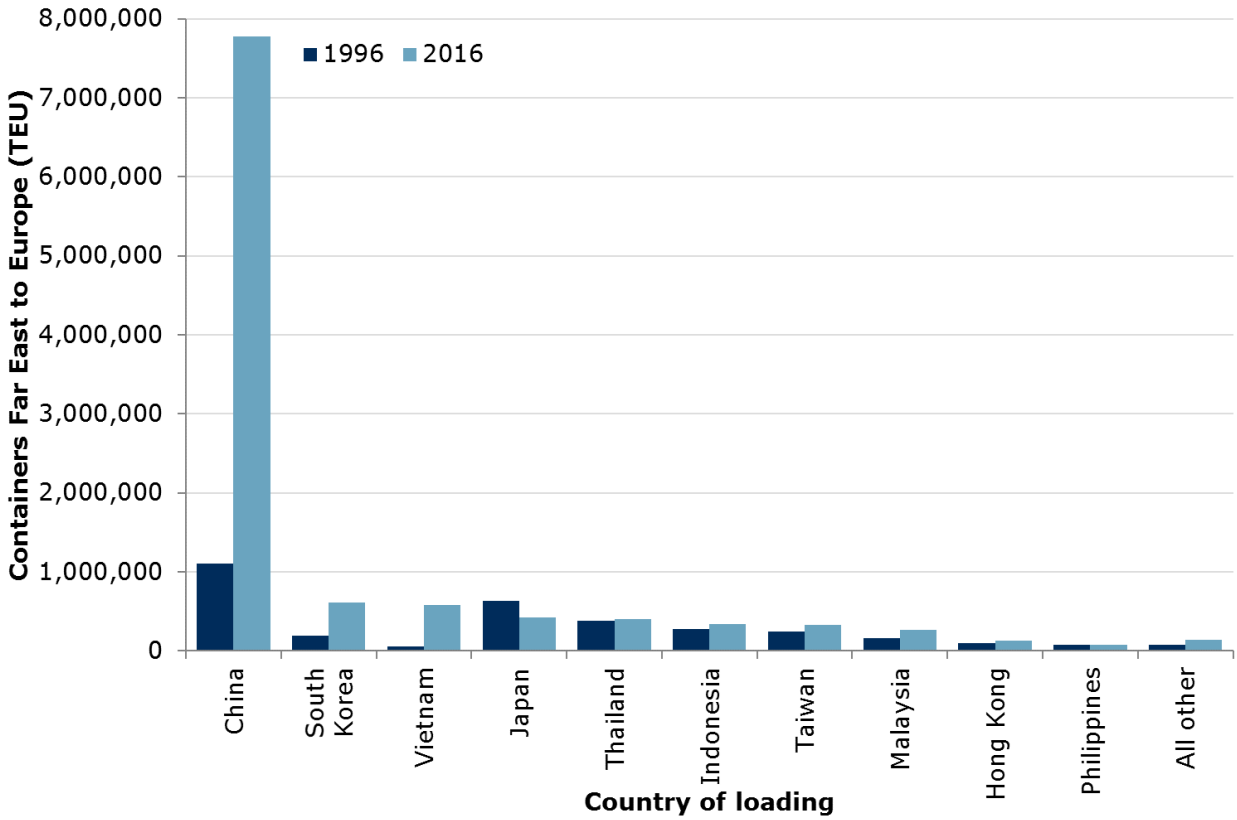
Source: European Commission (2013)

[42] In this study, the Far East is defined as Brunei, Cambodia, China, Hong Kong, Indonesia, Japan, Laos, Macau, Malaysia, Mongolia, Myanmar, North Korea, the Philippines, Singapore, South Korea, Taiwan, Thailand, Timor-Leste and Vietnam.

Maritime freight (other than bulk goods such as coal, gas or oil) is carried in containers which are successively "stuffed" with goods at a point of origin, "loaded" onto a ship at a port of origin, "discharged" from a ship at a destination port, and "stripped" or emptied at destination. The volume of goods is most commonly measured in TEU, an abbreviation of twenty-foot equivalent unit, the content of a twenty-foot long container. A forty-foot container, the most common length, is therefore equivalent to 2 TEU.

Figures 4 to 7 below summarise the volumes of loaded containers which are loaded and discharged on flows between ports in the Far East and ports in the EU, measured in TEU. As explained above, however, the EU Member States in which containers are loaded and discharged may not be the final destination states[43].

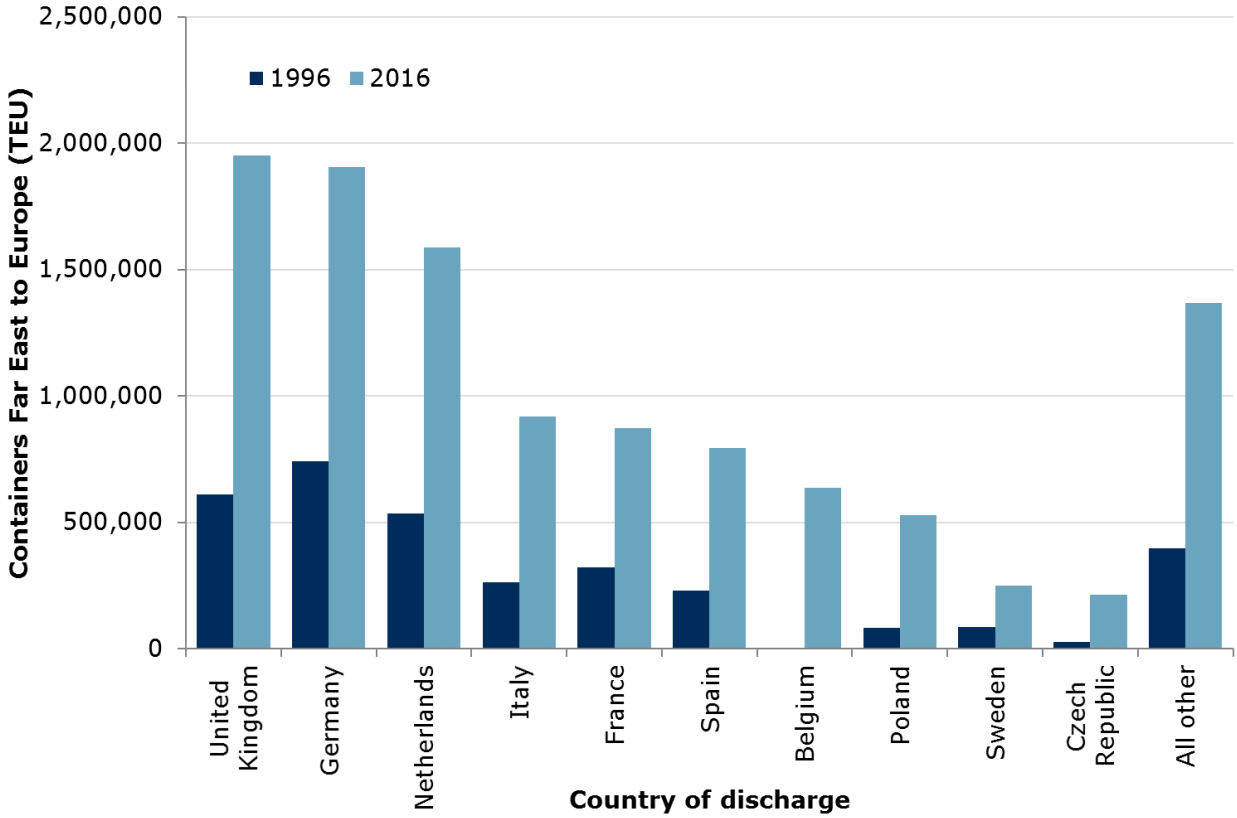
Figure 4: Loaded containers from the Far East to Europe: country of loading



Source: MDST World Cargo Database

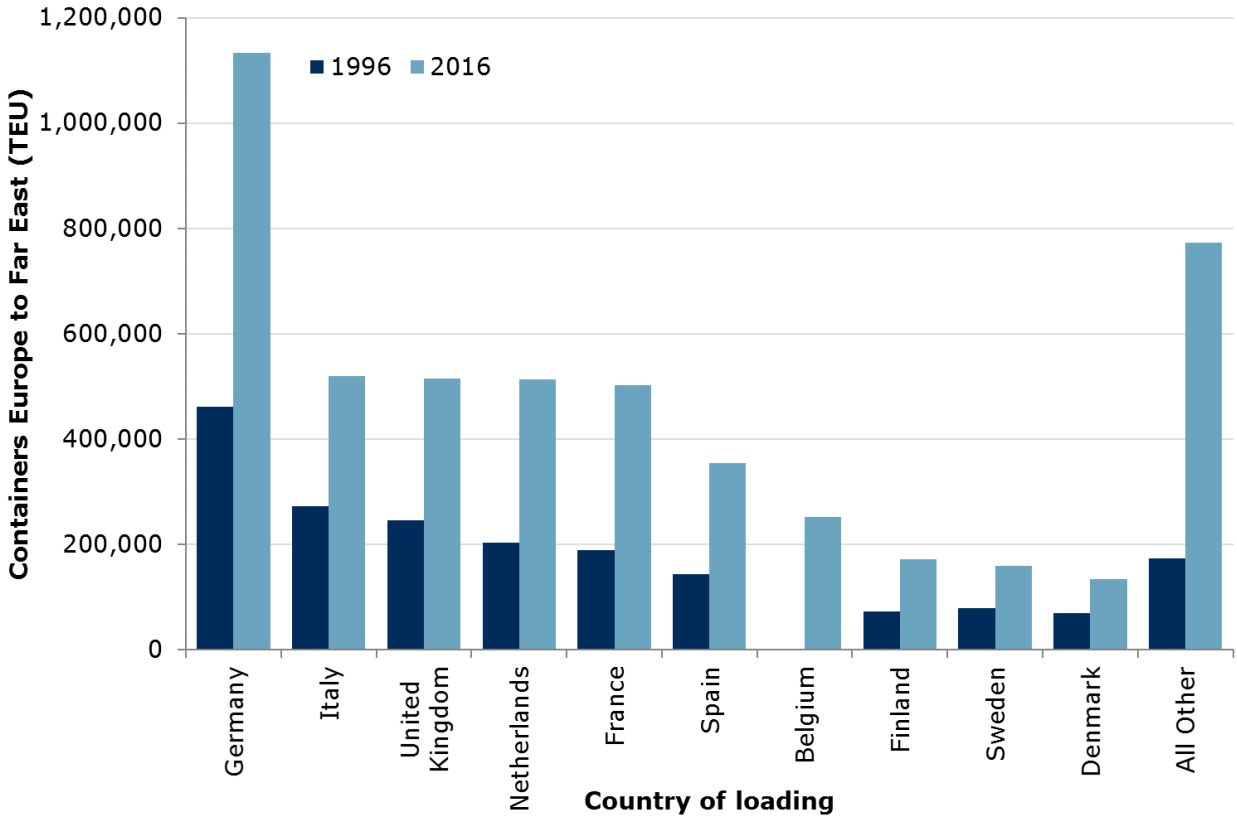
[43] Please note that the country where custom controls are executed is the country of discharge. This is the reason why Czech Republic is included in Figure 5 below despite it has not access to the sea.

Figure 5: Loaded containers from the Far East to Europe: country of discharge



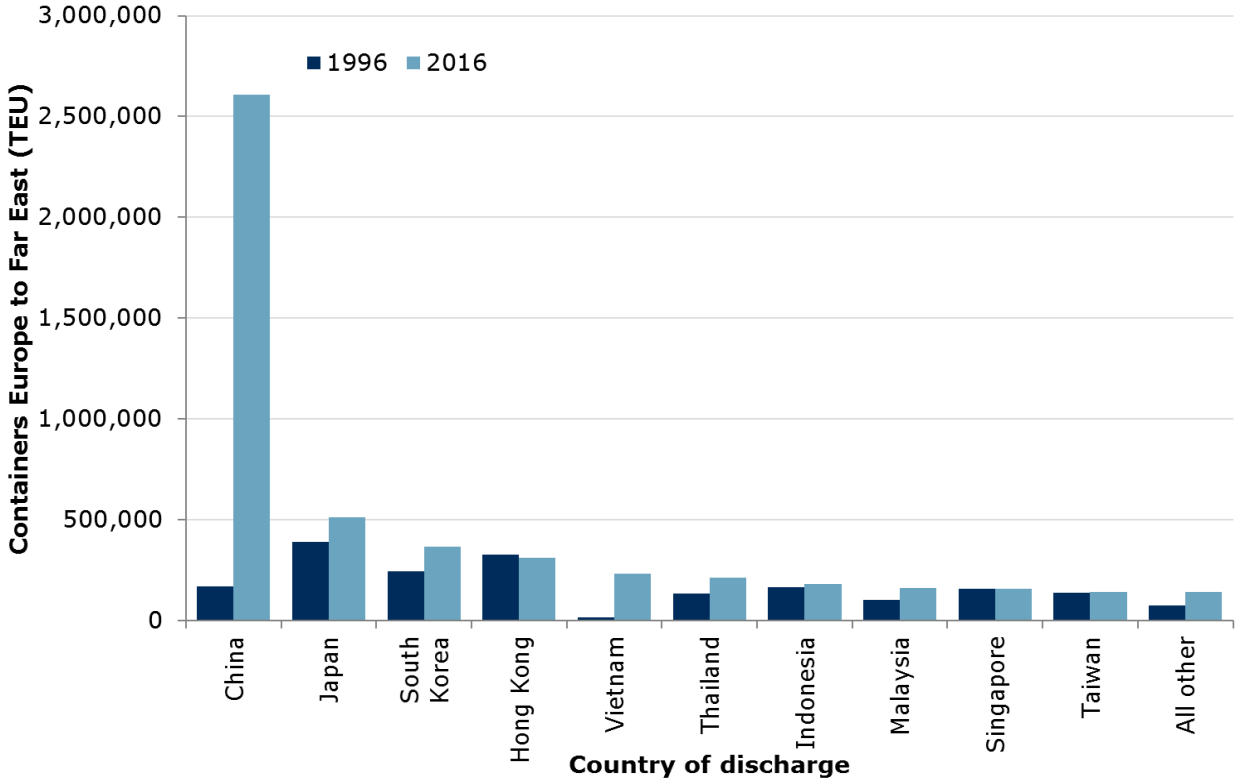
Source: MDST World Cargo Database

Figure 6: Loaded containers from Europe to the Far East: country of loading



Source: MDST World Cargo Database

Figure 7: Loaded containers from Europe to the Far East: country of discharge



Source: MDST World Cargo Database

Figure 4 illustrates the recent growth in loaded containers from the Far East to EU ports, from just over TEU one million in 1996 to about TEU eleven million in 2016. Other than China, no state loads more than one million containers to Europe.

Figure 5 shows the points at which loaded containers are discharged in the EU. A large proportion are discharged at ports in the United Kingdom, Germany, the Netherlands and Italy, before travelling onwards to the points at which they are stripped. Containers discharged in Rotterdam in the Netherlands, or Genoa (Genova) or Trieste in Italy, for example, may continue by river barge, train or truck to other EU Member States or to landlocked and non-EU Switzerland.

Figure 6 presents the corresponding flows of containers loaded at ports in the EU for travel to the Far East. The largest number is loaded at German ports, followed by smaller numbers loaded at ports in Italy, the United Kingdom and the Netherlands.

As demonstrated in Figure 7, over 2.5 million of these containers are discharged in China, compared with almost eight million loaded in China shown in Figure 4. The total flows shown in these two Figures are just over 11 million loaded TEU from the Far East to the EU and just over 5 million loaded TEU from the EU to the Far East. Allowing for the need to return empty containers, in which transport can be offered at very low prices, this means total two-way traffic of just over 22 million TEU in 2016.

