
Summary

- **Growth of transit container traffic through the EAEU will be contingent on development of trade between the PRC and the EU.** Currently about 98% of mutual EU–China deliveries are made by maritime transport, with aviation transport and railway transport accounting for 1.5–2% and 0.5–1%, respectively. Approximately 80% of EU–China cargoes are carried in containers, including about 90% of cargoes brought to the EU from China (imports) and 70–75% of cargoes carried from the EU to China (exports).
- **Practically all EAEU exports to the PRC are solid and liquid bulk cargoes, while most imports from China are delivered in containers.** Export freight traffic from EAEU member states to China has a low share of container cargoes (about 1.5–2%) due to the absolute domination in commodity structure of “un-containerisable” cargoes (Fuel, Mineral Raw Materials, Timber, Mineral Fertilisers, Agricultural Raw Materials). Over the last 10 years, the share of container cargoes in total EAEU imports from China has considerably increased (from 35% to 55%). The commodity structure of freight traffic from China, already dominated by containerisable cargoes, stimulates continued containerisation.
- An analysis of the commodity structure of Eurasian freight transport in terms of customs value of goods per unit of mass, consumer properties of goods and technological characteristics of their prepacking, packaging, transport and logistics, has yielded a list of cargoes suitable for the switch from maritime transport to railway transport. Primarily those are: Consumer Goods, Engineering Products and certain Non-Ferrous Metals (e.g. Nickel Products).
- **It is anticipated that railway container traffic between the EU and China (transiting through the EAEU) will increase.** To attract additional freight traffic between the EU and the PRC, EAEU member states need to further expand their transport infrastructure and remove a number of barriers. There has been a considerable increase in railway container traffic from the EU to China, from 1,300 TEU in 2010 to more than 50,000 TEU in 2016. Between 2010–2016, transit container traffic from China to the EU increased from 5,600 TEU to almost 100,000 TEU. At the end of 2017, the volume of transit container traffic across the EAEU along the China–Europe–China route reached 262,000 TEU, exceeding the 2016 value by a factor of 1.8.
- **Increase of container traffic along the PRC–EAEU–EU axis was largely supported by railway transport subsidies provided by China.** Our analysis shows that the annual doubling of the number of container trains and volume of container cargoes along PRC–EAEU–EU routes in 2013–2016 was largely attributable to subsidisation of export railway freight traffic by Chinese authorities. With the Chinese transit container freight rate reduced almost to zero, cargo flows generated by Chinese exporters rapidly switched from sea routes to railway transport.

