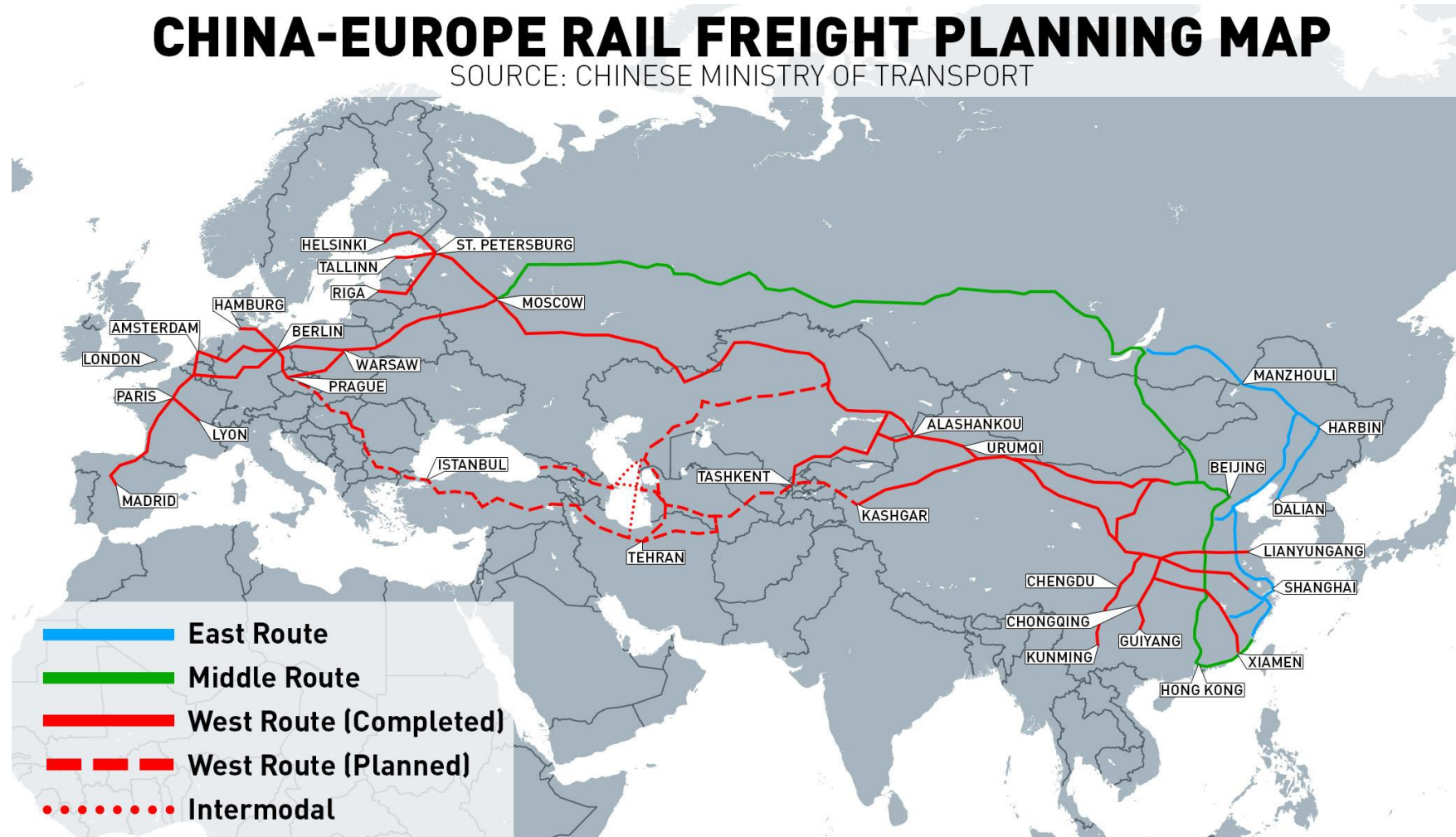




Europe - China freight trains: traffic volumes and infrastructure development

Péter Bucsky
University of Pécs