The volume of containerisable shipping traffic westbound from the Far East to the EU grew by 235% between 1996 and 2016, equivalent to an average annual growth of over 6.2% per year. Future freight flows will be affected by factors such as changes to markets, changes to transport and logistics facilities and services, and capacity constraints which

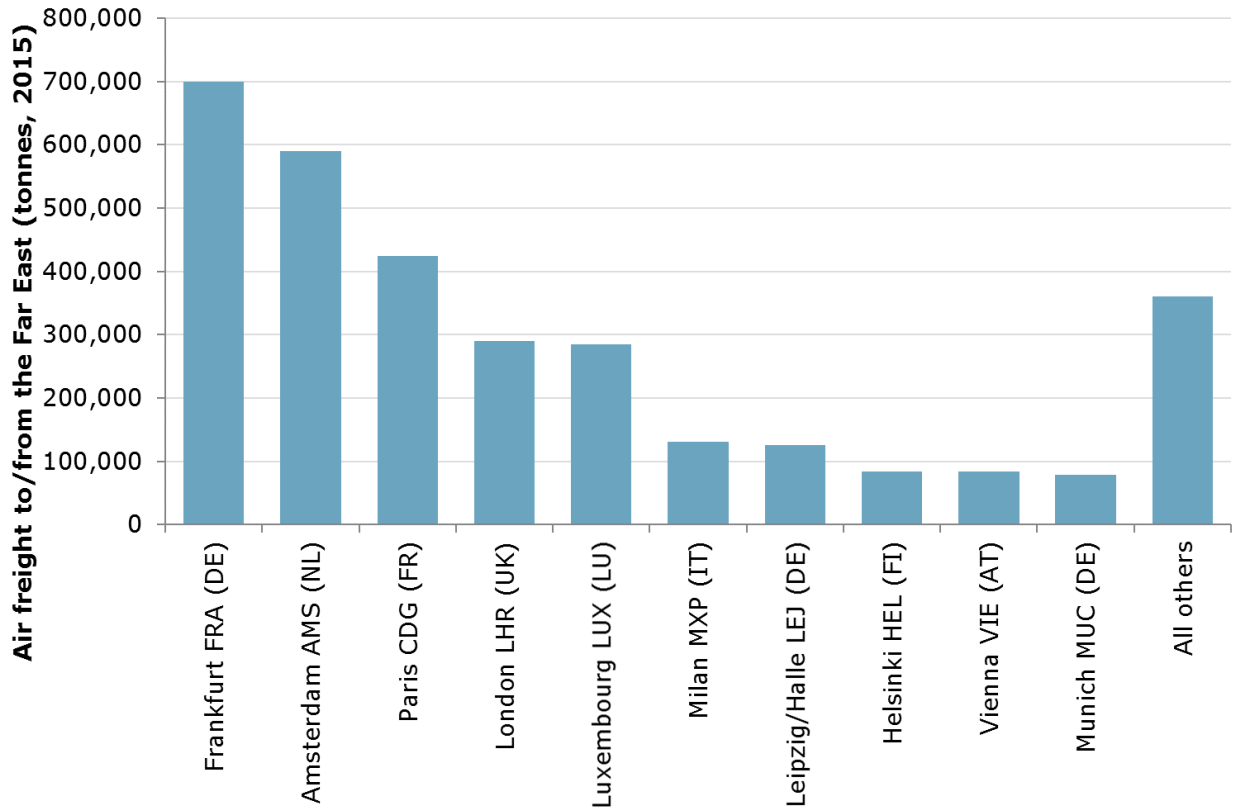
cannot be predicted reliably at a detailed level, for the reasons set out at the beginning of this chapter.

In this research, a range of approaches to forecasting the growth in trade in the area covered by the BRI was reviewed. For the purposes of assessing the EU's readiness for the BRI, it was that assumed that the trade between the Far East and the EU will further grow by 80% between 2016 and 2040, equivalent to a slower average annual growth of 2.5% per year[44]. This means that the total two-way traffic would reach around 40 million TEU in 2040.

2.2.2. Air freight in 2016 and 2040

Eurostat data on air cargo to and from Europe were also examined in the course of this research and they are shown in Figures 8 and 9 below.

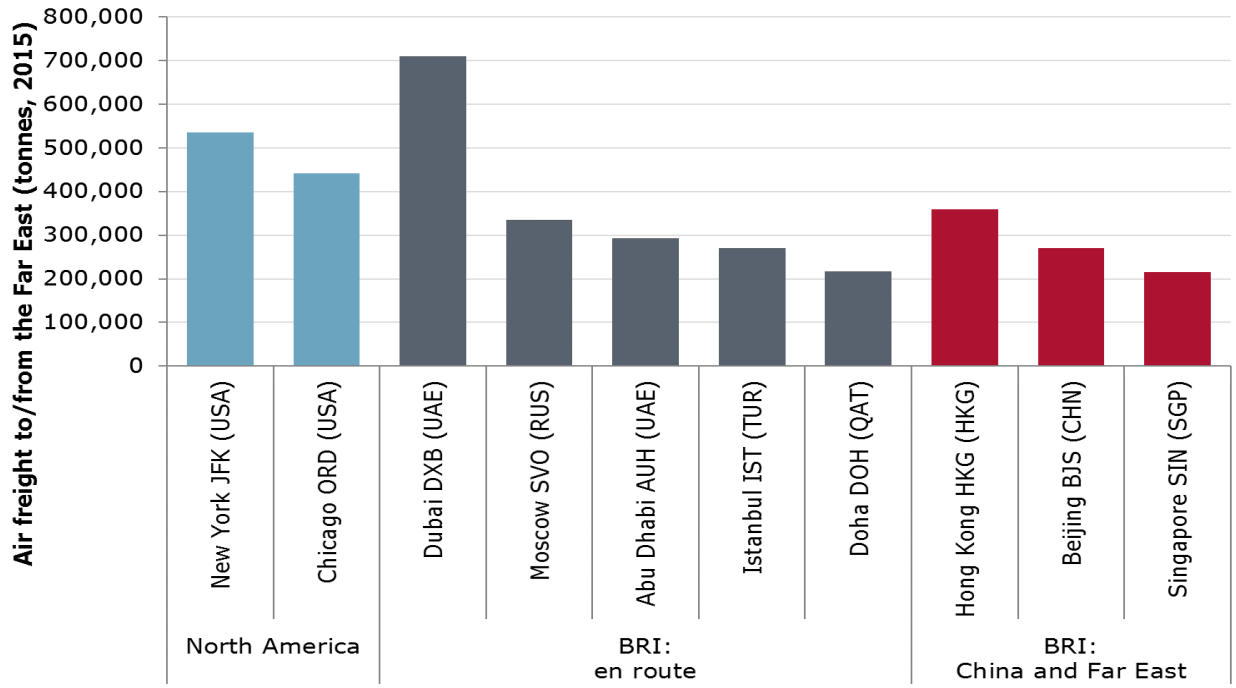
Figure 8: Ten largest airports in Europe by tonnes of airfreight (2015)



Source: Eurostat, analysed by MDST

[44] Forecasts are based on MDS Transmodal's analyses on their World Cargo Database.

Figure 9: Top ten airports by air freight to or from Europe



Source: Eurostat, analysed by MDST

A wide range of airports across Eurasia are used to carry air freight, whether in dedicated freighter aircraft or in the holds of passenger aircraft. Any investment in airports and air cargo attributed to the BRI must be seen in the context of the overall volumes of investment in airports throughout Eurasia (Liu, 2016)[45].

Some air cargo travels on direct flights between the Far East and the EU, with the most important airports in the Far East being Hong Kong (China), Beijing Capital (China) and Singapore. Other air cargo may travel via airports (including Istanbul (Turkey), Moscow (Russia), Doha (Qatar), Abu Dhabi (UAE) and Dubai (UAE)) "en route". Connections available at these airports allow freight from many points in the Far East to reach many points in the EU with a single change of aircraft. The five busiest EU airports for air freight, Frankfurt, Amsterdam Schiphol, Paris Charles de Gaulle, London Heathrow and Luxembourg, are all in northern Europe and within a few hours' drive of each other[46].

In 2016, the total two-way volume of air cargo between Asia and the EU was estimated at around 3.3 million tonnes. Moreover, it was assessed that this volume would grow by around 70% by 2040, to 5 million tonnes. These data refer to the volumes of cargo flying between individual airports, rather than first and last airports through which they pass, or their ultimate origin and destination. As with maritime freight, the airports between which air cargo flies may therefore not represent the ultimate ends of the journey.

Furthermore, the actual route, airline and aircraft on which any item of cargo flies may be determined at short notice by the availability of space on a suitable flight or series of connecting flights. As with maritime containers, air cargo arriving at EU airports may travel by road to other airports, in some cases crossing between EU Member States or to non-EU countries. For these reasons, it is not practicable to forecast either the airports or the ports through which freight traded between Europe and the Far East will travel.

[45] For example, China plans to build 66 new airports in a five-year period.
[46] From London Heathrow to Frankfurt is less than ten hours by road including crossing the English Channel.

2.2.3. Transfer from sea and air freight to rail freight

Trade data provider "Seabury"[47] reported that total rail freight between China and Europe grew from 114,000 tonnes in 2013 to 511,000 tonnes in 2016, an average growth rate of 54% per year. "DB Cargo"[48] reported that there are now 11 round trip train services per week providing sufficient capacity to carry 75,000 TEU per year.

This study estimated the extent to which cargo travelling by sea or air in 2016 might in future transfer to rail as a result of new and improved rail services, including those attributed to the BRI. To that end, several assumptions about the level of service that different modes would offer between the Far East and Europe were made. They are summarised in Table 11 below.

Additionally, the value of different commodities currently travelling between the Far East and Europe by sea and by air was examined, taking into account the value of a faster transit. It was estimated that, if cargo sent by sea had a value higher than €85,000 per TEU, it would be more cost-effective to shippers to send it by rail. Therefore, of the two-way sea freight of 40 million TEU (including return empty containers) in 2040, around 2.5 million TEU could transfer to rail at this price.

Table 11: Assumed air, rail and sea levels of service

Mode	Effective transit time	Unit transported	Price
Air	5 days	One kilogram	€2
		10 tonnes, or one 40-foot container (2 TEU)	€20,000
Rail	16 days	One 40-foot container (2 TEU)	€4,250
Sea	35 days port to port		€2,000

Source: MDST[49]

It was also observed that, if cargo sent by air had a value under €550 per kilogram, it would be more cost-effective to shippers to send it by rail. In practice, the average value of air cargo through European airports is currently approximately €200 per kilogram. This suggests that rail could be an attractive alternative to air if rail capacity were available between suitable end points with an acceptable overall transit time. This study estimated that around 50% of forecast two-way air freight in 2040 could transfer to rail, resulting in a further 0.5 million TEU of rail freight.

A 750-metre long container train can carry around 100 TEU, or 90 TEU with a 90% load factor. An operation with one train per day each way, on 300 days of the year, could therefore carry a two-way volume of around 54,000 TEU per year. A two-way volume of an additional 3 million TEU shifted to rail from maritime and air transport would therefore require around 50-60 trains each way per day, or around 2-3 trains per hour.

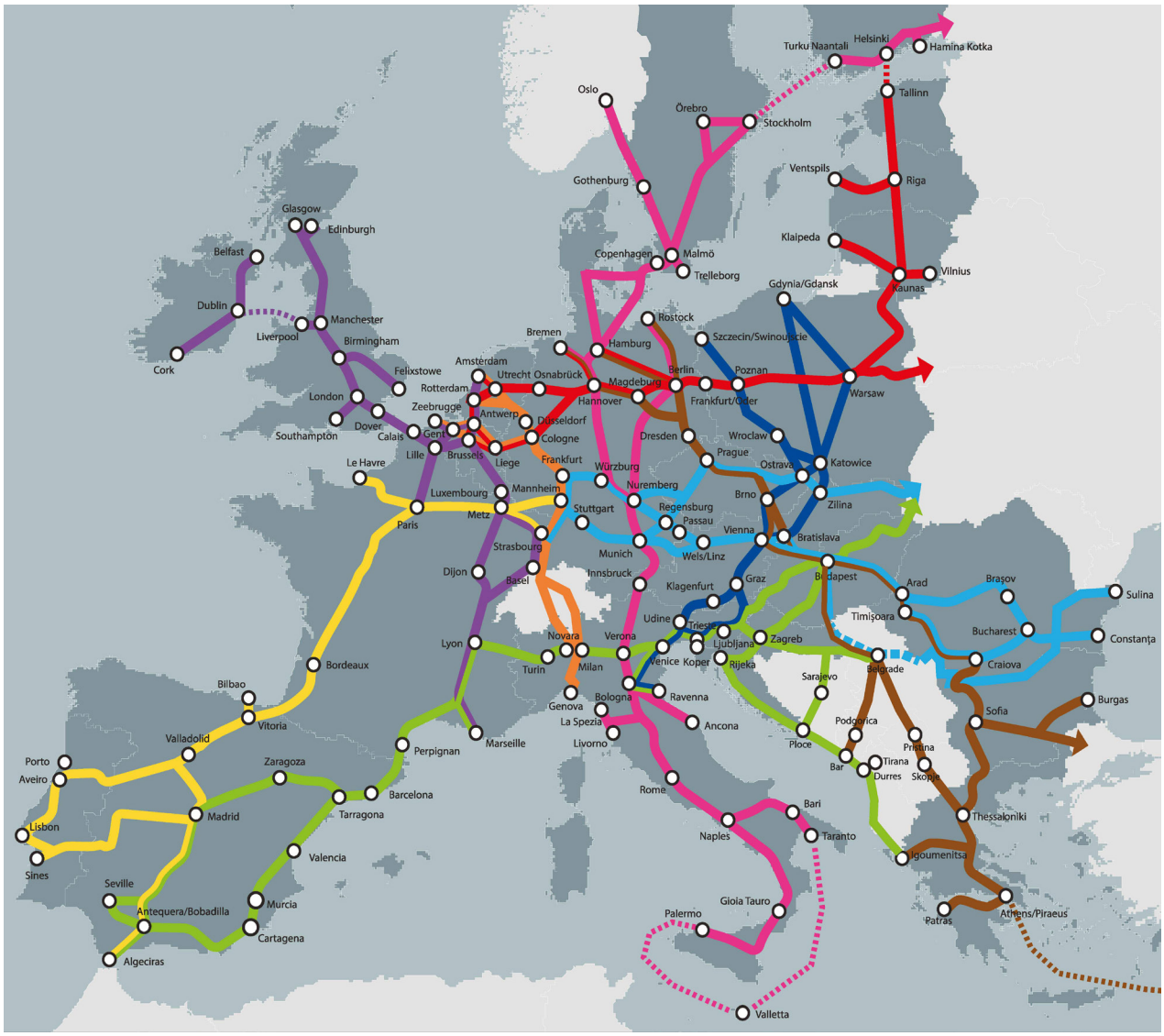
2.2.4. The choice of sea and rail routes

Map 5 below shows the possible approaches to the EU by land and sea and the TEN-T core network corridors.

[47] "Seabury" is a consultancy company providing trade and cargo database.
[48] DB Cargo is a German railway undertaking providing cargo services.
[49] Rail price is based on costs of €15 per train-kilometre.

Rail services between China and the EU currently operate mainly on the route through Russia, Belarus (where they transfer from the Russian, broad gauge (1,520mm) to the standard UIC gauge (1,435mm) at Brest) and Poland, using the North Sea – Baltic TEN-T Core Network Corridor (CNC)[50] at least as far west as Warsaw. In the course of this research, various rail routes from the Far East to the EU were assessed to determine the most likely ones for carrying rail freight in the future. To that end, the attractiveness of the time of the shipment was considered. Based on the above assumption, it was found that, with shipping times to the North Sea up to one week longer than to the Mediterranean Sea, rail would be most attractive for transport to Europe north of the Alps, including to EU Member States bordering the North Sea and Baltic Sea.