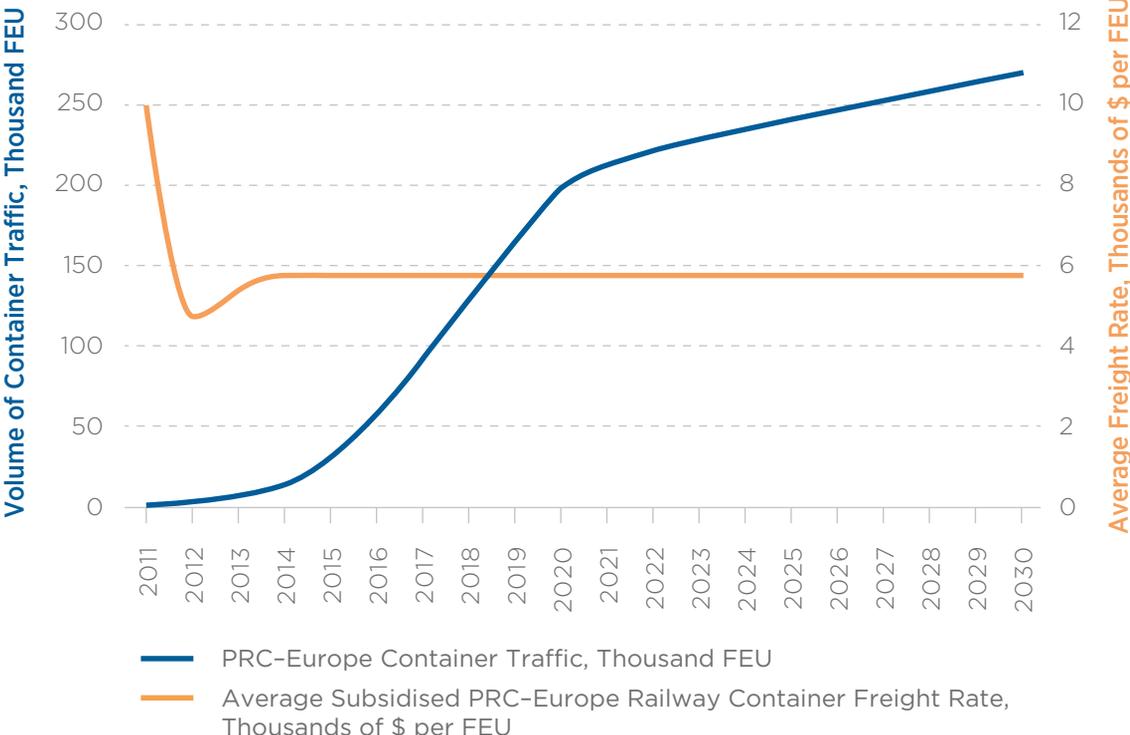
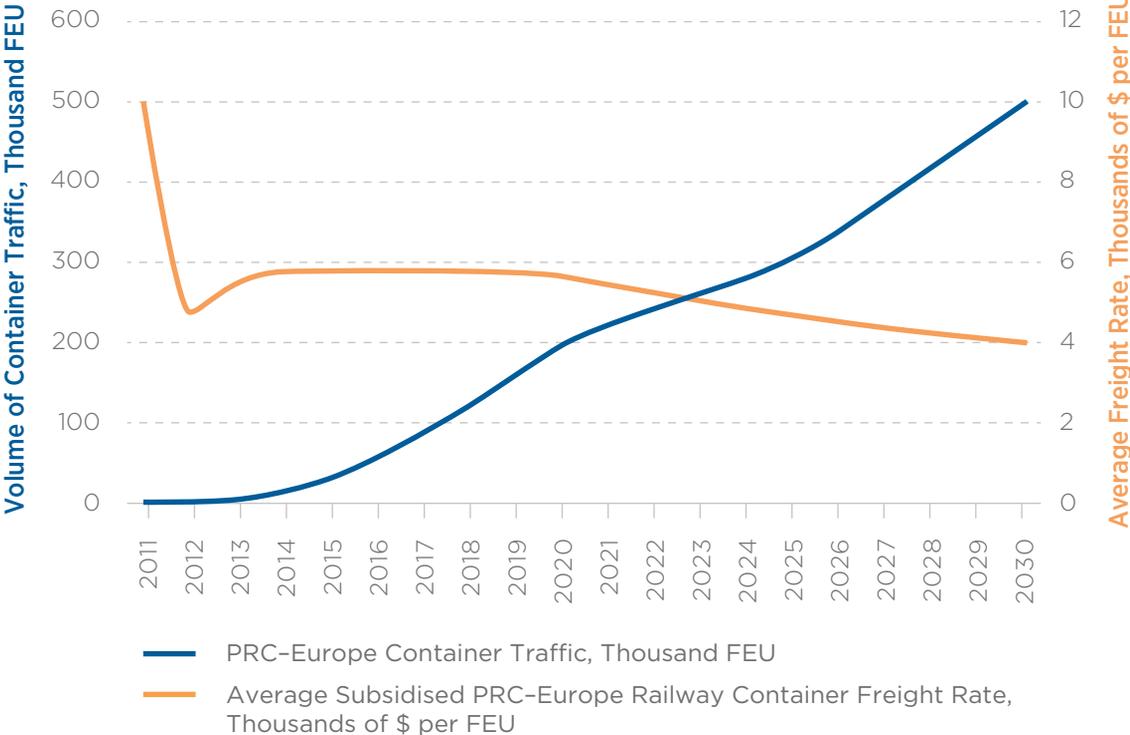
- According to our estimates, **total subsidies provided by Chinese authorities amounted to about \$88 million** in 2016. This estimate assumes an average container transport subsidy of \$2,500 per FEU, with the total number of subsidised containers originating from central PRC provinces standing at 35,000 FEU. An average subsidy per FEU has been merely 0.3–0.4% of the total value of container-shipped cargoes.
- **Preservation and expansion of transport subsidies by Chinese provinces, is the key driver of continued container traffic growth.** The growth of railway container traffic between China and the EU in 2011–2017 from 7,000 FEU to 131,000 FEU (or from 14,000 TEU to 262,000 TEU) has been achieved at a through railway freight rate of \$4,800–6,000 per FEU (subsidised by about 40%) (Figure A). Subsidy-driven reduction of China–Europe railway container freight rates by 30–50%, has resulted in a 19-fold increase of container traffic.
- The current through freight rate (including subsidies) of \$5,500 per FEU, may encourage further growth of container traffic to 200–250,000 FEU in 2020 (a twofold increase over three years). After that, keeping the freight rate at \$5,500 per FEU will no longer produce such a pronounced effect and container traffic growth rates will dramatically decrease (Figure B).
- Container traffic increase from 200–250,000 FEU in 2020 to 500,000 FEU by 2030, is possibly subject to further reduction of the through freight rate by \$1,500 per FEU (from \$5,500 per FEU to \$4,000 per FEU) (Table A).
- **Inferior capacity of crossing points at the Belarus–Poland border, remains one of the key barriers to the growth of container traffic along the PRC–EAEU–EU axis.** This issue will be discussed at length in the next EDB Centre for Integration Studies’ report, which will focus on the impact that non-tariff barriers have on transit potential and on development of transport corridors in EAEU member states.