Doctoral School of Earth Sciences

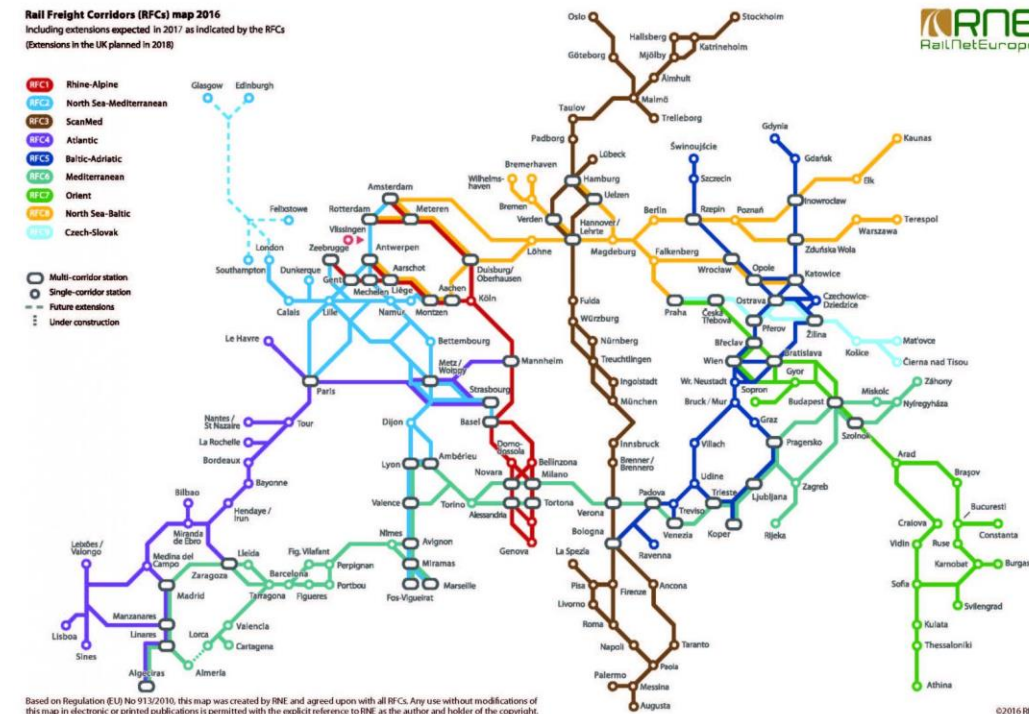
Eurasian Landbridge – numerous alternative routes



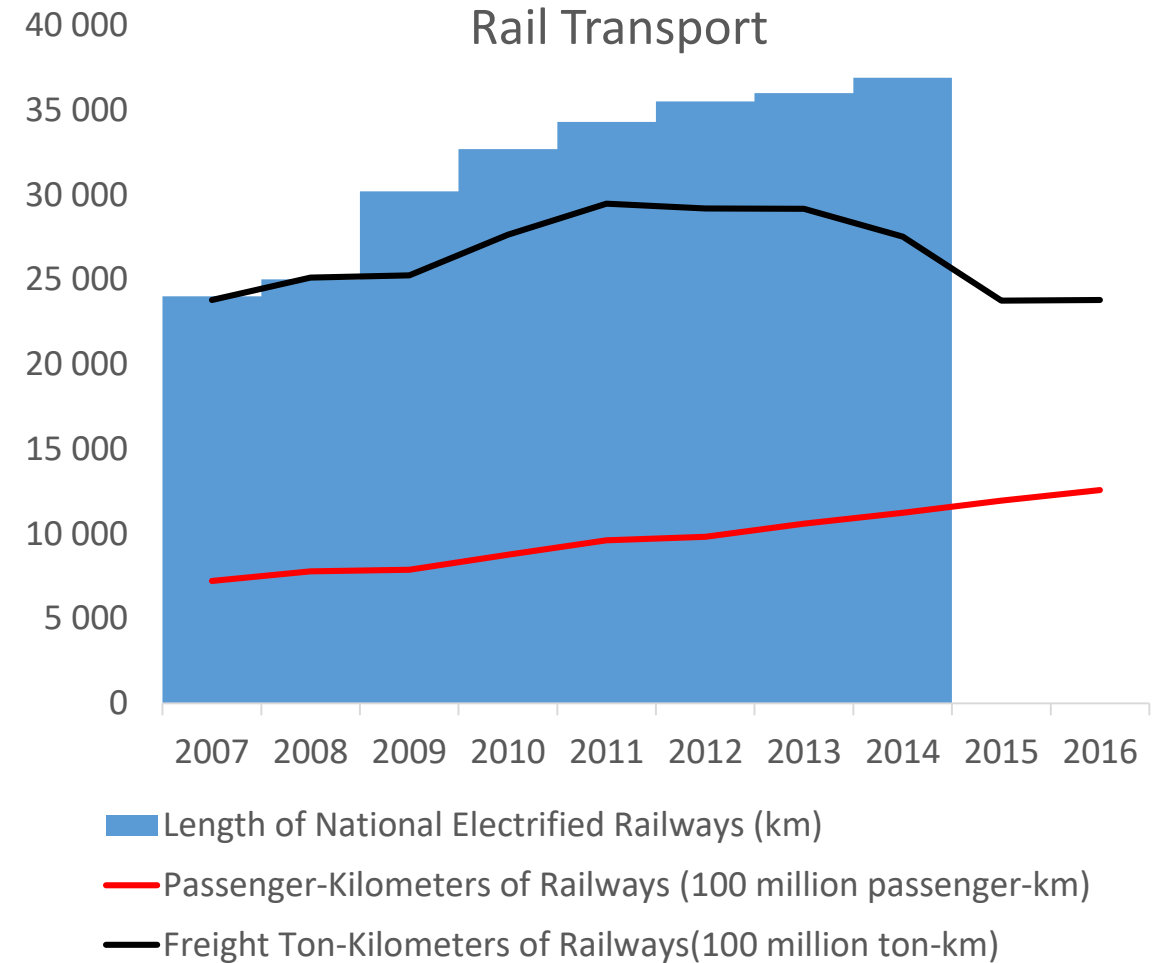