Map 5: TEN-T Core Network Corridors



Legend:

- Atlantic
- Baltic Adriatic
- Mediterranean
- North Sea-Baltic
- North Sea-Mediterranean
- Orient - East Med
- Rhine-Alpine
- Rhine-Danube
- Scandinavian-Mediterranean

Source: European Commission (2013)

[50] TEN-T Core Network Corridors are strategic transport corridors in the EU and they play a key role in the coordinated implementation of the TEN-T European policy; there are nine Core Network Corridors which were selected in 2013 based on three pillars: enhancing cross-border connections and removing bottlenecks, integrating different transport modes, and promoting technical interoperability.

Containers carried by rail, therefore, would primarily be those previously shipped to North Sea ports, and would travel along the route from Moscow (Russia) through Brest (Belarus) and Warsaw (Poland) to Berlin (Germany). Containers carried by sea would first pass or call at ports in Southeast Europe, such as Athens/Piraeus in Greece, where they could in principle be transferred to rail for travel further north. However, most freight of sufficiently high value to justify the additional costs of rail across the Balkans would already have switched to overland rail travel across Asia. It would therefore be more cost-effective for the remaining containers at Athens/Piraeus to continue by sea to ports in the north Adriatic Sea, such as Venice and Trieste in Italy, Koper in Slovenia and Rijeka in Croatia.

The overall effect of these changes would be as follows:

- The highest-value goods would continue to travel by air.
- Some high-value goods would transfer to rail, typically entering the EU through Russia or Belarus to reach Europe north of the Alps.
- Lower value goods would continue to arrive via the eastern Mediterranean, but because of their low value would tend to continue as far as possible by sea, such as to ports in the north of the Adriatic and Tyrrhenian Seas, rather than transferring to rail at the first opportunity.

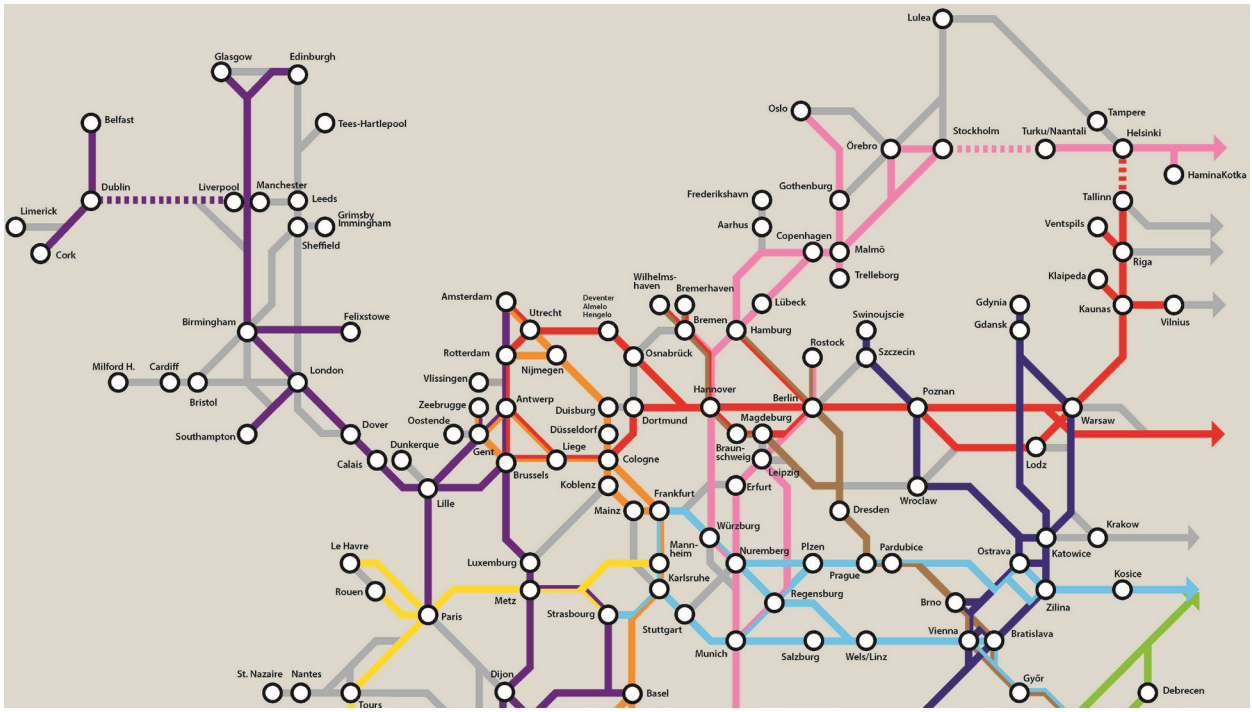
For shipping, it was estimated that these changes would result in no net change in the use of Mediterranean ports, but there could be a marginal reduction in the need for onward rail capacity from these ports. There would be a potential reduction of up to 15% in traffic from China to North Sea ports. However, ports such as Rotterdam and Zeebrugge might, in principle, gain traffic from China transferring from rail to ship to reach the United Kingdom and Ireland.

For rail to carry such flows would require capacity not only on the TEN-T network, and on the wider EU rail network, but also in Belarus, Russia, Kazakhstan and China. At present, the principal flows of rail freight on these routes are between China and Russia, within Russia itself, and between Russia and the EU. The current capacity of the rail route through Kazakhstan is around 25 million tonnes per year and the current capacity of the Trans-Siberian route may be around 100 million tonnes per year. Of the 16.5 million tonnes per year between China and Kazakhstan, less than 1 million tonnes is intended for further transport to/from the EU. A flow of 3 million TEU, or around 21 million tonnes, between China and the EU would add only around 2% to the total rail freight carried within Russia.

This suggests that end-to-end traffic between China and Europe may be small compared with shorter-distance traffic, which may in turn be well within the current capacity of the existing infrastructure. As traffic grows, however, a key question for both the EU and China may be how other railways use and allocate their rail capacity.

Assuming that sufficient end-to-end capacity is available between China and the EU, the focus of future rail freight flows, including those attributed to the BRI, is likely to be the North Sea-Baltic TEN-T CNC from Brest to Warsaw. Map 6 below presents a schematic diagram of the TEN-T network north of the Alps and shows the large parts of the EU which can be reached from this route.

Map 6: TEN-T core network and corridors: routes through Warsaw



Legend:

- Atlantic
- Baltic Adriatic
- Mediterranean
- North Sea-Baltic
- North Sea-Mediterranean
- Orient - East Med
- Rhine-Alpine
- Rhine-Danube
- Scandinavian-Mediterranean
- Other core networks

Source: European Commission (2013)

Some freight trains through or around Warsaw (Poland) currently continue to Berlin and Duisburg in Germany, but, by 2040, services may diverge to a range of destinations:

- south via Katowice in Poland to Hungary and Austria, Slovakia and the Czech Republic, and onwards to southern Germany, Switzerland and France;
- southwest via Łódź and Wrocław in Poland to Germany;
- west, as at present, via Poznań (Poland) to Germany, and onwards to the Netherlands, Belgium, the United Kingdom and Ireland, and via Hamburg to Denmark and Sweden; and
- northeast along Rail Baltica[51] to Lithuania, Latvia, Estonian and Finland.

The routes to the west and to the northeast form part of the North Sea – Baltic Core Network Corridor of the TEN-T, which extends from Warsaw west to Berlin, Amsterdam and Rotterdam and north to Tallinn and Helsinki. The North Sea – Baltic Core Network Corridor Study[52] includes estimates of rail freight tonnage crossing the border between Belarus and Poland in 2025. While it is difficult to compare estimates of tonnages and TEUs, the estimates in the Corridor Study appear to be small compared with the potential volume of BRI-related traffic by 2040. Chapter 4 discusses in more detail the readiness of this CNC to deal with BRI-related rail freight traffic.

[51] Rail Baltica is a passenger and freight rail project part of the North Sea – Baltic TEN-T CNC. It connects Finland, Estonia, Latvia and Lithuania through Poland to the rest of the EU. It was formerly labelled Priority Project 27 within the TEN-T Programme 2007-2013.

[52] PROXIMARE Consortium (December 2014), *North Sea – Baltic Core Network Corridor Study, Final Report*.

3. THE OPPORTUNITIES AND CHALLENGES OF THE BRI

KEY FINDINGS

- **Chinese companies have been investing in infrastructure in the EU** for over 25 years, **long before the announcement of BRI in 2013**.
- **Most of the investment has been in ports, particularly in the Mediterranean**. However, other investments include motorways, airports and a major cargo airline.
- **Chinese contractors are reported to be adapting rapidly to EU laws and standards**, although there have been high-profile projects on which this has not been the case.
- BRI presents a range of opportunities and challenges, although many of these reflect the growth of China as a global economic power.
- **Rail freight to the EU from China depends on railways in transit states including Kazakhstan, Russia and Belarus**. Rail freight to the EU from other countries in the Far East also depends on railways in China. None of these railways are governed by EU legislation on access to, and charging for, rail infrastructure.
- **Transferring freight travelling between China from air to rail should result in much lower CO_2 emissions**. This should outweigh the increased emissions resulting from freight transferring from sea to rail, particularly if rail services are powered from renewable sources.

3.1. Introduction

This chapter discusses in turn:

- Chinese investment in the EU's transport infrastructure;
- the opportunities and challenges of the BRI;
- the implications for transport, logistics and industry; and
- the implications for the environment.

3.2. Chinese investment in the EU's transport infrastructure

Table 12 below lists a number of infrastructure companies and projects in the EU in which Chinese companies have been involved. For further details please see Annex 3.

Table 12: Examples of Chinese investment, lending and contracting in the EU

Type of infrastructure	Motorway	Port	Airport (airline ✈)	Year	EU Member State	Project	Value (million)	Contractor	Minor shareholding (5-25%)	Major shareholding (over 25%)	Lender
New	●			2011	PL	Warsaw-Łódź	€330	●			Chinese banks lend to a wide range of organisations
Existing: operation and/or expansion		●		1991	UK	Felixstowe	€110			100%	
		●		1997	UK	Thamesport	€130			100%	
		●		1998	UK	Harwich				100%	
			●	2012	UK	Heathrow	€616		10%		
			✈	2014	LU	Cargolux	€198			35%	
		●		2015	FR	Marseille	€400			49%	
			●	2015	FR	Toulouse	€308			49.99%	
		●		2016	EL	Piraeus	€369			51%	
		●		2016	NL	Rotterdam Euromax	€41			35%	
	●			2017	IT	Autostrade per l'Italia	€705		5%		
		●		2017	ES	Valencia and Bilbao	€203			51%	
			●	2017	DE	Frankfurt-Hahn	€16			82.5%	
		●			IT	Vado	€53			49.9%	

Source: Steer Davies Gleave analysis, see also Annex 3

Information presented in Table 12 illustrate a number of points. Firstly, Chinese involvement in infrastructure in the EU began long before the BRI. Hutchison Whampoa, established in Hong Kong in the nineteenth century and now merged with the Cheung Kong Group as CK Hutchison Holdings, has acquired a number of ports including Felixstowe, Thamesport and Harwich in the UK[53]. Investments which predate the BRI cannot be attributed to it.

Secondly, involvement can take a number of distinct forms:

- Chinese companies can act as a contractor, either to maintain and renew existing infrastructure or to build new infrastructure. These companies bear the risks

[53] Hutchison Ports, a subsidiary of CK Hutchison Holdings, also owns the Willebroek container terminal in Belgium, Dusiburg Container Terminal in Germany and Taranto Container Terminal in Italy.

associated with constructing the infrastructure to the relevant EU or national standards, but not that the project delivers financial or economic benefits.

- Chinese individuals or companies can hold shares ("equity") in infrastructure companies. This might be through individual small shareholdings, through the purchase of a minor but significant stake, or as a major (majority or sole) shareholder, giving partial or complete control of the company. In these circumstances, the Chinese shareholder may also fund expansion through the injection of additional capital into the company, and may carry out the works with its own resources, rather than engaging an external contractor. The shareholder bears the risks associated with the profitability of the company and of its expansion.
- Chinese companies or banks may lend (provide loans) to infrastructure businesses, either individually and directly or, for large loans, through a consortium of lenders. In these circumstances, the lender bears the risk that the loan is not repaid.

3.2.1. Chinese involvement as a contractor

An example of Chinese involvement as a contractor was the construction of a 49-kilometre Polish section of the motorway from Warsaw to Łódź. The construction contract was awarded to a consortium – formed by China Overseas Engineering Group (COVEC)[54], China Railway Tunnel Group, Shanghai Construction Group, and the Polish company DECOMA – in September 2009 and cancelled in June 2012. This contract predates the announcement of the BRI in 2013.

COVEC's €330 million bid for the contract, less than half the amount allocated by the Polish Government for the project, appeared initially to be commercially attractive. However, the Financial Times reported other bidders' claims that COVEC was "price dumping" because it was impossible to build the road so cheaply (Financial Times, 2015). China Daily later reported that the final construction cost would be 76% higher than the original estimate (China Daily, 2011).

While this is a single example of Chinese attempts to act as a contractor in the EU, it does illustrate a number of potential difficulties associated with different expectations and assumptions in the EU and in China. In 2012, the European Council on Foreign Relations reported that the project had been abandoned because of COVEC's poor management and failure to understand the local, legal, economic, and political environment. In particular, it argued that there had been:

- inadequate assessment of the costs;
- inability to understand local markets;
- lack of permits to import Chinese earthmoving equipment; and
- failure to understand legal issues, such as the need to pay all workers the hourly rate for Polish workers.

In contrast, some of the stakeholders interviewed during the research stated that Chinese companies and contractors rapidly adapted to working to EU specifications and standards. This suggests that COVEC's involvement in Poland may not be typical of other Chinese contractors. However, one interviewee was concerned that the EU is not well-equipped to prevent bidders submitting abnormally low tenders for construction projects. Low tender prices might result from a more efficient approach, from a poor understanding of the

[54] COVEC is a subsidiary of China Railway Engineering Corp (CREC).

contractual requirement, as in COVEC's case, or from a deliberate under-pricing or subsidy to win market share.

3.2.2. Chinese involvement as an equity investor

A number of examples of Chinese involvement as an equity investor in infrastructure companies in the EU were identified in the course of this research[55].

In 2012, before the BRI was announced, China Investment Corporation (CIC) acquired a 10% stake in Heathrow Airport. In 2017, the SRF (please see Section 1.5.2 in Chapter 1) acquired a 5% stake in Autostrade per l'Italia. Such small stakes in companies would not normally be sufficient to have a major influence on business strategy, but might enable a shareholder to gain insights into the operation, prospects and potential of the infrastructure company.

In 2016, COSCO, another port operator, acquired 51% of shares in Piraeus port in Greece and 35% of the Euromax Terminal in the Netherlands. Moreover, in 2017, it bought 51% of shares of Noatum, operating container terminals in Valencia and Bilbao. It is currently pursuing, with Qingdao Port Group, a purchase of 49.9% shares of Vado port in Italy. In each case the shareholding appears to be sufficiently large to be able to influence the port's strategy and investment.

Two relatively recent investments in airports were also identified during this research. In 2015, China's Shandong Hi-Speed Group and Friedmann Pacific Investment Group acquired a 49.99% share of Toulouse Airport management company. The Financial Times reported that the bid proved controversial, however, raising security fears and concerns that foreign groups were capitalising on France's economic weakness (Financial Times, 2014). In 2017, HNA Aviation Group and German firm ADC acquired 82.5% of shares in Frankfurt-Hahn airport.

A final example in Table 12 is the 2014 acquisition by Henan Civil Aviation Development and Investment Company (HNCA) of 35% of shares of Cargolux, a cargo airline. While an airline is not part of EU infrastructure, Cargolux's fleet of 26 Boeing 747-based freighter aircraft provides its owner with a strong capability to carry air cargo[56].