Conclusion: We believe that explosive growth of container traffic until 2019–2020 is secured. After it plateaus, a lower freight rate will be required to secure further growth. It may be supported by investments (in physical infrastructure, transport and logistics centres, locomotives, border crossing infrastructure, electronic technologies, etc.) and/or by coordination of freight rate policies at the Greater Eurasian level.

Table A.
Impact of Railway Container Freight Rates on Container Traffic

Period	Change in Container Freight Rate (per FEU)	Change in Freight Traffic, Thousand FEU
2011–2017	Reduction by 40% (from \$9,000 to \$5,500)	Growth from 7 to 131
2018–2020	Rate not changed (stays at \$5,500)	1.5–2-fold growth (to 200–250)
2021–2030	Reduction by 30% (from \$5,500 to \$4,000)	2–2.5-fold growth (to 500)

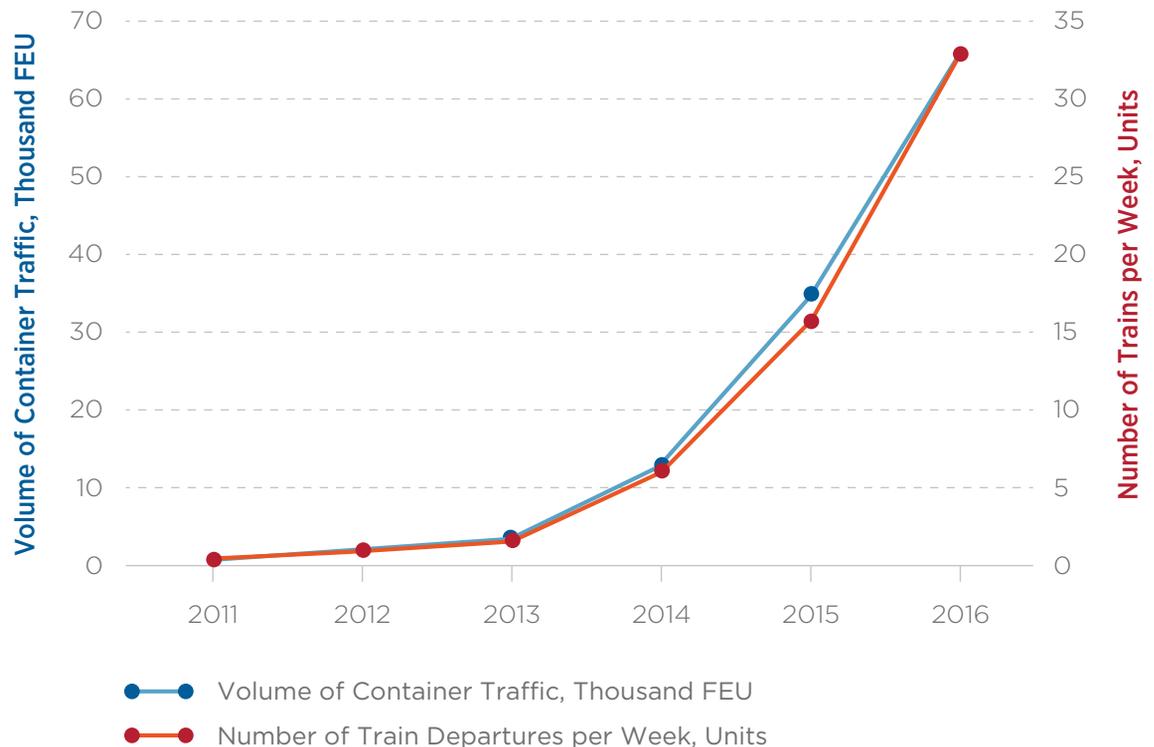
Source: authors’ estimations



- Railway container transport has certain advantages (compared to maritime transport) in the following areas: speed (timeframe), regularity (rhythmicity), reliability (guaranteed on-schedule delivery and cargo preservation) and the ability to deliver the cargo to any destination.
- **In the next two or three years, all regular trains from China that are “placed on track” will be fully loaded.** According to our estimates, **“convenience” elasticity of demand** (“convenience” including promptness, regularity and precision of delivery) in railway container services between China and Europe, **stands at 98%:** in 2011–2016, the number of weekly train departures and the volume of container traffic have been growing virtually at the same rate (Figure C).
- Strict adherence to railway schedules (99.7% of all container trains running along China–Europe routes complete their journeys on schedule) and delivery times approximately one-third of what is offered by maritime transport, guarantee a wide margin of “convenience”.
- **According to our estimates, if current through freight rates are preserved (including Chinese subsidies), the China–Europe container traffic growth potential generated by the margin of “convenience” (promptness, regularity and precision of delivery) is far from exhausted.** By 2020, it may produce a manifold increase in the number of container trains and total volume of container traffic (to reach 200–250,000 FEU), with the number of train departures per week (regularity) going up by a factor of three (to about 100 per week) (Table B).

Figure C.
Changes in Container Trains' Frequency of Departure and Volume of Freight Traffic along PRC–Europe–PRC Routes, 2011–2016

Source:
in-house