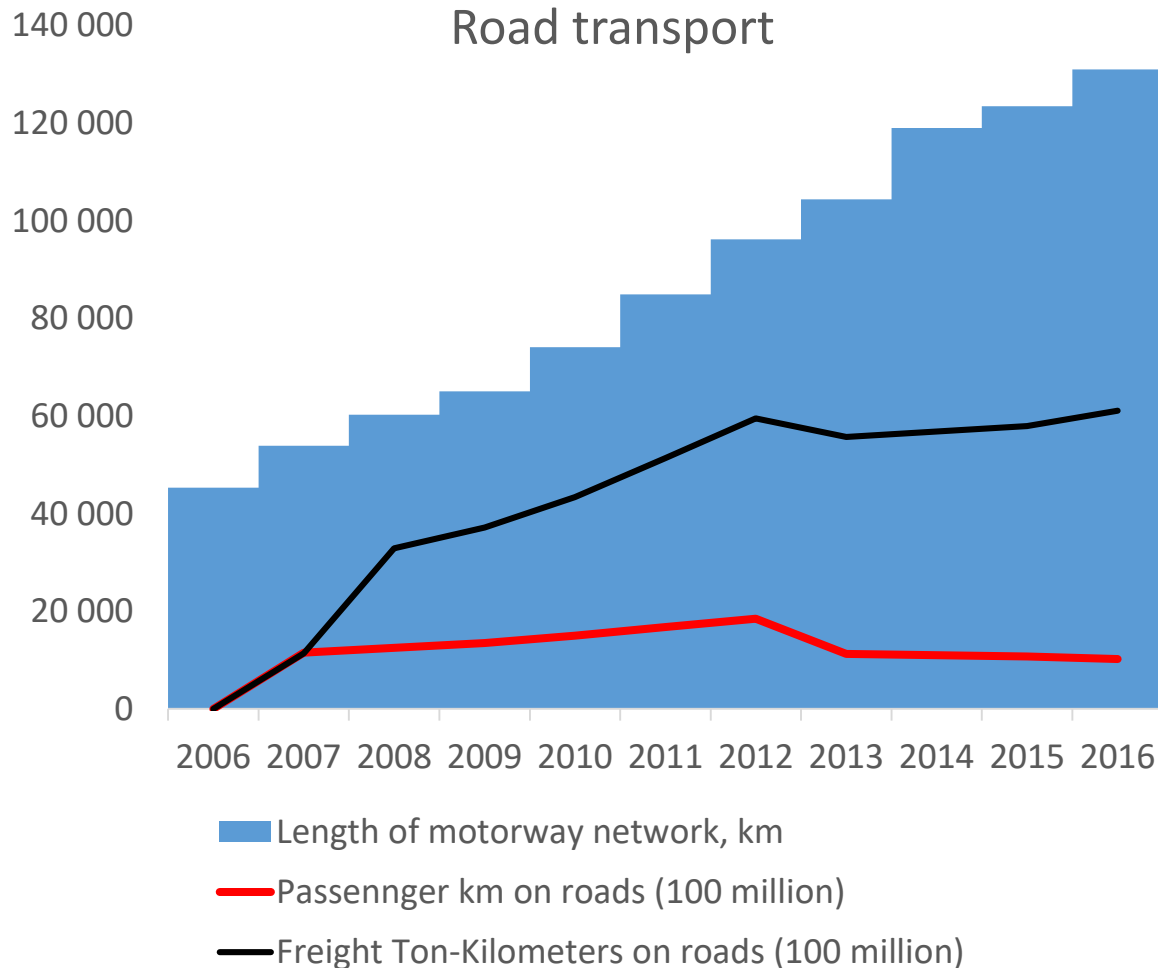
Source: <https://america.cgtn.com/2017/05/13/5000-china-europe-cargo-trains-expected-by-2020#>