3.3. The opportunities and challenges of the BRI

The interviews and desk research conducted for the purpose of this study provided various views, summarised below, on how these Chinese investments might create opportunities and challenges for the EU.

3.3.1. Opportunity: Chinese parties are willing to take construction risk

One interviewee said that Chinese public and private sector bodies were willing to take construction risk, and to act quickly. It was suggested that this could be a major opportunity when embarking on major construction projects. However, the experience of COVEC as a contractor in Poland shows that Chinese companies have not always been able to work well in the EU.

[55] The situation in which Chinese individuals hold small personal shareholdings in EU companies as a personal investment, with no material ability to influence of control the company, were ignored.

[56] Cargolux's newest aircraft type, the Boeing 747-8F, has a maximum payload of 140 tonnes and, if scheduled to make 10 long haul flights per week, could carry up to 70,000 tonnes of freight per year. In principle, Cargolux's combined fleet could carry around half the total air freight between the Far East and the EU identified in Chapter 2. (Please see Section 2.2.2 – reference to 3 million tonnes).

3.3.2. Opportunity: development of rail as an alternative to both sea and air

One interviewee suggested that Chinese investment in rail infrastructure was leading to rail being a viable alternative to both sea and air for trade between the Far East and Europe.

The European Bank for Reconstruction and Development (EBRD) expressed the opinion that "the rail mode has a huge potential" but did not provide specific forecasts of what goods would transfer to rail, or over what timescale, or what routes they would use.

Other interviewees considered that rail services would attract demand mainly from shipping rather than from air. One of them, responsible for air cargo services, argued that rail would not abstract demand from air because it could not offer the very short transit times required by the most time-sensitive air cargoes. This interviewee also suggested that, to remain competitive, China and other parts of Asia with rail services introduced as a result of the BRI would still need air freight connections to Europe. In this context, ownership of the capacity of a cargo airline such as Cargolux can be seen as a key element of the infrastructure connecting China and the EU.

A representative of the Community of European Railway and Infrastructure Companies (CER) agreed that rail would attract demand from shipping but would not be able to compete with air services. The European Commission also suggested that, from China's perspective, the maritime elements of the BRI were more important and that overland rail was a distraction. In their view, 90-95% of traffic between China and the EU was maritime and would remain so. This is broadly consistent with the analysis of maritime and air traffic summarised in Chapter 2 of this study. It should also be stressed that the most common investments by Chinese parties in the EU appear to be ports, principally in the Mediterranean and the United Kingdom.

Russian Railways (RZD) has long operated rail services along the Trans-Siberian Railway between Europe and the Sea of Japan. These could, in principle, be used to carry goods from Japan and South Korea to Europe, but these would first have to be shipped across the Sea of Japan to Russia. In contrast, from landlocked north east China, long overland journeys are needed to reach any port, but may also be needed to reach a suitable railhead.

Forced stops to change from standard to broad gauge and back again also provide an opportunity to split, join or marshal the trains to combine different origins and destinations. At Brest in Belarus, for example, trains which have crossed Russia and Belarus on the broad gauge could, with little additional delay, be recombined as standard gauge trains to several destinations within the EU.

The commercial objective of growing rail services appears not to be to put pressure on maritime operators, which are already efficient, but to offer a higher speed service. This also helps producers and consumers along the rail routes used. However, if maritime services lose their most time-sensitive cargo to rail, they might in practice sail their ships slower, extending transit times but reducing fuel costs and hence prices, and decreasing CO_2 emissions.

3.3.3. Opportunity: commercial rail services between China and the EU

In principle, commercially viable rail services between China and the EU are a major opportunity for operators, shippers and industry. However, three interviewees, including the European Commission, questioned whether rail services between China and the EU

were truly commercially viable. In practice, it is difficult to determine whether or not this is the case.

For the owners and managers of rail infrastructure, it is rational to sell spare capacity at marginal cost, which may be very low on freight railways[57]. Similarly, for operators of rail services which need to return locomotives and wagons to their origin, it is rational to carry freight at marginal cost, which may be limited to the costs of loading, unloading and additional fuel[58].

One interviewee in the logistics sector said that subsidies granted by the Chinese Government to rail services between China and the EU are "tremendous". They also stated that Kazakhstan Railways (KTZ) had reduced tariffs in 2012 but now agreed with Russian Railways (RZD) to keep tariffs high. KTZ indicated that the Chinese Government provided subsidies to support westbound container traffic, but envisaged that these would be withdrawn by 2020 as balancing eastbound traffic was attracted to the route.

These comments illustrate a number of issues relating to the commercial viability of the services.

Firstly, it is not unusual for operators to choose to subsidise services in the early years of operation, when start-up costs may be high and demand may be low. New rail operators in the EU often plan to be loss-making for several years while they grow their market and fill their capacity. There is no reason why Chinese or other parties planning to establish a long-term rail cargo business should not also do so.

Secondly, there is no uniquely correct way of allocating costs within a railway operation, and in particular between the loaded and empty directions of operation. The allocation of costs is ultimately a decision for management, and the prices that can be obtained in the market in each direction may be widely different. From the perspective of the operator, a service is commercially viable if, in the longer term, the revenues obtained in both directions exceed the total cost of providing the service.

Thirdly, trains between China and the EU will be charged transit tariffs by operators such as KTZ and RZD. There is no uniquely correct basis for setting such transit tariffs, although the principal applied in the EU is that they should be based on marginal costs. From the perspective of these transit railways, however, transit traffic is an opportunity to profit from third parties[59]. The incentives on the transit states are typically to maximise their profits, rather than to maximise the economic, social and environmental value of the railway operation as a whole. For both the EU and China, however, there is the potential risk that a growing and successful rail service will be seen as a potential source of profit by the transit railways.

3.3.4. Opportunity: rebalancing freight flows

The analysis of Figures 4 to 7 in Section 2.2.1 showed that westbound loaded container flows of 11 million TEU exceed the eastbound flows of 5 million TEU. This creates a need for

[57] Article 31 of Directive 21/34/EU provides that "the charges for the minimum access package and for access to infrastructure connecting service facilities shall be set at the cost that is directly incurred as a result of operating the train service."

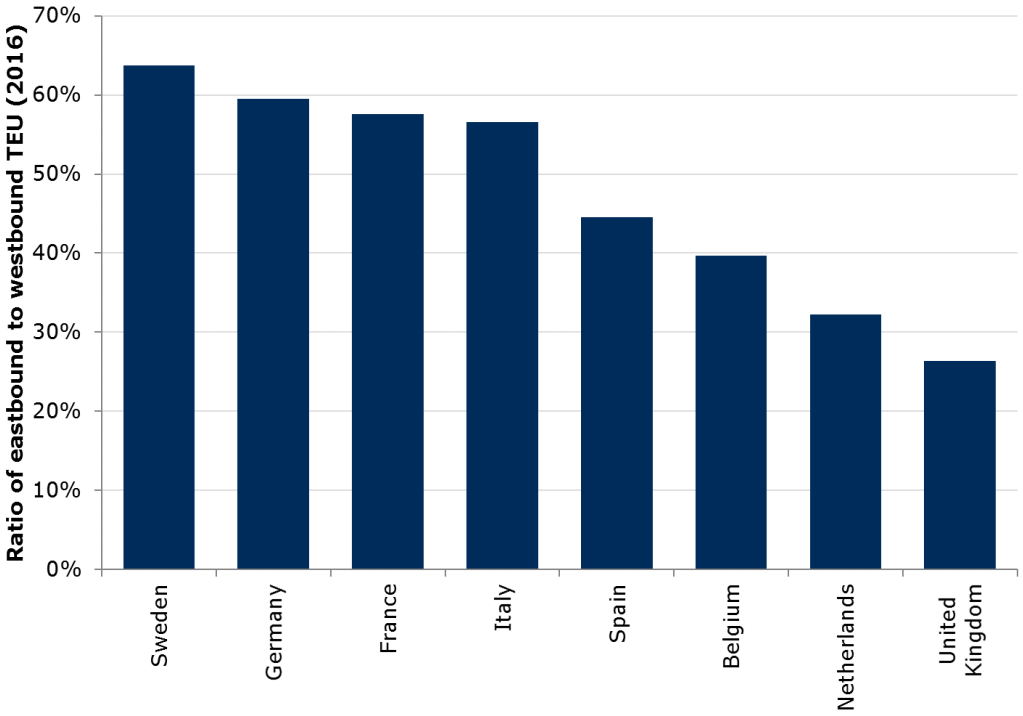
[58] Similar considerations apply to all transport in which vehicles or containers must be returned to their origin after each loaded journey.

[59] A similar issue emerges in the provision of air navigation services within the EU, where national air navigation service providers (ANSPs) may have incentives to overcharge for en-route services provided to overflying, and typically foreign, aircraft to subsidise terminal services provided to aircraft taking off and landing.

a large number of containers to be returned empty in the eastbound direction. A representative of the CER said that this represented an opportunity for the EU to rebalance imports and exports.

Figure 10 below, derived from Figure 4 and Figure 5, shows the imbalance in container traffic between several EU Member States and the Far East.

Figure 10: Balance in loaded container flows for selected EU Member States



Source: MDST World Cargo Database

Of the Member States shown, the largest imbalance in flows is for the United Kingdom, which exports only just over one quarter as many loaded TEUs as it imports. Even in Germany and Sweden, exports are less than two thirds of imports. This appears to confirm CER's view that additional containers could be carried eastbound, in principle at little additional cost.

3.3.5. Opportunity: improved customs coordination

One interviewee saw opportunities to use through rail services between China and the EU to improve and streamline customs arrangements. However, they did not suggest either that specific initiatives were required or how these should be organised. As already discussed, a number of the MoUs supporting the BRI relate to the development of improved customs arrangements with a view to enhancing connectivity (please see Table 3 in Section 1.4.1 in Chapter 1).

3.3.6. Opportunity: EU companies working in CAREC states

The EBRD suggested that there were good opportunities for companies from the EU to build railways, roads and other transport infrastructure in the CAREC states[60]. They argued that,

[60] The Central Asia Regional Economic Cooperation (CAREC) Program is a partnership of 11 countries (Afghanistan, Azerbaijan, China, Georgia, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan) and 6 multilateral development partners (Asian Development Bank, European Bank for Reconstruction and Development, International Monetary Fund, Islamic Development Bank, United

in addition to construction, there would be opportunities in the areas of harmonisation of regulation, information technology systems, developing reliable and sustainable energy supplies, and logistics. The limited development in many of these fields in the CAREC region would create business opportunities for investments in areas such as information technology systems and railway rolling stock. The EBRD did not, however, provide specific examples of why the BRI would enhance or expand these opportunities.

3.3.7. Opportunity: complementary skills in the EU and China

One interviewee said that the EU had greater skills in regional issues and planning than Chinese bodies, and that there were opportunities for each country's skills to complement each other. At first sight, it appears likely that each party may benefit from the other's knowledge of local legislation, planning and procedures.

3.3.8. Challenge: wasted or misdirected investment

The South East Europe Transport Observatory (SEETO)[61] said that the availability of Chinese funding can be an advantage and an opportunity. While the availability of Chinese funding might pose a threat on the EU financial institutions, which would have to compete with Chinese institutions for clients, alternative sources of financing might represent a positive development for the business sector or the countries accessing such sources.

One institutional interviewee, in contrast, was more cautious, and suggested that a major risk was that Chinese parties would support projects not backed by strong demand or lacking a strong business case. In these circumstances, the losses would remain with the parties in the EU who must repay the loans. In contrast, if Chinese parties invest, or take equity stakes, in projects, they also bear some of all of the associated losses.

In either case, such investment is fundamentally inefficient: resources (whether from the EU, from China, or from other countries) are wasted which could have added more value if used elsewhere. One implication is that parties in the EU responsible for selecting infrastructure projects should focus on what is beneficial, and will deliver economic, social or environmental benefits, rather than being attracted to projects simply because Chinese funding is available.

3.3.9. Challenge: Chinese dominance of rail transit

One interviewee was concerned at the potential dominance of rail transit by Chinese parties. The apparent implication was that this would give China market power over the EU's trade[62]. A large global economy such as China will almost inevitably gain market power through its economic size and its importance as a trading partner. Nevertheless, two further points are worth noting.

Firstly, China does not behave as a single actor with a single common interest: for example, interviewees cited examples of different Chinese parties investing in directly competing projects. In the aviation, shipping and rail sectors, Chinese companies do not necessarily coordinate their actions any more than comparable EU companies.

Nations Development Programme, and World Bank) working to promote development through cooperation, accelerate economic growth, and reduce poverty. ADB serves as the Secretariat (CAREC, 2017).

[61] South East Europe Transport Observatory (SEETO) is regional transport organisation established by the Memorandum of Understanding for the development of the Core Regional Transport Network (MoU) signed on 11 June 2004 by the Governments of Albania, Bosnia and Herzegovina, Croatia, FYROM, Montenegro and Serbia and the United Nations Mission in Kosovo and the European Commission.

[62] For example Apple, Boeing, Google and Microsoft all originated in the USA, but this does not mean that the US Government manipulates access to their products to disadvantage the EU.

Secondly, with limited exceptions such as the Suez Canal, sea and air infrastructure links ports and airports between which any operator may move ships or aircraft freely, subject only to traffic rights and, in extremis, a military blockade. Rail infrastructure, in contrast, is characterised by successive local monopolies, each of which may seek to discourage, or extract profits from, through traffic, leading to high prices and low usage of the network. It was partly because of this issue that the EU has developed a One-Stop-Shop (OSS) principle, in which a single party sets a price for, and negotiates access to, all the infrastructure over which a train service must pass[63]. In practice, however, not only China but also Kazakhstan and Russia set access and charging rules in their own interests. It could be argued that it would be in the interests of the EU if transcontinental capacity was priced, allocated and managed by a single party.

To conclude, Chinese market power may affect trade between the EU and the Far East in two ways:

- First, China, like any state, can modify its trade policy irrespective of its control of transport infrastructure, capacity or pricing. China has banned various EU agricultural products without needing to manipulate the provision of rail transport.
- Second, China can currently set terms of access to its rail network which are designed to penalise rail transit traffic, such as between Europe and Vietnam, South Korea and Japan. In the absence of transparent access and charging analogous to the EU's four railway packages[64], railways in China and elsewhere in Asia are entitled to deter or exclude transit traffic. In practice, states such as Vietnam, South Korea and Japan will develop their own approaches to avoiding being dependent on rail transit rights through China and elsewhere to support their trade with Europe.

3.3.10. Challenge: China taking over financing of existing projects

One interviewee identified a risk for EU institutions and Member States that Chinese parties might take over projects which were previously being discussed with international lending agencies (ILAs). They cited how the upgrading of a main railway line in Pakistan was to be financed by an ILA, but a Chinese party then offered better financial terms on condition that the upgrade was also built by Chinese contractors. As noted in Section 3.3.8, this situation is a challenge for the ILAs, but may be an opportunity from the perspective of the customer.

It is not clear whether this is a real concern in the EU in practice, if any such arrangement complies with EU procurement law and the associated infrastructure is constructed to comply with relevant EU and national standards. Other interviewees stated, for example, that Chinese companies and contractors rapidly adapted to working to EU specifications and standards, although there is disagreement on this as discussed below.

3.3.11. Challenge: maintenance and harmonisation of standards

There were conflicting views among the interviewees on whether and how Chinese parties, and particularly contractors, would adapt to, and comply with, EU standards in areas such as construction. Some interviewees reported concerns that Chinese contractors might not comply with EU standards "A problem exists with enforcement of existing legislation and

[63] Similar arrangements have emerged in Australia, where the Australian Rail Track Corporation (ARTC) has been established as a single point of contact for access and charging across the previously State-owned networks.

[64] Within Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area (recast), Chapter II Section 4 sets out the principles governing access to railway infrastructure and services and Chapter IV sets out the principles for levying of charges for the use of railway infrastructure.

standards and construction which varies between Member States". It remains mainly for the Member States to enforce EU, national and local standards.