calculations



	2011	2012	2013	2014	2015	2016	2020*
Volume of Container Traffic, Thousand FEU	7	14	10	22	40	74	200–250
Number of Train Departures per Week, Units	0.3	1	2	6	16	33	100

Table B. Changes in Container Trains' Frequency of Departure and Volume of Freight Traffic along PRC–Europe–PRC Routes, 2011–2020

* As estimated by the authors.

Source: China Railways Container Transport Co. Ltd (CRCT)

- **The existing potential of export traffic originating from Russia is all but exhausted. It is necessary to find new containerisable niche products that will enjoy demand in the capacious Chinese market, for example, Food Products (including Refrigerated Goods), Prepacked Chemical and Petrochemical Products or Engineering Products.**
- According to our calculations, the maximum additional container traffic that can be attracted to EAEU railway networks is estimated at 2.7 million FEU (5.4 million TEU), including West–East traffic of 325,000 FEU (550,000 TEU) and East–West traffic of 2,375,000 FEU (4,750,000 TEU) (Figure D):
 - EAEU → China—50,000 FEU (100,000 TEU)
 - EU → China—150,000 FEU (300,000 TEU)
 - EU → EAEU—125,000 FEU (250,000 TEU)
 - China → EAEU—250,000 FEU (500,000 TEU)
 - China → EU—2,100,000 FEU (4,200,000 TEU)
 - EAEU → EU—25,000 FEU (50,000 TEU)

However, the large imbalance between existing and additional West–East and East–West freight traffic may prevent EAEU railway networks from attracting all potential freight traffic along the China–EAEU–EU axis.

- **With balanced container loads (containers travelling both ways fully loaded with optimal cargoes; no empty containers), additional container traffic that may be attracted by EAEU railway networks is estimated at 500–550,000 FEU, while total freight traffic along the axis (including existing traffic) may be as high as 650,000 FEU.**

If the existing East–West/West–East container traffic imbalance (2:1) persists and West–East trains additionally take on any containerisable cargoes (subject to adequate development of transport and logistical infrastructure in EAEU member states and subject further to active cooperation of EAEU railway companies with their counterparts in China and the EU and with consignors/consignees potentially interested in using railway transport), aggregate railway container traffic along the China–EAEU–EU axis could, in the long term, reach up to 1 million FEU per year.

SILK ROAD TRANSPORT CORRIDORS:
ASSESSMENT OF TRANS-EAEU FREIGHT TRAFFIC GROWTH POTENTIAL

Figure D.
Maximum Container
Traffic that Could
Be Additionally
Attracted by EAEU
Railway Networks

Source:
authors'
estimations