Belt and Road Initiative

- Not an infrastructure development plan
- Rail freight is part of it, but there is no comprehensive strategy, institution
- In Europe there are rail freight corridors – it involves a lot of cooperation and a long time to try to make rail transport more competitive



Why is infrastructure development important for China?



As trade of China growth in Eurasia, transport routes will be more and more important

Trade with the 40 countries along the New Silk Road by partner (billion USD)					
	2008	2014	Change	Change %	Yearly average growth rate
France	120	106	-14	-11.7%	-1.8%
Germany	333	307	-26	-7.8%	-1.2%
Italy	103	94	-9	-8.7%	-1.3%
Netherlands	86	86	0	0.0%	0.0%
Poland	36	38	2	5.6%	0.8%
Rest of EU	476	475	-1	-0.2%	0.0%
China	278	528	250	89.9%	9.6%
Source: UN Comtrade database					

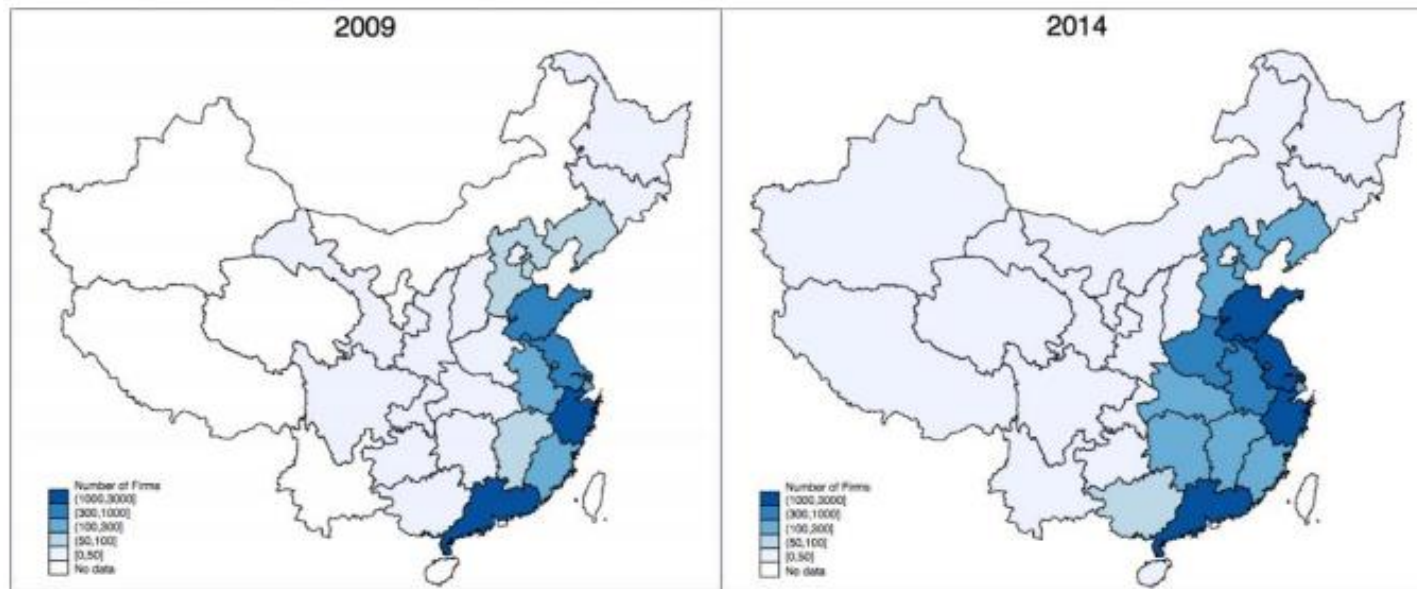
Financing of OBOR – projects in the value of 655 billion USD, transport infrastructure only 91

Stock of loans of financial institutions supporting the OBOR initiative, in million USD, 2016			
	Total value of loans	Value of loans outside China	Value of loans outside China for transport infrastructure in OBOR countries
New Development Bank	2 899	2 899	350
Silk Road Fund	13 900	13 900	0
Asian Infrastructure Investment Bank	3 709	3 709	1 271
The Export-Import Bank of China	377 118	377 118	28 370
China Development Bank	1 547 722	257 954	61 238
Total	1 945 348	655 580	91 229
Source: own calculation based on annual reports and websites of banks and funds			

Regional shift of production within China

- Inner-Chinese cities are further away from ports
- Closer to European – but even closer to Central-Asian, Iranian and Pakistani markets

The distribution of low-tech manufacturing in China



Source: Jun Hou, Stephen Gelb and Linda Calabrese:
The shift in manufacturing employment in china