The EBRD saw opportunities for the EU to contribute to the development of Chinese standards in construction activities and management practices. This would make Chinese activities more transparent, which would be beneficial to the EU.

A related concern was that weak legislation in rail transit countries might permit environmental damage. The EU cannot impose higher standards on the construction or operation of railways in non-EU states such as Russia and Kazakhstan. There are, however, a number of mechanisms by which the EU can encourage higher standards:

- through the terms and conditions of EU involvement in financing or supporting infrastructure projects;
- through the supply of products compliant with (high) EU environmental standards; and
- through operating, or encouraging other parties to operate, through rail services using locomotives and other equipment with a high environmental performance.

An institutional stakeholder made the point that EU standards could always be imposed and, in principle, enforced if a project was funded by the EU, but that this was less likely to be possible if the same project was funded by China.

3.3.12. Challenge: China focuses elsewhere

In contrast, a major provider of rail services outside the EU saw a major risk in China finding more attractive markets than Europe in which to trade and invest, and in shifting its focus elsewhere. They did not cite any examples, but this concern does illustrate that, to attract trade and investment, the EU must compete with other potential trade and investment partners to attract Chinese investors. While Chinese investments in fixed infrastructure in the EU cannot be used elsewhere, assets such as cargo airline Cargolux could in principle be redeployed to focus on connecting China with non-EU markets.

3.3.13. Challenge: changes in relative advantage within the EU

Improved accessibility between China and the EU will, in principle, not only provide EU industry with better access to Chinese markets but also subject it to greater competition. The greatest changes can be expected in Member States most affected by rail access from China, such as Poland and landlocked Slovakia, Hungary, the Czech Republic and Austria. These Member States may gain accessibility relative to those for which direct rail services are of limited relevance, such as Cyprus and Malta. However, much will depend on the exact industries made more accessible through the BRI, whether in the EU or in China.

The benefits of faster journey times by rail would be greatest for goods such as temperature-controlled foodstuffs, or relatively time-sensitive goods such as fashion or made-to-order cars. French shipping line CMA CGM, a leading member of one of the world's three shipping alliances, has announced that it will offer its own trains carrying refrigerated containers between China and Duisburg in Germany. The faster transit time offered by rail would also be attractive to logistics companies such as DHL.

One interviewee stressed the interests of consumers in the EU, who would benefit from better access to Chinese products, which might better suit their needs than those produced

in Europe. Another was concerned that China does not have EU rules on state aid and subsidies.

In this context, it is worth recalling the conclusions of a recent European Commission Explanatory Memorandum[65]. This stated that "there is a lack of level-playing field in world procurement markets. While our [EU] public procurement market is open to foreign bidders, the procurement markets for foreign goods and services in third countries remain to a large extent closed de jure or de facto". It also observed that in negotiations on a revised Government Procurement Agreement (GPA) in the context of the World Trade Organization (WTO) and in bilateral negotiations with third countries, the EU has advocated an ambitious opening of international public procurement markets. However, China has chosen to limit coverage of procurement in the relevant schedules.

It is important to highlight that China is not a member of the Organisation for Economic Co-operation and Development (OECD) and is therefore not obliged to comply with the OECD guidelines on export credit that:

- limit tied aid;
- regulate credit practices;
- impose maximum repayment terms, country risk classification and minimum interest rates;
- require the exchange of information; and
- impose social, environmental and governance standards on financing activities.

A report by the European Parliament of 2011 noted that Chinese export credits have become a competitive threat to exporters from the OECD and create an unfair advantage for Chinese exporters (European Parliament, 2011). The same report also concluded that Chinese export finance activities have played an important role in China's "going-global" strategy, strengthening its economic relationships with several developing countries, especially in Africa, ensuring significant access to natural resources, and enhancing its sphere of influence.

3.3.14. Challenge: new Chinese investments in transit countries

One interviewee suggested that Chinese companies may begin production not only in north-eastern China but also in transit countries such as Kazakhstan and Russia. This would make EU consumers more accessible to Chinese industry without making Chinese consumers more accessible to EU industry. Nonetheless, consumers in the EU would in principle benefit from wider choice or lower costs. The extent of this effect would, however, depend on the extent to which transit countries, or China itself, were open to inward investment from the EU.

3.3.15. Challenge: making Asia's infrastructure meet EU needs

One interviewee saw a challenge for the EU to ensure that transport infrastructure being developed not only in China but also elsewhere in Asia would meet the EU's needs. At the same time, a supplier of rail services outside the EU suggested that the focus of the TEN-T

[65] European Commission (29 January 2016), Amended proposal for a Regulation of the European Parliament and of the Council on the access of third-country goods and services to the Union's internal market in public procurement and procedures supporting negotiations on access of Union goods and services to the public procurement markets of third countries, Brussels, COM(2016) 34 final, available at http://trade.ec.europa.eu/doclib/docs/2016/january/tradoc_154187.pdf.

has been building the single market, and that it has not been sufficiently outward-looking. Chapter 4 provides a review of one of the TEN-T Core Network Corridor studies, and the limited extent to which it refers to, or considers trade flows to and from, China.

Another interviewee commented that there was a need to upgrade the rail infrastructure in Belarus and Ukraine, which caters for transit traffic to and from the EU. It is not clear, however, by what means, other than through global fora or diplomatic channels, the EU can directly influence the provision of port, airport and rail infrastructure in other countries[66].

A representative of CER noted that Ukraine was currently effectively closed to rail freight. If the current reliance in Belarus was to be reduced, it would be necessary to make greater use of more southern transport routes, including through Turkey, although there might still be a bottleneck in Georgia.

3.4. The implications for transport, logistics and industry

Transport, logistics and industry throughout the area covered by the BRI, including the EU, has already begun to adapt to the existence, and growth, of trade flows with China. Within the EU, ports and shipping companies, and airport and airlines, already deliver freight and cargo around the world using standard systems and processes. Many EU ports and airports are already handling growing volumes of cargo between China and the EU with no great difficulty. The arrival of the first Chinese container or ship at an EU port, or the first Chinese air cargo or aircraft at an EU airport, may be noted as a local milestone, but is unlikely, in itself, to require any material change in equipment or processes.

The EU's railways are less well-prepared for rail services operating all the way between China and the EU. Infrastructure managers in Poland and Germany are already involved in the provision of regular rail services between China and Duisburg in Germany. Duisburg, the world's largest inland port, handled 3.7 million TEU in 2016, of which 100,000 TEU were by rail from and to China[67]. Through services from China have also operated across other networks as far as London in the United Kingdom.

However, for other infrastructure managers and rail and terminal operators, the first links with China may require adaptation to new systems, such as applications for railway capacity, timetable planning, real time information, and dealing with infrastructure charges and customs. In some cases, this may mean dealing with documentation in Mandarin Chinese, Russian or other languages. Some initial changes in equipment and processes may be necessary, but this is unlikely to be materially different from dealing with an additional official EU language to serve intra-EU freight.

However, this study envisages two ways in which the growth of trade with China will affect transport, logistics and industry.

Firstly, it will become increasingly common for Chinese companies to have representatives or staff in the EU, and vice versa. In the airline industry, for example, a Chinese airline might operate an initial service to an EU airport using the services of a local handling agent, but over time it might, in principle, have a full-time station manager, or recruit staff to handle its own services, or establish a local crew base. Similarly, a major Chinese

[66] To illustrate the issue, the EU's busiest airport, London Heathrow, is operating almost at capacity. Asian airlines wishing to provide services to London must either use other airports or arrange to buy capacity, which has been traded at prices of up to USD 75 million, equivalent to €64 million (exchange rate on 25 October 2017, 1 EUR = 1.1785 USD) for a single daily slot.

[67] Duisport also receives goods from China by Rhine barge, transhipped in Rotterdam or Antwerp.

supplier to a factory in the EU might appoint one or more local staff to coordinate orders and inward transport. These incremental changes will emerge as a natural part of transport operators and industry optimising their arrangements.

Secondly, many industry processes are agreed globally under the auspices of international organisations such as the International Maritime Organization (IMO), the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA). While change is largely by consensus, the increasing weight of Chinese interests in such bodies is likely to mean that the balance of outcomes is likely to be influenced increasingly by Chinese approaches and preferences.

The overall pattern of the BRI is growth in trade and transport demand. However, transfer of some freight from shipping and air to rail will result in slightly slower overall growth than might otherwise take place. The loss of demand at any one port or airport location, however, is likely to be small compared with the potential outcome of other events, such as a major shipping or airline customer withdrawing services or focusing on other routes.

3.5. The implications for the environment

In the course of this research, estimates of the CO_2 emissions directly resulting from transport between China and the EU by air, sea and rail have been analysed. It has been assumed that carrying a TEU between China and the EU by container ship results in emissions of around 0.5 tonnes of CO_2. These emissions might fall in future, if the average value of goods sent by sea fell, and if this resulted in ships sailing at lower and more efficient speeds.

It has been also assumed that carrying a TEU between China and the EU using diesel trains would result in emissions of around 0.7 tonnes of CO_2. However, the emissions from electric trains could be lower, possibly even falling to zero if they were powered entirely by renewable sources. Over time, this may in principle become possible if electrification, and the use of renewable sources of energy, becomes more extensive. This would, however, depend primarily on the provision of electrification throughout the routes used by BRI-related trade on the railways of China, Kazakhstan and Russia.

On the other hand, a range of estimates of the average cost per tonne-kilometre of air freight can be found. The United Kingdom's Department for Environment Food & Rural Affairs (DEFRA) published (2012) estimates that air freight on long haul flights results in emissions of 630 grams of CO_2 per tonne-kilometre. This implies that five tonnes of air freight flying around 8,000 kilometres[68] between China and the EU would result in emissions of around 25 tonnes of CO_2, compared with an estimated 0.7 tonnes if carried by diesel train.

In summary, every TEU transferred from air to rail would reduce CO_2 emissions by nearly 25 tonnes, and every TEU transferred from shipping to rail might increase CO_2 emissions by at most 0.2 tonnes, but could reduce or eliminate CO_2 emissions if a significant portion of the journey were powered by renewable energy sources. This suggests that, if assessed by the CO_2 emissions resulting from transport between the Far East and Europe, the BRI is likely to be beneficial to the environment.

[68] The great circle distance from Beijing to Brussels is just under 8,000 kilometres.

4. THE EU TRANSPORT SYSTEM'S READINESS FOR THE BRI

KEY FINDINGS

- **The EU transport corridor most likely to be affected by, and act as a constraint on, BRI-induced traffic is the North Sea – Baltic Core Network Corridor**, particularly the western section linking Poland, Germany and the Netherlands. Plans exist for upgrades to this corridor by 2030, but further capacity may be required in the longer term.
- **BRI-related traffic has not been taken into account in TEN-T Corridor Studies.**
- **Increased trade between the EU and China raises a number of issues** including access to EU markets, including procurement and tendering rules, export credit arrangements, screening foreign direct investment, and adherence to standards.
- The European Commission is advancing proposals in these and other areas. At the moment, there is **no need for further legislation specifically related to the BRI at the EU level.**

4.1. Introduction

This chapter discusses the readiness of the EU transport system to deal with the BRI. The following issues are analysed in turn:

- the potential need for changes in the TEN-T; and
- the potential need for changes in legislation.

4.2. The potential need for changes in the TEN-T

As discussed in the previous chapter, the impact of the BRI will, in principle, include both opportunities and challenges for the TEN-T network. Opportunities will arise as new traffic resulting from BRI investments, particularly in the form of increased rail services, may result in reduced transit times, increased frequencies, and spare capacity on some trains. This may offer opportunities to shippers and their logistics providers to switch some or all of their freight to rail.

Challenges will also arise, particularly if new traffic induced by BRI investments results in bottlenecks and capacity constraints, and if these cannot be addressed or relieved at reasonable cost or within reasonable timescales. For major infrastructure projects, such as fixed links across natural barriers such as water or mountains, the lead time between identifying the need for infrastructure and opening it to traffic can be 20 years or more. This means that a capacity constraint which emerges by 2020 might not be fully addressed before 2040.

Chapter 2 describes how airlines and shipping companies have wide flexibility to introduce services between different airports and ports, depending on the needs of their customers and adjusting, where necessary, to the availability of capacity. However, it was also pointed out that the continuous nature of rail infrastructure, and the limited number of routes

between China and the EU, mean that there are fewer options for rail flows to be rerouted from routes or corridors which have become congested, slow, or unreliable.

Chapter 2 concluded that the only TEN-T corridor on which BRI-related freight traffic is likely to be particularly dependent is the rail route from Brest in Belarus through Poland and onwards to northern parts of the EU. The routes to the west and to the northeast form part of the North Sea – Baltic Core Network Corridor of the TEN-T, which extends from Warsaw west to Berlin, Amsterdam and Rotterdam and northeast to Tallinn and Helsinki. Accordingly, the North Sea – Baltic Core Network Corridor Study was reviewed. This draws on other studies and in particular on forecasts of intra-EU, national and local requirements with horizons to 2030 and, in some cases, 2040.

The railways of Lithuania, Latvia, Estonia and Finland are built to the broad gauge (1,520mm) used in Russia. It was assumed that rail freight between China and these Member States currently enters them directly from the Russian network, rather than the longer route via Warsaw requiring changes to and from the standard UIC gauge (1,435mm). However, the Corridor Study notes that the most severe missing link along the Corridor is the lack of a standard UIC gauge railway from the Poland-Lithuania border to Tallinn, the so-called Rail Baltica project. By 2030, the Rail Baltica project is expected to provide a 950-kilometre standard gauge rail line linking Warsaw, through Lithuania and Latvia, to the Estonian capital of Tallinn, from where ferries provide a link to Helsinki in Finland.

The Corridor Study draws on a range of national and local studies of existing and planned infrastructure and sets out requirements regarding electrification, axle load, line speed, train length, signalling system and track gauge, which are summarised in Table 13 below.

Table 13: Rail infrastructure parameters defined by Regulation (EU) 1315/2013[69]

Parameter	Standard	Date
Electrification	Core network to be electrified	2030
Axle load	Core freight lines 22.5 tonnes	2030
Line speed	Core freight lines 100 km/h	2030
Train length	Core freight lines to allow for 740 metre trains	2030
ERTMS[70]/signalling	Core network to be equipped	2030
Track gauge	New lines to be UIC standard gauge (1,435mm)	2030

Source: North Sea – Baltic Core Network Corridor Study, referring to Regulation (EU) 1315/2013

These requirements are based on Regulation (EU) 1315/2013. The Corridor Study envisages that these standards will be met by 2030, with the implied effect that rail

[69] Regulation (EU) 1315/2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU.

[70] ERTMS - European Rail Traffic Management System. The European Railway Traffic Management System (ERTMS) is a major industrial project developed by eight UNIFE members - Alstom Transport, Ansaldo STS, AZD Praha, Bombardier Transportation, CAF, Mermec, Siemens Mobility and Thales - in close cooperation with the European Union, railway stakeholders and the GSM-R industry. As a unique European train control system, ERTMS is designed to gradually replace the existing incompatible systems throughout Europe. While ERTMS was conceived as a European project, 57% of the global ERTMS trackside contracts (as measured in km), as well as 25% of the global ERTMS contracted onboard units in 2014 were actually in Asia (ERTMS Deployment Statistics, 2017).

infrastructure capacity in 2030 will be capable of meeting the current and forecast demand to that date.

However, the Corridor Study makes only brief reference to China and does not include any specific forecasts of demand resulting from the BRI. Specifically:

- In the absence of forecasts or estimates of spare capacity, it does not identify whether and where traffic between the Far East and the EU, including any due to the BRI will, or might, result in shortfalls in infrastructure capacity.
- In the absence of estimates of the shortfalls in capacity, it does not identify projects or upgrades designed to deal with such BRI-related shortfalls of capacity.
- In the absence of such projects, it does not include estimates of their potential costs.