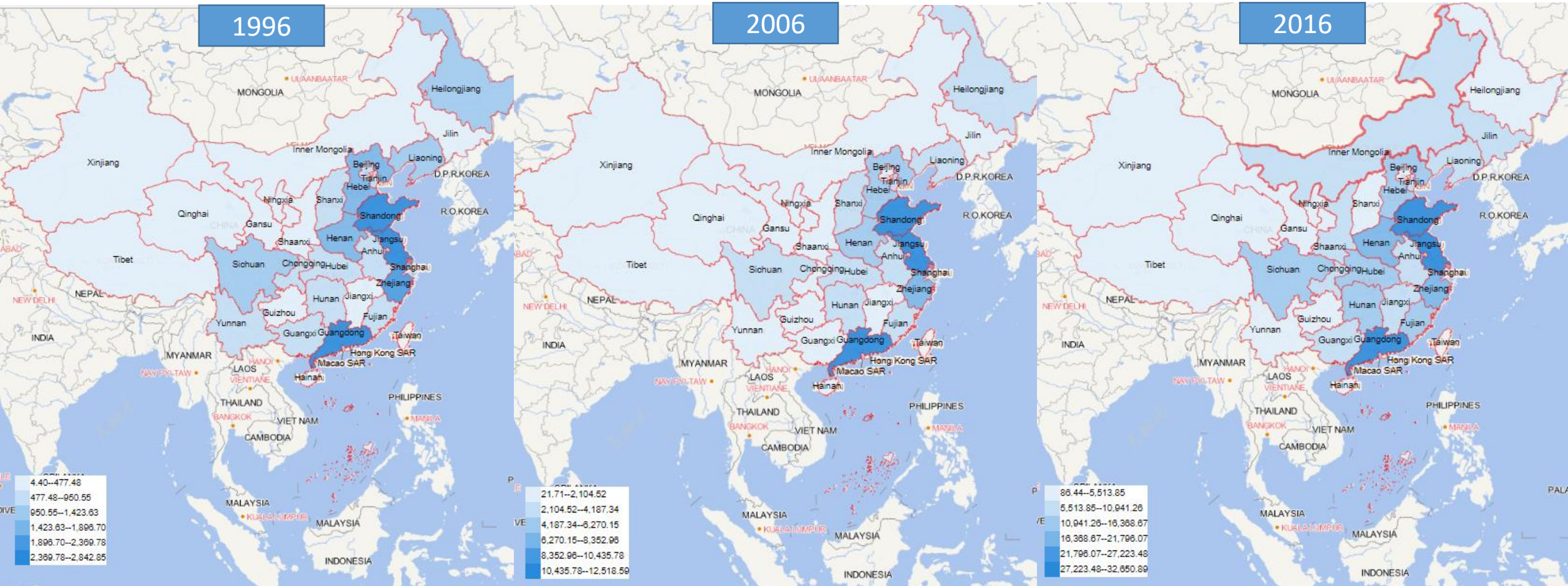
GDP growth rate: %, 2007-2016



Source: National Bureau of Statistics

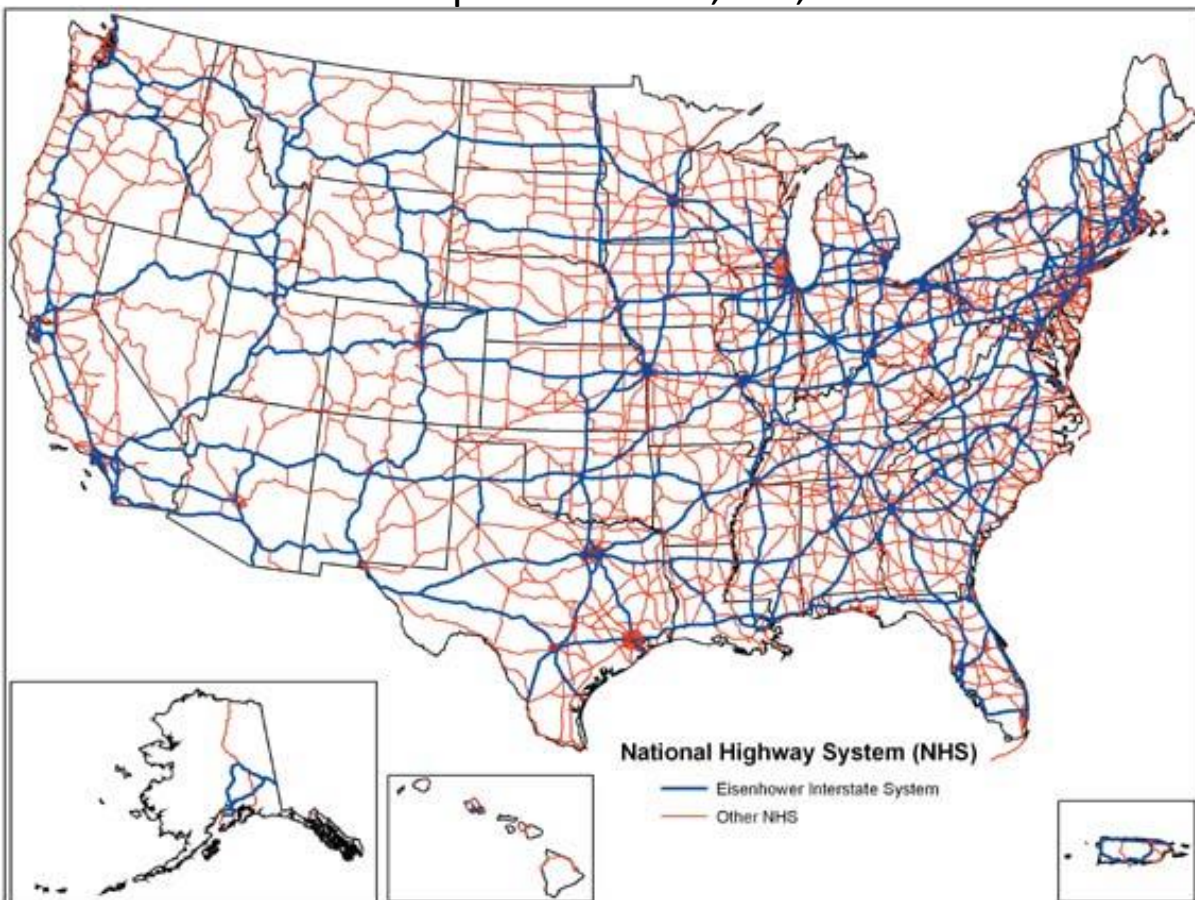


Value added by industry by region – still no major change



Has China's extensive internal infrastructure development reached its limits?

USA: 77,000 km autópálya
Area: 9,147,420 km²
Population: 326,766,748



China: 133,000 km motorway
Area: 9,388,211 km²
Population: 1,415,045,928



High speed rail: two third of all lines of the world are in China!

- The network is almost complete
- Till 2019 all major cities will be reached
- For China's railway industry growing exports are vital
- The continuation of lines to neighboring countries could follow – only Vietnam has high population density

Railway map of People's Republic of China

Colored lines showing CRH and other high speed rail services

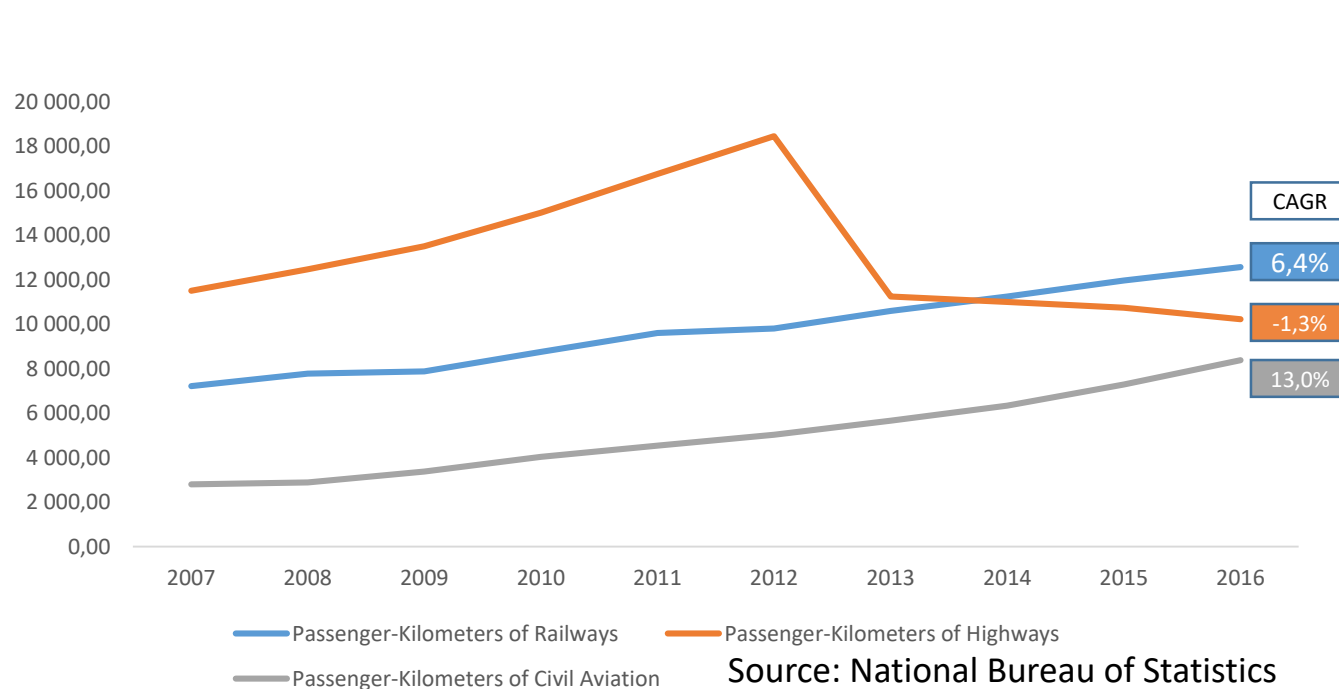
Last update: 2018-01-15



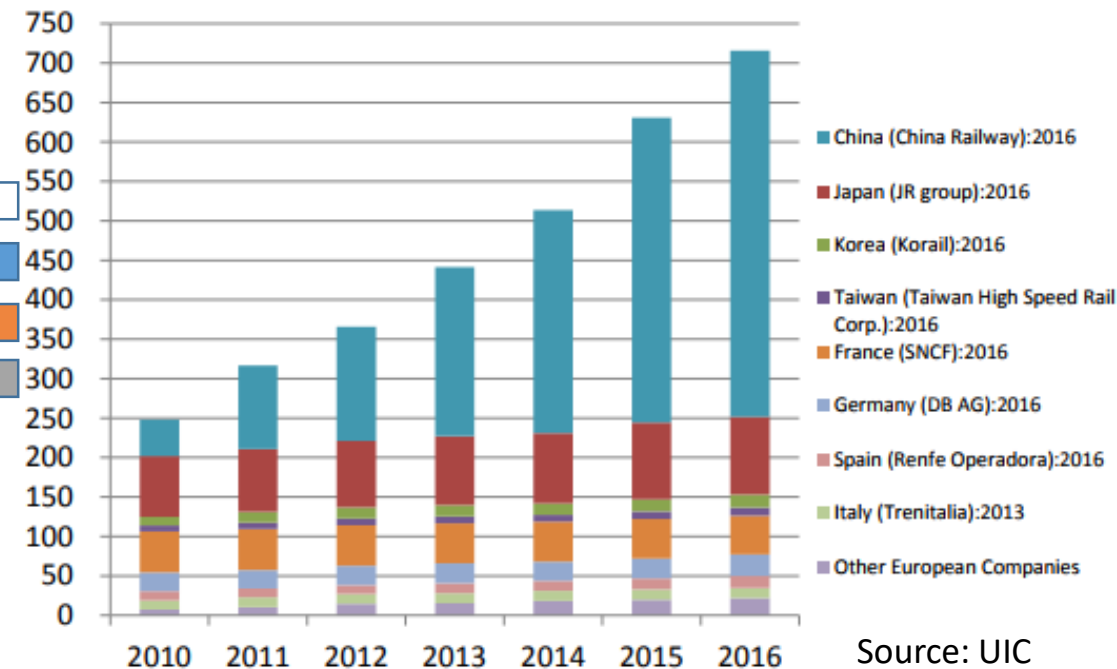
High speed rail – already very advanced

- From the total global ~41 thousand km high speed rail ~27 thousand km in China (65%)
- The growth in global passenger km for high speed almost solely came from China.