The Corridor Study does, however, include estimates of the tonnage of rail freight crossing the border between Belarus and Poland in 2025, which appear to be much lower than the estimate of BRI-related traffic of 3 million TEU in 2040 presented in Chapter 2. It is not, therefore, clear whether the Corridor Study has made adequate provision for BRI-related rail traffic.

For port infrastructure, the added difficulty is that operators may move their services, making it difficult even in theory to predict or identify where BRI-related shipping traffic will emerge. For airport infrastructure, there is the further complication that additional freight may be carried on existing passenger aircraft and may impose no additional requirements on the infrastructure, other than the need for suitable air cargo handling facilities to be available at the airport.

In summary, it is not clear whether, where and when BRI-related traffic will result in congestion or capacity shortfalls on the EU rail network or at EU ports or airports.

4.3. The potential need for changes in legislation

Table 14 below summarises a number of the opportunities and challenges which appear to emerge from the BRI, based on the analysis provided in Chapter 3. None of these may amount to a clearly-defined "problem", as outlined in the EC's Better Regulation Toolbox (European Commission, 2017). Nonetheless, this section briefly discusses the extent to which it might be relevant to consider legislation to address them.

Table 14: Opportunities, challenges, and the need for legislation

Section	Opportunity or challenge	Issue(s)
3.3.1	Chinese investors may not always meet EU standards	Procurement and enforcement
3.3.3	China may subsidise products and transport	-
3.3.5	Scope for improved customs coordination	Multilateral coordination
3.3.11	EU standards must be maintained and harmonised	
3.3.8	Wasted and misdirected investment	Transparency and coordination
3.3.10	Chinese parties may take over existing projects	
3.3.9	Chinese dominance of rail transport	Chinese may limit transit traffic
3.3.12	China may focus its trade elsewhere	-
3.3.13	Changes in relative advantage within the EU	Regional and cohesion policies
3.3.14	New investment in transit countries	Coordination between EU and Asian railways
3.3.15	Making Asia's infrastructure meet EU needs	
4.2	Bottlenecks may emerge on rail and on TEN-T	Consider EU and Far East flows

Source: Steer Davies Gleave analysis

Interviewees commented that the European Commission is aware of many of these issues and is taking steps to address them. For example:

- In 2016, the Commission put forward an amended proposal on access of third-country goods to the internal market[71], addressing how the Chinese market is less open to third countries than the EU internal market. One interviewee, UNIFE, mentioned this initiative and endorsed the Commission's approach. More specifically, it proposed that an EU instrument (e.g. Regulation) is developed to guarantee the reciprocity of public markets between EU and China: it fully supported the Commission's proposal in a recent communication (2012/0060/COM[72]) and a new Commission proposal (COM (2016) 34 Final[73]).
- In 2017, the Commission put forward a proposal for a Regulation establishing a framework for screening of foreign direct investments[74]. UNIFE similarly proposed better control of foreign investments and supported the Commission's efforts in this area (EC 2017/0224COM).

[71] "Amended proposal for a Regulation of the European Parliament and of the Council on the access of third-country goods and services to the Union's internal market in public procurement and procedures supporting negotiations on access of Union goods and services to the public procurement markets of third countries", COM(2016) 34 final, 29 January 2016.

[72] Procedure 2012/0060 (COD) – Proposal for a Regulation of the European Parliament and of the Council on the access of third-country goods and services to the Union's internal market in public procurement and procedures supporting negotiations on access of Union goods and services to the public procurement markets of third countries. Brussels, 21 March 2012, COM(2012) 124 final.

[73] Procedure 2012/0060 (COD) – Amended proposal for a Regulation of the European Parliament and of the Council on the access of third-country goods and services to the Union's internal market in public procurement and procedures supporting negotiations on access of Union goods and services to the public procurement markets of third countries. Brussels, 29 January 2016, COM(2016) 34 final.

[74] "Proposal for a Regulation of the European Parliament and of the Council establishing a framework for screening of foreign direct investments into the European Union", SWD(2017) 487 final, 13 September 2017.

As confirmed by the interviewees, Chinese companies might not always be familiar with, or comply with, EU legislation, processes and technical standards. UNIFE suggested that, while the EU should be open to non-EU investments, it should ensure compliance. However, UNIFE has not identified any specific proposals for change, other than clarity in procurement processes and enforcement of existing rules.

Another concern identified through the interviews was that Chinese parties may subsidise either the products they sell or the costs of transporting them to the EU, potentially creating an unfair advantage. What is more, even if it could be shown that transport was not subsidised[75], there would still be scope to subsidise products. However, the principal remedies for such subsidy are likely to lie in existing multilateral trade agreements, rather than be specific to the EU and the effects of the BRI.

Similarly, there appears to be scope for improved customs coordination between the EU, transit states, and China, and greater harmonisation of standards. Many standards are coordinated through global or multilateral agreements overseen by bodies such as the International Maritime Organization (IMO), the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA). Mechanisms for standards coordination do not appear to be specific to the EU and the effects of the BRI.

There are concerns that investment may be wasted or misdirected, for a number of reasons:

- Projects may be selected because Chinese funding or contractors are available, rather than because they deliver economic, social and environmental benefits.
- Different Chinese parties may invest in competing or duplicate projects.
- Projects developed by one organisation or International Lending Agency (ILA) may be taken over by another, resulting in possible inefficiencies in the use of resources.

In each case listed above, it seems that the principal issues are transparency in what projects are being considered, and the circumstances in which they will be beneficial, and coordination in planning of investments. Nonetheless, the EU's market economy relies on competition, such as between airports for airlines and air cargo traffic, or between ports in locations such as the Adriatic Sea, the Tyrrhenian Sea or the North Seas[76]. Competing provision of capacity, with the aim of attracting airline, shipping or logistics companies, is a natural part of a dynamic market.

More than one interviewee expressed a concern at the opposite effect, increasing Chinese dominance, particularly in the control of transport including rail transit traffic. Table 12 on page 68 and Section 3.2.2 identified how some Chinese companies have already acquired a number of ports. One example is in the United Kingdom, where Hutchison Whampoa (now CK Hutchinson Holdings) has owned the three North Sea ports of Felixstowe, Thamesport and Harwich since 1998[77]. However, this study has not identified any concerns that this ownership has been abused to distort trade to and from the United Kingdom. A more specific concern is that Chinese railways may not provide capacity for transit traffic, potentially impeding trade between the EU and states such as Vietnam, South Korea and

[75] In practice this is technically difficult, even with extensive information on the costs of the transport operator and infrastructure manager (please see Section 3.3.3).

[76] For example, the TEN-T map (please see Map 5 on page 58) shows closely-competing ports in the Adriatic Sea (Koper, Trieste and Venice), the Tyrrhenian Sea (Leghorn (Livorno on Map 5), La Spezia, Genoa (Genova on Map 5) and the North Sea (Zeebrugge, Rotterdam and Amsterdam).

[77] Felixstowe is on the TEN-T: please see Map 5 or Map 6 on pages 58 and 60.

Japan. From the perspective of the EU, however, trade with China is much more important than trade with other states in the Far East (please see Figure 4 and Figure 7 on pages 52 and 53), and the principal issue for the EU appears to be dominance by Kazakhstan, and in particular Russia and Belarus, of rail routes between China and the EU. This dominance cannot readily be addressed by EU legislation.

There are some concerns, however, that attempts to constrain or regulate Chinese involvement in the EU may, at least at the margin, deter Chinese parties from trade with the EU and encourage them to trade elsewhere. This suggests that, if any new legislation is proposed, its potential effect on deterring trade with the EU may need to be considered.

The analysis of the potential effect of the BRI on trade flows conducted for the purpose of this study suggested that a number of changes may take place, at least over the longer term:

- Some high value goods may transfer to rail, potentially to the benefit of Poland, northern Europe, and landlocked Slovakia, Hungary, the Czech Republic and Austria (please see Section 3.3.13).
- Some low value goods may transfer from ports in the eastern Mediterranean to ports in the north of the Adriatic Sea and the Tyrrhenian Seas (please see Section 2.2.4).

It appears likely that the EU can anticipate and mitigate these changes with existing mechanisms. To anticipate the changes, planning of transport infrastructure, and in particular the TEN-T, should take into account forecasts of trade between EU and China and the Far East, as discussed further below. To mitigate any material effects on ports or regions which may suffer a loss in economic activity, the EU can make use of existing regional and cohesion policies.
A challenge for the EU will be to ensure that capacity, and commercially viable transit times, remain available through Asia and in rail transit countries including Kazakhstan, Russia and Belarus. This will require increasing coordination at the operational level between railways across Eurasia, rather than specific legislation.

Finally, bottlenecks may emerge in the EU's transport networks, including the TEN-T, whether because of steady growth in trade with China and the Far East or, in the case of rail, because of allocation of rail capacity to intra-EU, national, regional or even suburban rail traffic. There may be scope for reviewing planning processes at the EU level, in relation to the TEN-T, and at national, regional and local level[78], to take explicit account of estimates of trade flows with China and the Far East. The analysis conducted for the purpose of this study suggests that this may be material not only to rail routes (and in particular those in the North Sea – Baltic Core Network Corridor) but also to ports and the infrastructure supporting them (such as container stacks, warehousing and parking) and connecting them (such as onward road and rail connections) (European Commission, 2017).

Pending investment to address rail capacity bottlenecks, it might at first sight appear desirable to have mechanisms to reserve capacity for rail freight traffic between the EU and the Far East. As noted in Section 2.1.3, however, rail capacity may be allocated to

[78] For example, widening of the United Kingdom's M20 motorway locally around Maidstone, between London and the English Channel, was planned in the mid-1980s. One section was designed and built with five traffic lanes in each direction. The traffic forecasts included an "overlay" of the expected traffic growth associated with Channel Tunnel, which was not yet under construction and which did not open until 1994.

passenger services for up to 15 years, even if subsequent requests for capacity for BRI-related flows would have greater economic, social or environmental benefits. The most effective means of addressing this issue may be for capacity allocators to take into account longer term forecasts of potential demand for infrastructure capacity.

As discussed earlier in the study (please see Section 3.3.15), the availability of capacity within the EU would be of limited benefit without sufficient capacity also being available on non-EU transit networks. This suggests that the TEN-T process could be more outward-looking. The TEN-T already provides maps for "neighbouring countries" including Norway, Switzerland, the Balkans and Turkey, as well as Belarus, Moldova, and Ukraine[79], but not Russia, which could be included, being a core country of the BRI rail flows. However, studying and sharing information with neighbouring countries will not, in itself, resolve problems of capacity and capacity allocation or prioritisation.

[79] The indicative maps on the extension of the TEN-T core network to the Eastern Partnerships countries (Armenia, Azerbaijan, Belarus, Moldova and Ukraine) have been recently agreed upon (European Commission, 2017).

5. RECOMMENDATIONS

KEY FINDINGS

- The EU should use the framework of the "Connectivity Platform" to seek greater clarity on the geographical and project scope of the BRI. In particular, in collaboration with China, it should seek to **establish priority corridors and develop corridor studies analogous to those prepared for TEN-T.**
- **There is no immediate case for modifying the existing TEN-T programme to address bottlenecks or constraints with a view to accommodating additional traffic generated by the BRI.** The scope and future evolution of the BRI is too uncertain to be confident that investment at specific locations along a given TEN-T corridor would be justified.
- However, the **TEN-T Corridor Studies should be reviewed periodically to take account of developments in the BRI and other relevant third-country initiatives**. More generally, TEN-T policy should become more outward-focused to take explicit account of such initiatives.
- The regular review of **TEN-T Corridor Studies should be facilitated by the preparation of traffic forecasts for priority BRI corridors**, following the model of the European Commission's Reference Scenario forecasts of transport, energy and emissions.
- **The European Parliament should support the European Commission in implementing its proposals for implementing a European Industrial Policy**, in particular those initiatives designed to establish the EU's position as a global hub for standards, and more generally improve the competitiveness of European export industries.
- The European Parliament should also support the European Commission in developing and implementing proposals for the screening of foreign direct investment (FDI), the opening up of public procurement markets in third countries, and encouraging China to participate in the OECD Arrangement on Guidelines for Officially Supported Export Credits.
- The European Parliament should continue to **monitor closely the negotiation of the Comprehensive Agreement on Investment with China**, with a view to ensuring that it provides a platform for fair and undistorted competition and for compliance with EU market rules and standards in the promotion and implementation of future BRI projects.

5.1. Introduction

This chapter analyses the implications of the findings from this study for EU policy on the BRI and relationships with China more generally. The study suggests a number of recommendations which relate to:

- dialogue and cooperation;
- TEN-T policy; and
- relevant EU legislative frameworks.

Each of these is discussed in turn.

5.2. Dialogue and cooperation

In Sections 1.2.3 and 1.4.3 it was noted that the geographical and project scope of the BRI are not clearly defined and that they continue to evolve. To some extent, this is an inevitable consequence of the stated aim of the Initiative, which is intended to invite dialogue and cooperation between China and any of the 65 countries covered by the seven corridors described in Section 1.2.1. It was also noted that engagement with China at the level of the EU is at an early stage, and that further work to support the coordination of TEN-T and BRI policy is required (please see Section 1.6.2).

An important starting point for improved coordination of the two policies is greater clarity on the definition of the BRI. For example, there is no definitive map of the various BRI corridors analogous to that published by the European Commission showing the various TEN-T CNCs. Similarly, there are no corridor studies for the BRI providing detailed information on route characteristics, capacity and investment priorities. While it would be difficult to develop a comprehensive set of studies covering the full geographical scope of the BRI, they could be prepared for a limited number of priority corridors connecting with TEN-T routes and the wider European transport network.

The EU is not in a position to initiate such studies unilaterally, not least because they would require information from a number of countries along the relevant BRI corridors, as well as from China. However, the EU could encourage their development through the framework of the "Connectivity Platform". This would require the establishment of an Expert Group to identify key BRI corridors and to collect relevant information from the countries in which they lie.

The analysis of potential future traffic flows in this study suggests that the first study should focus on the New Eurasian Land Bridge Corridor connecting with the North Sea – Baltic Core Network Corridor of the TEN-T. This would require dialogue with other organisations already engaged in the development of rail transport routes in Eurasia, in particular CAREC. It would also require engagement with organisations such as UNIFE, representing manufacturers of rail equipment, with an interest in the promotion and application of EU standards beyond its borders.

5.3. TEN-T

The analysis of BRI-related traffic flows presented in Chapter 2 suggested that the BRI could generate additional rail freight of approximately 3 million TEU (equivalent to 50-60 trains per day or 2-3 trains per hour each way) between the Far East and the EU by 2040. Subsequently, it was concluded that the most likely TEN-T corridor to be required to accommodate this traffic would be the North Sea – Baltic Core Network Corridor. However, the estimates of traffic in the relevant Corridor Study extend only to 2025, and appear to be small compared with the forecasts of potential traffic by 2040 made in this research paper. It is therefore not clear whether, when and where there will be insufficient rail capacity to carry BRI-related traffic flows.

It is not expected that the BRI changes patterns of shipping traffic materially other than to reduce slightly the volume of freight entering the EU via the North Sea Ports. Any effect might be offset by a growth in the shipment of BRI-generated freight across the North Sea to the UK and Ireland. Nevertheless, it should be noted that maritime trade between China and the EU is already well-established, and that it is not possible to forecast possible changes in related trade patterns as a result of the BRI.

Given these results, and taking account of the uncertainties surrounding the definition and evolution of the BRI, recommendations to address particular constraints or bottlenecks on TEN-T beyond those already highlighted by the corridor studies would be premature. In the absence of greater clarity on the scope and priorities of the BRI, there is a risk that the development of specific investment projects designed to accommodate more traffic on the North Sea – Baltic Core Network Corridor, for example, would prove either inadequate or redundant. An assessment of the appropriate focus of investment could only be made after completion of the exercise recommended in Section 5.2 to identify priority BRI corridors and to specify their capacity requirements had been completed.