Development of passenger km in China (100 million)

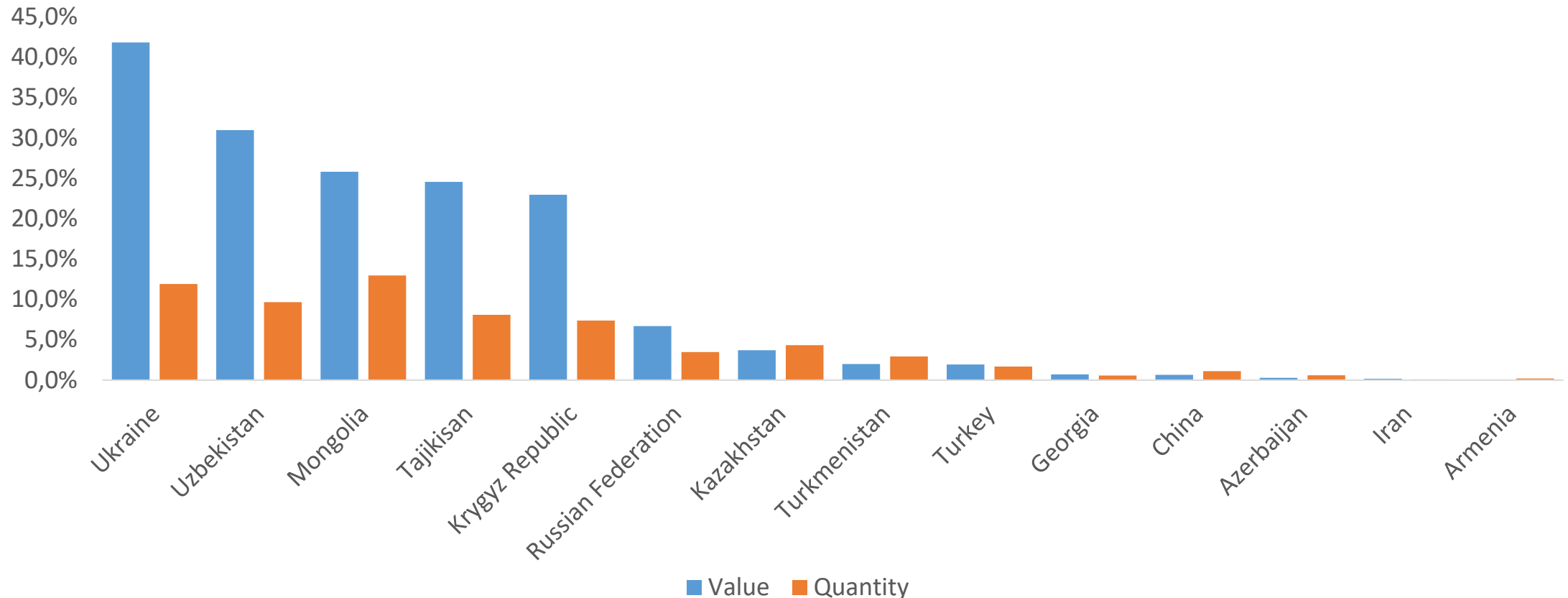


Billion passenger km



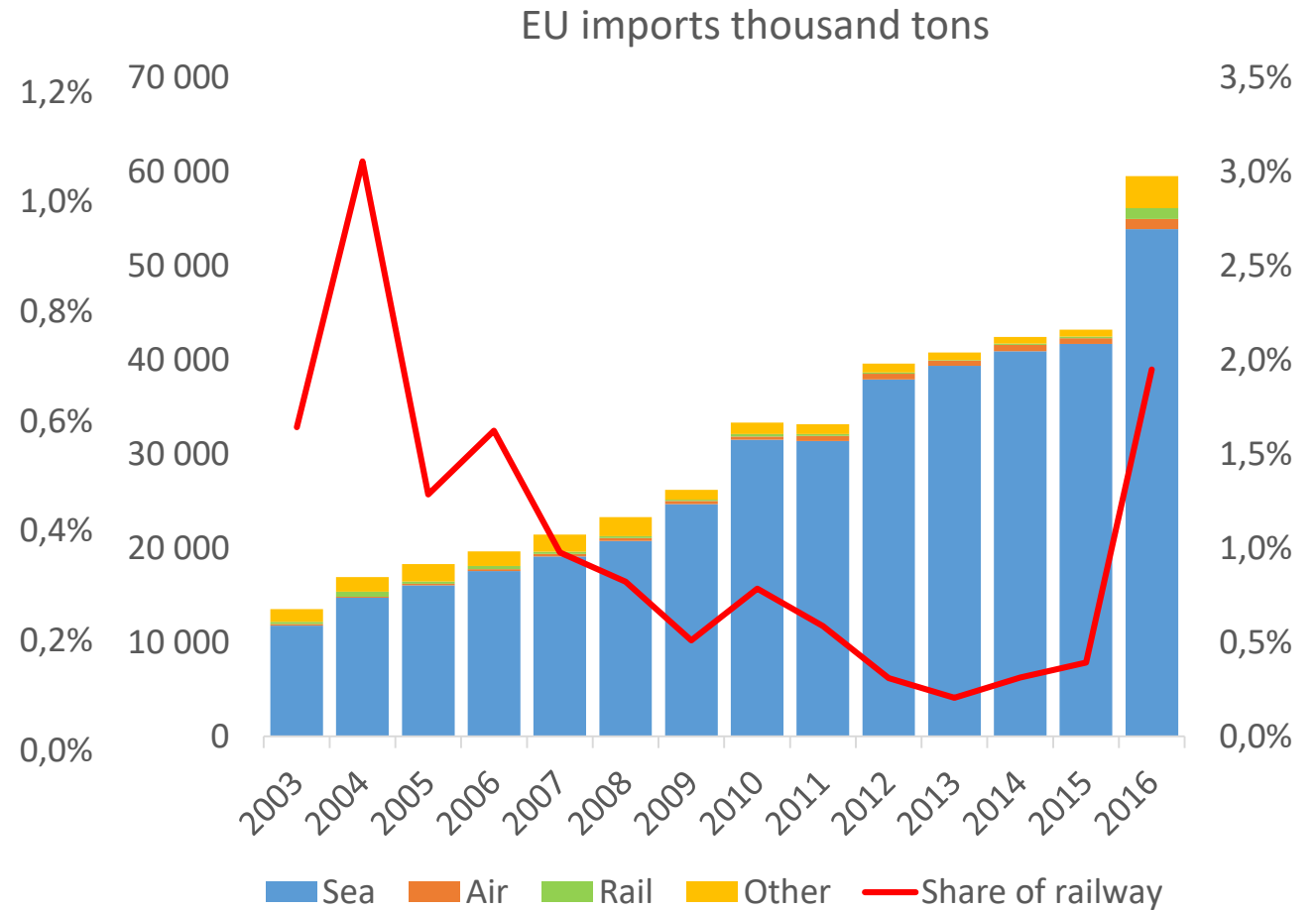