At the same time, the TEN-T Corridor Studies should be reviewed and developed periodically as the work of the "Connectivity Platform" progresses and the BRI is defined more clearly. This would require TEN-T policy to become more outward-looking, with an explicit requirement to take account of major policy initiatives sponsored by countries outside the EU. It could also be facilitated by the development of periodic forecasts of BRI-related traffic, following the model of the European Commission's Reference Scenario (European Commission, 2016), with forecasts developed under the framework of the "Connectivity Platform" and jointly approved by participating countries.

5.4. EU legislative frameworks

Based on interviews with a range of stakeholders, as reported in Chapter 3, several challenges posed by the BRI were identified. A number of these reflect concerns expressed about the willingness and ability of Chinese investors and contractors to operate within the framework of market rules and standards defined by EU legislation (please see Section 3.3.13). At the same time, some stakeholders consider that the BRI represents an opportunity to promote EU standards across Eurasia, thereby improving export opportunities for EU-based companies, notably those supplying or constructing transport infrastructure or equipment.

The European Commission is already alert to these issues, as indicated in the speech given by the President of the Commission in September 2017 (European Commission, 2017). This included an outline of European Industrial Policy comprising a number of initiatives of relevance in developing a response to the BRI. In particular:

- The policy includes an initiative for establishing a modern standardisation system to ensure that the EU remains a global hub for standardisation. This will be particularly important in promoting European Railway Traffic Management System (ERTMS) technology, one of the largest beneficiaries of TEN-T funding in the 2007-2013 and 2014-2020 Multiannual Work Programmes.
- The policy also includes an initiative to improve the competitiveness of Europe's export industries and to increase their access to global value chains. This should inform negotiations with China over the Comprehensive Agreement on Investment (please see Section 1.6.1).

The study recommends that the European Parliament supports the Commission in implementing these initiatives and continue to monitor progress on the Comprehensive Agreement on Investment. In the light of the issues discussed in Chapter 4, key issues to consider in the context of the BRI are:

- the screening of foreign direct investment (FDI);
- the establishment of a level-playing field in public procurement markets; and
- export credit guidelines.

5.4.1. Screening of foreign direct investment (FDI)

The May 2017 European Commission paper 'Harmonising Globalisation' confirmed that openness to foreign investment remains a key principle for the EU and a major source of growth. However, it also recognised concerns about foreign investors, notably state-owned enterprises, taking over technology-intensive European companies for strategic reasons, and that EU investors often do not enjoy the same rights to invest in the country from which the investment originates. In September 2017, it issued a draft Regulation (EC 2017/0224 (COD)[80]) to establish a framework for the Member States, and in certain cases the Commission, to screen FDI in the EU, while allowing Member States to take account of national circumstances.

The study recommends that the European Parliament supports the EC's proposal, as it would ensure the EU's ongoing openness to FDI while preventing the capture of key European intellectual property by competitors.

5.4.2. Public procurement

Section 3.3.13 discusses the European Commission's concerns that many foreign public sector procurement markets remain closed. In the light of this, the EC considers the need for a legislative instrument to accelerate the opening of such markets to be "pressing", and has adopted a proposal for a "Regulation of the European Parliament and of the Council on the access of third-country goods and services to the Union"[81]. However, this proposal, which was adopted by the European Commission in March 2012, did not complete its first reading, although it was discussed by both the European Parliament and the Council.

More recently, the European Commission has announced its intention to amend the initial proposal and to present new draft legislation as part of its current work programme. The study recommends that, subject to careful review of the amendments, the European Parliament supports the proposal, in order to establish reciprocity of access to public procurement markets in the EU and China as soon as possible.

5.4.3. Export credit guidelines

Section 3.3.13 highlighted concerns that China is not bound by the OECD's guidelines on export credit, providing Chinese companies with an unfair advantage in export markets. Of the ten largest economies in the world, only China (the second largest), India (the seventh largest) and Brazil (the ninth largest) do not participate in the OECD Arrangement on Guidelines for Officially Supported Export Credits.
The study suggests that, in monitoring progress towards a Comprehensive Agreement on Investment, the European Parliament seeks to ensure that China's participation in the OECD framework is a key objective of the EU's negotiating strategy.

[80] 2017/0224 (COD) – Proposal for a Regulation of the European Parliament and of the Council establishing a framework for screening of foreign direct investments into the European Union. Brussels, 13 September 2017, COM(2017) 487 final.

[81] European Commission (21 March 2012), Proposal for a Regulation of the European Parliament and of the Council on the access of third-country goods and services to the Union's internal market in public procurement and procedures supporting negotiations on access of Union goods and services to the public procurement markets of third countries, Brussels, COM (2012) 124 final, available at http://trade.ec.europa.eu/doclib/docs/2012/march/tradoc_149243.pdf.

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ANNEX 2. MEMORANDA OF UNDERSTANDING

Table 15: MoUs between China and European countries within the BRI framework

Country	General framework on cooperation under the BRI	MoU on transport or infrastructure or custom cooperation	MoU on other topics	Comments
EU MEMBER STATES				
Austria			2017 May	MoU on finance and banking cooperation signed at the Belt and Road Forum (May 2017) between major Austrian banks (including Raiffeisen Bank International), China Development Bank and Industrial and Commercial Bank of China.
Belgium				No MoU found.
Bulgaria	2015 Nov	2016 Nov		A MoU on "Jointly Promoting the Construction of the Belt and Road" signed in November 2015. A MoU on "Port and Harbor Industrial Park Cooperation" signed in November 2016.
Croatia	2017 May	2016 Nov		A joint MoU on "Belt and Road Cooperation" signed at the Belt and Road Forum (May 2017). A MoU on "Port and Harbor Industrial Park Cooperation" signed in November 2016.
Cyprus			2017 May	An Agreement on education cooperation signed at the Belt and Road Forum (May 2017).
Czech Republic	2015 Nov		2016 Mar, 2017 May	A joint MoU on "Jointly Promoting the BRI" signed in November 2015. Other MoUs on cooperation on financial, industrial, and health issues, were signed in March 2016 and at the Belt and Road Forum (May 2017). BRI-related investment plans have been limited to a proposal for a canal linking the Danube, Oder and Elbe rivers.

Country	General framework on cooperation under the BRI	MoU on transport or infrastructure or custom cooperation	MoU on other topics	Comments
Denmark				Denmark's participation in the AIIB may be seen as a potential precursor to heavy involvement in the BRI, but the potential for Sino-Danish cooperation within the BRI framework is only now being explored (Van der Putten et al, 2016).
Estonia			2015 Dec, 2017 May	A MoU on trade of dairy products has been signed in December 2015. An Agreement on education cooperation has been signed at the Belt and Road Forum (May 2017).
Finland				Finland and China did not sign any MoUs yet within the BRI framework. However, China and Finland recently pledged to enhance bilateral cooperation in Arctic affairs[82].
France			2017 May	A limited number of projects have been launched within the BRI framework, but the Initiative is not regarded as a high priority in France and is viewed with some scepticism. There are also concerns about the implications of different standards for trade and commerce. A MoU on a second Sino-French Small and Medium-sized Enterprises Fund has been signed at the Belt and Road Forum (May 2017).

[82] During his state visit to Finland in April 2016, Xi Jinping reached an important consensus with Finnish President Sauli Niinistö on deepening bilateral cooperation under the framework of the BRI. As a follow-up, the Finnish Minister of Transport and Communications Anne Berner attended the Belt and Road Forum in Beijing. Chinese Premier Li Keqiang and Finnish Prime Minister Juha Sipila discussed opportunities for enhanced cooperation on 27 June 2017 in Dalian (China) during the annual World Economic Forum meeting (GBtimes, 2017, and Asia Times, 2017).

Country	General framework on cooperation under the BRI	MoU on transport or infrastructure or custom cooperation	MoU on other topics	Comments
Germany		2016 Mar, 2017 May		The Initiative has not generated new projects, although some existing rail projects designed to improve connections between China and Germany have been rebranded. Increasingly, Germany is seeking a multilateral approach to the BRI, partly driven by concerns that BRI-related projects should conform to EU standards. Deutsche Bahn and China Railways have signed a MoU on "Further Developing the New Eurasian Land Bridge" in March 2016 and a MoU on Further Cooperation on China-Europe Container Block Trains at the Belt and Road Forum (May 2017).
Greece	2017 May		2017 May	As the home of the Piraeus port project, Greece hosts a large-scale investment project that is part of the BRI. The China Ocean Shipping Company (COSCO) has already invested €369 million in Piraeus and is committed to further substantial investment over the next decade. The "2017-19 Plan on Key Areas of Cooperation Between China and Greece", as well as a MoU on "Strengthening Standards Cooperation and Building the Belt and Road" have been signed at the Belt and Road Forum (May 2017).

Country	General framework on cooperation under the BRI	MoU on transport or infrastructure or custom cooperation	MoU on other topics	Comments
Hungary	2015 Jun	2014 Nov, 2017 May	2017 May	The Hungarian State Railways is part of a consortium including China Railway Group and China Railway Corporation that has been awarded €1.5 billion to upgrade a section of line on the Budapest-Belgrade railway (November 2014). This forms an important part of the BRI to develop the connection between Piraeus and Central Europe. More generally, there is bilateral cooperation with China, reflected in a joint MoU on "Jointly Promoting the BRI" signed in June 2015. Further MoUs on policy cooperation, Small and Medium-sized Enterprises, and research and development projects have been signed at the Belt and Road Forum (May 2017).
Ireland			2017 May	A cooperation agreement on inspection and quarantine has been signed at the Belt and Road Forum (May 2017).
Italy			2017 May	The Italian Government showed interest in the BRI and a MoU on the Sino-Italian Co-Investment Fund has been signed at the Belt and Road Forum (May 2017). Italy has specific interest in strengthening maritime transport relations with China. Genoa and Trieste ports were indicated by the Italian Prime Minister as priority seaports for the BRI (Il Sole24ORE, 2017)
Latvia	2016 Nov	2016 Nov		A joint MoU on "Belt and Road Cooperation" as well as in a MoU on Port and Harbor Industrial Park Cooperation signed in November 2016.
Lithuania		2016 Nov		A MoU on "Port and Harbor Industrial Park Cooperation" signed in November 2016.
Luxem-bourg				No MoU found.
Malta				No MoU found.

Country	General framework on cooperation under the BRI	MoU on transport or infrastructure or custom cooperation	MoU on other topics	Comments
Nether-lands		2017 May		Dutch involvement has so far been limited to participation in the AIIB. The China Ocean Shipping Company has purchased a 35% stake in the Euromax terminal in Rotterdam, suggesting that it will continue to use the port as a main base for shipping operations in Northwest Europe. A MoU on customs cooperation has been signed at the Belt and Road Forum (May 2017).
Poland	2015 Nov	2016 Jun, 2017 May	2015 Nov, 2016 Jun, 2017 May	A joint MoU on Belt and Road Cooperation signed in November 2015. A MoU on "Strengthening investment cooperation in logistics infrastructure", as well as a MoU on cooperation in facilitating customs clearance, have been signed in June 2016. Polskie Linie Kolejowe (Polish State Railways,PKP) and China Railways signed a MoU on "Further Cooperation on China-Europe Container Block Trains" at the Belt and Road Forum (May 2017). Other MoUs on cooperation on financial cooperation, customs cooperation, industrial development and industrial parks, communication, environmental resources and tourism have been signed in November 2015, June 2016 and May 2017 (at the Belt and Road Forum). Poland aims to become a BRI hub within Central Europe, exploiting the potential both to attract Chinese investment and to expand exports to China. No new projects have been launched to date, although existing projects such as the Lodz-Chengdu rail connection have been recast within the BRI framework.

Country	General framework on cooperation under the BRI	MoU on transport or infrastructure or custom cooperation	MoU on other topics	Comments
Portugal				Portugal has yet to develop a strategy towards the BRI, although China recognises it as a leading country in the provision of cargo-handling infrastructure. China is particularly interested in the port of Sines, which has no restrictions on the size of ship that can be handled, and could support improved connectivity between China, Western Europe and Africa.
Romania	2015 Jun			In June 2015, the Ministry of Economy, Trade and Tourism of Romania and the Ministry of Commerce of China signed a MoU for the joint development of the Silk Road Economic Belt within the framework of the Romania-China Joint Intergovernmental Commission for Economic Cooperation.
Slovakia	2015 Nov			A MoU on "Jointly Promoting the Belt and Road Initiative" has been signed in November 2015. However, Slovakia's involvement in the BRI has been limited so far, reflecting the fact that it has little to contribute to the development of the infrastructure as it is outside the main corridors covered by the BRI.
Slovenia				No MoU found.
Spain				Spain has identified potential benefits from the BRI in construction, management of large infrastructure, tourism and food exports. However, the potential for expanding activity in any of these areas is not yet clear as the initiative is not yet fully developed (Van der Putten et al, 2016).

Country	General framework on cooperation under the BRI	MoU on transport or infrastructure or custom cooperation	MoU on other topics	Comments
Sweden			2015 Sep	Sweden has no strategy towards the BRI, and there are no formal agreements between the governments of Sweden and China, with the exception of a MoU on corporate social responsibility signed in September 2015. This appears to be the result of a cautious "wait and see" approach rather than a proactive response (Mikael Weissmann and Elin Rappe, 2017).
United Kingdom			2016 Nov	The UK government regards the BRI as a platform for strong commercial cooperation, notwithstanding that the formal geography of the initiative does not extend across the English Channel. It can be expected to pursue opportunities for UK companies to undertake infrastructure-related projects and to provide financial support. A MoU on legal cooperation has been signed in November 2016.
NON-EU STATES				
Albania	2017 May	2015 Nov	2017 May	A MoU on construction of the Blue Corridor motorway project has been signed in November 2015 between the Albanian Government and the Pacific Construction Group.

Country	General framework on cooperation under the BRI	MoU on transport or infrastructure or custom cooperation	MoU on other topics	Comments
Belarus		2017 May	2016 Sep, 2017 May	In September 2016, Belarus and China signed a package of agreements and a MoU covering in various financial, agriculture and trade and aerospace areas, including the development of the Chinese-Belarusian Industrial Park project. A MoU on international transportation and strategy coordination, as well as a MoU on "Strengthening Standards Cooperation and Building the Belt and Road" have been signed by the Belarusian and Chinese Governments at the Belt and Road Forum (May 2017). Belarusian Railways and China Railways have signed a MoU on Further Cooperation on China-Europe Container Block Trains at the Belt and Road Forum (May 2017).
Bosnia and Herze-govina	2017 May		2017 May	Bosnia and Herzegovina and China signed a MoU on Belt and Road cooperation, as well as an additional MoU on economic, trade and education cooperation at the Belt and Road Forum (May 2017).
FYROM			2017 Sep	The "16 + 1 Format" signed a MoU on the establishment of a Cultural Cooperation Coordination Centre in Macedonia in September 2017.
Moldova			2017 May	Moldova and China signed a MoU on "Concluding the Joint Feasibility Study of the China-Moldova Free Trade Agreement" at the Belt and Road Forum (May 2017).
Monte-negro	2017 May	2015 Nov	2017 May	A MoU on construction of the Blue Corridor motorway project signed in November 2015 between the Montenegrin government and the Pacific Construction Group.
Norway			2017 May	Two agreements on inspection and quarantine, and on health cooperation signed at the Belt and Road Forum (May 2017).

Country	General framework on cooperation under the BRI	MoU on transport or infrastructure or custom cooperation	MoU on other topics	Comments
Serbia	2015 Nov	2014 Dec, 2017 May	2017 May	A joint MoU on "Jointly Promoting the BRI" signed in November 2015. Two MoUs on "Modernisation and reconstruction of the railway link between Belgrade and Budapest" have been signed by the Serbian Government, the Chinese Government, China Development Bank, and China Exim Bank in December 2014 and May 2017 (Belt and Road Forum). Other MoUs on telecommunication, trade and economic development, agriculture, standards cooperation and financial cooperation have been signed at the Belt and Road Forum (May 2017).
Switzer-land		2017 May	2017 May	A MoU on "Strengthening Standards Cooperation and Building the Belt and Road" has been signed in at the Belt and Road Forum (May 2017).
Turkey	2015 Nov	2017 May	2017 May	Turkey and China signed a MoU on "Jointly Promoting the construction of the Belt and Road Initiative" ahead of the G20 Summit in Antalya, Turkey, in November 2015. A MoU on international transportation and strategy coordination, as well as another MoU on cooperation standards, and cooperation on financial, telecommunication, and cultural issues have been signed by the Turkish and Chinese government at the Belt and Road Forum (May 2017).
Ukraine			2017 May	A MoU on standardisation has been signed at the Belt and Road Forum (May 2017).

Source: Steer Davies Gleave desk research, Deliverables of the BRF, van der Putten et al (2016)

ANNEX 3. CHINESE PROJECTS IN OTHER BRI COUNTRIES

Table 16: Chinese projects in transport and infrastructure in BRI countries

ID	Country	Mode of tran-sport	Project title	Company or fund engaged	Approx-imate project value	Status
1	Albania	Air	Acquisition of 100% of Tirana International Airport (company responsible for operations and management of the airport)	China Everbright and Friedmann Pacific Asset Management	€81 million	Completed in 2016
2	Albania	Road	Completion of Albania Arber motorway to Macedonia and Bulgaria	Albanian Government and Export-Import Bank of China (based on MoU)	N/A	Not Started
3	Albania - Montenegro	Road	Construction of the Blue Corridor motorway that will stretch from Trieste (Italy) to Greece via Croatia, Montenegro and Albania	Albania, Montenegro and Pacific Construction Group (based on MoU)	N/A	Not Started
4	Bangladesh	Road	Construction of the underwater river tunnel in the city of Chittagong (Karnaphuli Tunnel)	Export-Import Bank of China	N/A	Not Started
5	Belarus	Rail	Electrification of the railway line Molodechno-Gudogay	Export-Import Bank of China	€65 million	Ongoing
6	Belarus	Rail	Electrification of the railway line Gomel-Zhlobin-Osipovichi	Export-Import Bank of China	€68 million	Completed in 2015
7	Belarus	Road	Upgrade of Motorway M5 Bobruysk-Zhlobin	Export-Import Bank of China	€273 million	Completed in 2016

ID	Country	Mode of tran-sport	Project title	Company or fund engaged	Approx-imate project value	Status
8	Belarus	Road/ Rail	Construction of the Great Stone Industrial Park nearby Minsk International Airport	China National Machinery Industry Corporation, China Merchants Group, China Camc Engineering Co. Ltd, Harbin Investment Group, "Great Stone" Industrial Park Admin, Minsk City Executive Committee, HORIZONT Holding Management Company	€195 million	Not Started
9	Bosnia Herze-govina	Road	Motorway Banja Luka-Mlinište	Export-Import Bank of China	€1,400 million	Ongoing
10	Cambodia	Road	Extension of the National Motorway 76	Export-Import Bank of China	€80 million	Completed in 2017
11	Cambodia	Road	Koh Thom bridge	Export-Import Bank of China	€16 million	Completed in 2016
12	Cambodia	Road	Fourth lane of the National Road Chroy Changvar-Thnal keng	Export-Import Bank of China	€59 million	Completed in 2014
13	Cambodia	Road	Chroy Changvar II Bridge	Export-Import Bank of China	€23 million	Completed in 2015
14	Cambodia	Road	National Road 76	Export-Import Bank of China	€78 million	Ongoing
15	Cambodia	Road	National Road 214 and Stung Treng-Mekong bridge	Export-Import Bank of China	€99 million	Completed in 2015
16	Cambodia	Air	Construction of the Siem Reap Angkor International Airport	Yunnan Construction Engineering Group Co. Ltd	€748 million	Not Started
17	Cambodia	Road	Project on National Road 11 and Stung Trang-Krauch Chhmar bridge	Export-Import Bank of China	N/A	Not Started

ID	Country	Mode of tran-sport	Project title	Company or fund engaged	Approx-imate project value	Status
18	Cambodia	Road	Construction of National Road 55	Specific Chinese Company or Fund N/A	€113 million	Ongoing
19	Cambodia	Road	Extension of National Highway 5	Specific Chinese Company or Fund N/A	€48 million	Ongoing
20	Cambodia	Rail	Preah Vihear-Kaoh Kong railway	Cambodia Iron and Steel Mining Industry Group, China Railway Group	€8,126 million	Not Started
21	Cambodia	Road	Prek Tamak bridge	Export-Import Bank of China	€37 million	Completed in 2010
22	France	Air	Acquisition of 49.99% stake in Toulouse Airport management company	China's Shandong Hi-Speed Group and Friedmann Pacific Investment Group	€308 million	Completed in 2015
23	France	Mari-time	Acquisition of 49% of CMA CGM terminal container operating arm (Terminal Link) at Marseille Port	China Merchants Group International	€400 million	Completed in 2013
24	Georgia	Road	Bypass project for the Batumi port area	Asian Infrastructure Investment Bank	€96 million	Ongoing
25	Germany	Air	Acquisition of 82.5% of Frankfurt-Hahn Airport	HNA Aviation Group and German firm ADC	€16 million	Completed in 2017
26	Greece	Mari-time	Acquisition of 51% share in Piraeus Port	COSCO	€369 million	Completed in 2016
27	India	Road	Improvement of the main roads in Madhya Pradesh	New Development Bank	€249 million	Ongoing
28	Indonesia	Rail	Jakarta-Bandung high speed railway	China Development Bank	€3,500 million	Ongoing
29	Indonesia	Road	Manado-Bitung Toll Road	Export-Import Bank of China	€70 million	Ongoing
30	Indonesia	Road	Solo-Kertosono Toll Road	Export-Import Bank of China	€169 million	Ongoing

ID	Country	Mode of tran-sport	Project title	Company or fund engaged	Approx-imate project value	Status
31	Indonesia	Rail	Construction of a rail connection between the three coal centres of Puruk Cahu, Bankuang and Lupak Dalam	Specific Chinese Company or Fund N/A	€3,978 million	Ongoing
32	Iran	Rail	Tehran-Mashhad Railway Electrification	Export-Import Bank of China	€1,269 million	Ongoing
33	Ireland	Air	Acquisition of 100% of Irish aircraft leasing company Avolon	Bohai Leasing (HNA Group)	€2,380 million	Completed
34	Israel	Mari-time	Concession of Bayport terminal in Haifa Port	Shanghai International Port (Group)	€966 million	Ongoing
35	Italy	Road	Acquisition of a 5% share in Autostrade per l'Italia	Silk Road Fund	€705 million	Completed in 2017
36	Italy	Mari-time	Acquisition of a 49.9% share of Vado Port	Qingdao Port Group and COSCO Shipping Ports	€53 million	Ongoing
37	Kazakhstan	Road	Centre South Road Corridor (Karaganda-Balkhash-Burylbaital section)	Asian Infrastructure Investment Bank	€582 million	Ongoing
38	Kazakhstan	Rail	Construction of Astana Light Rail	China Development Bank	€1,522 million	Ongoing
39	Kyrgyzstan	Road	Osh-Batken-Isfana road axis (specific sections)	Export-Import Bank of China	N/A	Completed in 2015
40	Kyrgyzstan	Road	North-South alternative road axis	Export-Import Bank of China	€339 million	Ongoing
41	Kyrgyzstan	Road	Rehabilitation of CAREC Corridor 1 Bishkek-Naryn-Torugart Road	Export-Import Bank of China	€169 million	Completed in 2014
42	Laos	Rail	China-Laos railway project	Export-Import Bank of China	€5,300 million	Ongoing

ID	Country	Mode of tran-sport	Project title	Company or fund engaged	Approx-imate project value	Status
43	Laos	Road	Construction of Pakbeng-Ngeun Bridge on Mekong River	Export-Import Bank of China	€26 million	Completed in 2015
44	Luxemburg	Air	Acquisition of 35% stake in Cargolux airline	HNCA	€198 million	Completed in 2014
45	Macedonia	Road	Construction of Kicevo-Ohrid and Miladinovci-Stip motorway sections	Export-Import Bank of China	€581 million	Ongoing
46	Malaysia	Mari-time	Acquisition of a share in Kuantan port	Guangxi Beibu Gulf International Port Group Co Ltd	€85 million	Completed in 2015
47	Malaysia	Rail	East Coast Rail Line (ECRL)	Export-Import Bank of China	€10,892 million	Ongoing
48	Mongolia	Rail	Development of rail link between the town of Erdenet to the Trans-Mongolian Railway for coal export	China Railway Construction Corporation Limited (CRCC), Aspire Mining	€1,062 million	Ongoing
49	Montenegro	Road	Construction of the motorway connection between the port of Bar and Boljare; Smokovac-Uvač-Mateševo section (part of European Motorway XI)	Export-Import Bank of China, Government of Montenegro	€807 million	Ongoing
50	The Netherlands	Mari-time	Acquisition of 35% shares of the Euromax Terminal in Rotterdam	COSCO	€41 million	Completed in 2016
51	Oman	Road/ Mari-time	Development project of the Duqm port and of the road network for its access	Asian Infrastructure Investment Bank	€223 million	Ongoing
52	Oman	Rail	Oman railway network project	Asian Infrastructure Investment Bank	€30 million	Ongoing

ID	Country	Mode of tran-sport	Project title	Company or fund engaged	Approx-imate project value	Status
53	Pakistan	Road	Build-Operate-Transfer (BOT) transaction for the motorway from the cities of Hyderabad and Sukkur in Pakistan's Sindh province (part of the Peshawar-Karachi motorway)	Specific Chinese Company or Fund N/A	€1,530 million	Ongoing
54	Pakistan	Road	National Motorway M4 Shorkot-Khanewal section	Asian Infrastructure Investment Bank	€84 million	Ongoing (financial phase)
55	Pakistan	Road	Construction of Havelian-Thakot section of the Karakoram Highway	Export-Import Bank of China	€965 million	Ongoing
56	Pakistan	Road	Raikot-Khunjerab Karakoram motorway	Export-Import Bank of China	N/A	Completed in 2013
57	Pakistan	Road	Construction of Basima-Khuzdar Highway	Specific Chinese Company or Fund N/A	€162 million	Not Started
58	Pakistan	Mari-time	Construction of Breakwaters as part of a larger series of construction projects on Gwadar Deep Sea Port	Specific Chinese Company or Fund N/A	€123 million	Completed
59	Pakistan	Road	East-Bay Expressway-link Gwadar Port-Makran Coastal Highway	Specific Chinese Company or Fund N/A	€119 million	Not Started
60	Pakistan	Rail	Construction of the automated light rail rapid transit system in Lahore	Export-Import Bank of China, Industrial and Commercial Bank of China	€1,329 million	Ongoing
61	Pakistan	Road	Karachi-Peshawar Motorway	Specific Chinese Company or Fund N/A	€2,370 million	Ongoing
62	Pakistan	Road	Raikot-Khunjerab Karakoram Highway (Upgrade)	Export-Import Bank of China	€415 million	Completed in 2013

ID	Country	Mode of tran-sport	Project title	Company or fund engaged	Approx-imate project value	Status
63	Pakistan	Road	Yarik-Zhob dual carriageway	Specific Chinese Company or Fund N/A	€657 million	Not Started
64	Romania/ Serbia/ Montenegro	Road	Construction of sections of motorway sections from Timisoara (Romania) to Bar (Montenegro), via Belgrade (Serbia) (part of European motorway X)	Export-Import Bank of China	€1,028 million	Ongoing
65	Russia	Rail	Construction and upgrade of Belkomur rail between the Urals and the ice-free ports in Archangelsk	Poly Technologies	€4,675 million	Not Started
66	Russia	Rail	Construction of Moscow-Kazan High Speed Railway	China Railway International Group	€18,115 million	Not Started
67	Russia	Mari-time	Construction of deep-water port at Zarubino	Summa Group, China Merchants Holding International	€2,540 million	Not Started
68	Russia/ China	Rail	Construction of Amur bridge between Blagoveshchensk, Nizhneleninskoye (Russia) and Heihe, HeilongJiang (China)	Russia-China Investment Fund, Petropavlovsk PLC, OJSC Far East Development Fund	€194 million	Ongoing
69	Serbia	Road	Corridor XI, Motorway E-763 Belgrade-Southern Adriatic (Obrenovac-Ub and Lajkovac-Ljig sections)	Export-Import Bank of China	€600 million	Ongoing
70	Serbia	Road	Pupin bridge in Belgrade	Export-Import Bank of China	€216 million	Completed in 2014
71	Serbia - Hungary	Rail	Belgrade-Budapest high-speed railway link	Export-Import Bank of China	€1,711 million	Not Started

ID	Country	Mode of tran-sport	Project title	Company or fund engaged	Approx-imate project value	Status
72	Singapore	Rail	Acquisition of a stake in the infrastructure contractor Sapphire Corporation	HNA Infrastructure Company Limited	€29 million	Completed in 2017
73	Spain	Mariti me	Acquisition of a 51% stake in Noatum Ports (terminal container operator in Valencia and Bilbao ports)	COSCO Shipping Ports Ltd	€203 million	Completed in 2017
74	Sri Lanka	Mariti me	Expansion of the Port of Colombo	China Development Bank	€279 million	Completed in 2013
75	Sri Lanka	Road	Colombo-Katunayake Expressway	Export-Import Bank of China	€210 million	Completed in 2013
76	Sri Lanka	Road	E01 South Expressway	Export-Import Bank of China	€15,255 million	Ongoing
77	Sri Lanka	Mari-time	Port of Hambantota - Phase I	China National Electric Import & Export Corporation (CUEC), Sri Lanka Ministry of Transport and Civil Aviation	€306 million	Completed in 2010
78	Sri Lanka	Mari-time	Port of Hambantota - Phase II	Export-Import Bank of China	€686 million	Completed in 2015
79	Sweden	Rail	Acquisition of 37.5% Arlanda Express	State Administration of Foreign Exchange (SAFE)/Gingko Tree Investments Ginko Tree Investment (GTIL)	€527 million	Completed in 2014
80	Tajikistan	Rail	Dushanbe-Kurgantube railway (Vahdat-Yavan section)	Export-Import Bank of China	€51 million	Ongoing

ID	Country	Mode of tran-sport	Project title	Company or fund engaged	Approx-imate project value	Status
81	Tajikistan - Uzbekistan	Road	Improvement of the CAREC Corridor 3 - Doošanbe Motorway to the Uzbekistan border	Asian Infrastructure Investment Bank	€23 million	Ongoing
82	Turkey	Mari-time	Acquisition of the majority stake of Kumport container terminal	China Investment Corporation (CIC), China Merchants Holdings International (CMHI), COSCO (Hong Kong) Group	€799 million	Completed in 2015
83	United Kingdom	Air	Acquisition of 10% in Heathrow Airport Holding	China Investment Corporation (CIC)	€616 million	Completed in 2012
84	Uzbekistan	Rail	Angren-Pap railway	Export-Import Bank of China	€297 million	Ongoing
85	Vietnam	Rail	Hanoi-Hadong urban railway line	Export-Import Bank of China	€354 million	Ongoing

Source: Steer Davies Gleave

CAT: QA-02-17-061-EN-C (paper)
CAT: QA-02-17-061-EN-N (pdf)

DIRECTORATE-GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT B
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PHOTO CREDIT: iStock International Inc., Photodisk, Phovoir

ISBN 978-92-846-0556-9 (paper)
ISBN 978-92-846-0555-2 (pdf)

doi:10.2861/95772 (paper)
doi:10.2861/349796 (pdf)

Publications Office