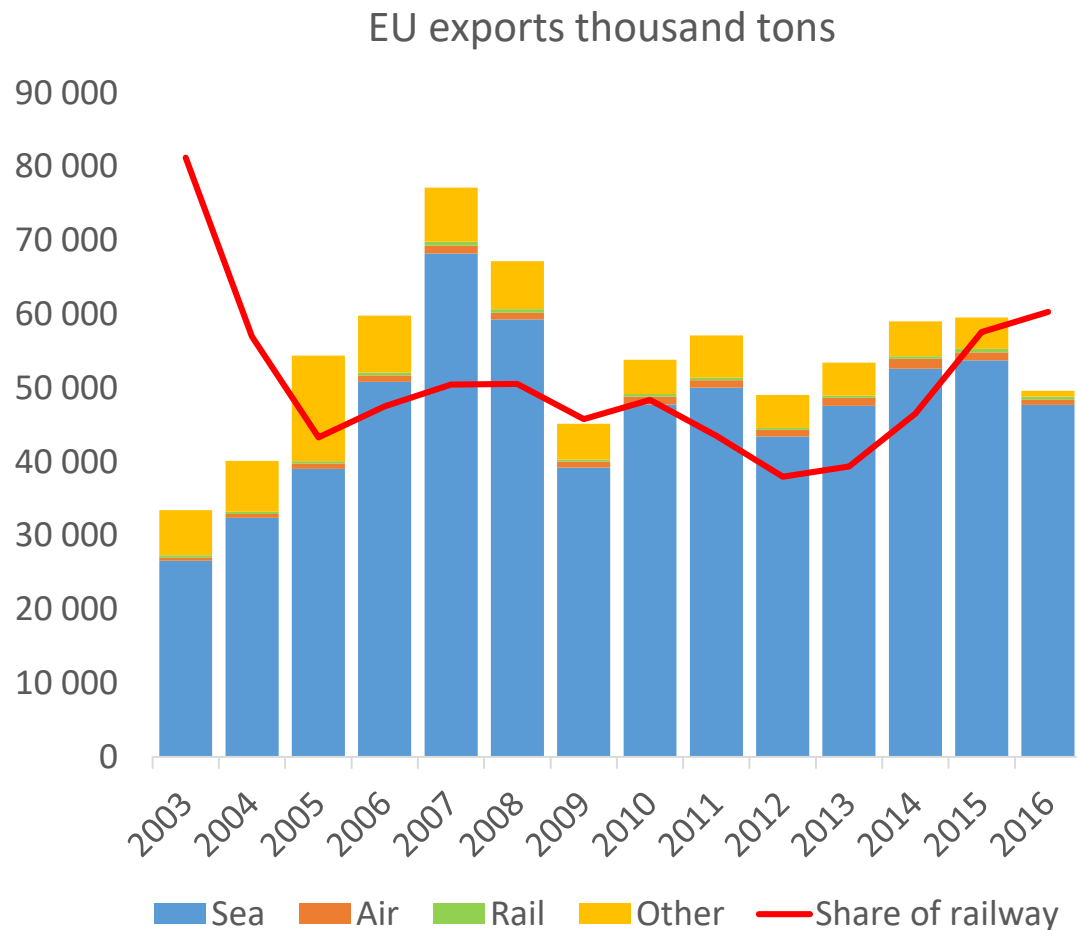
The importance of rail is declining with the growth of distance

The role of railway in trade of the EU with Eurasian countries



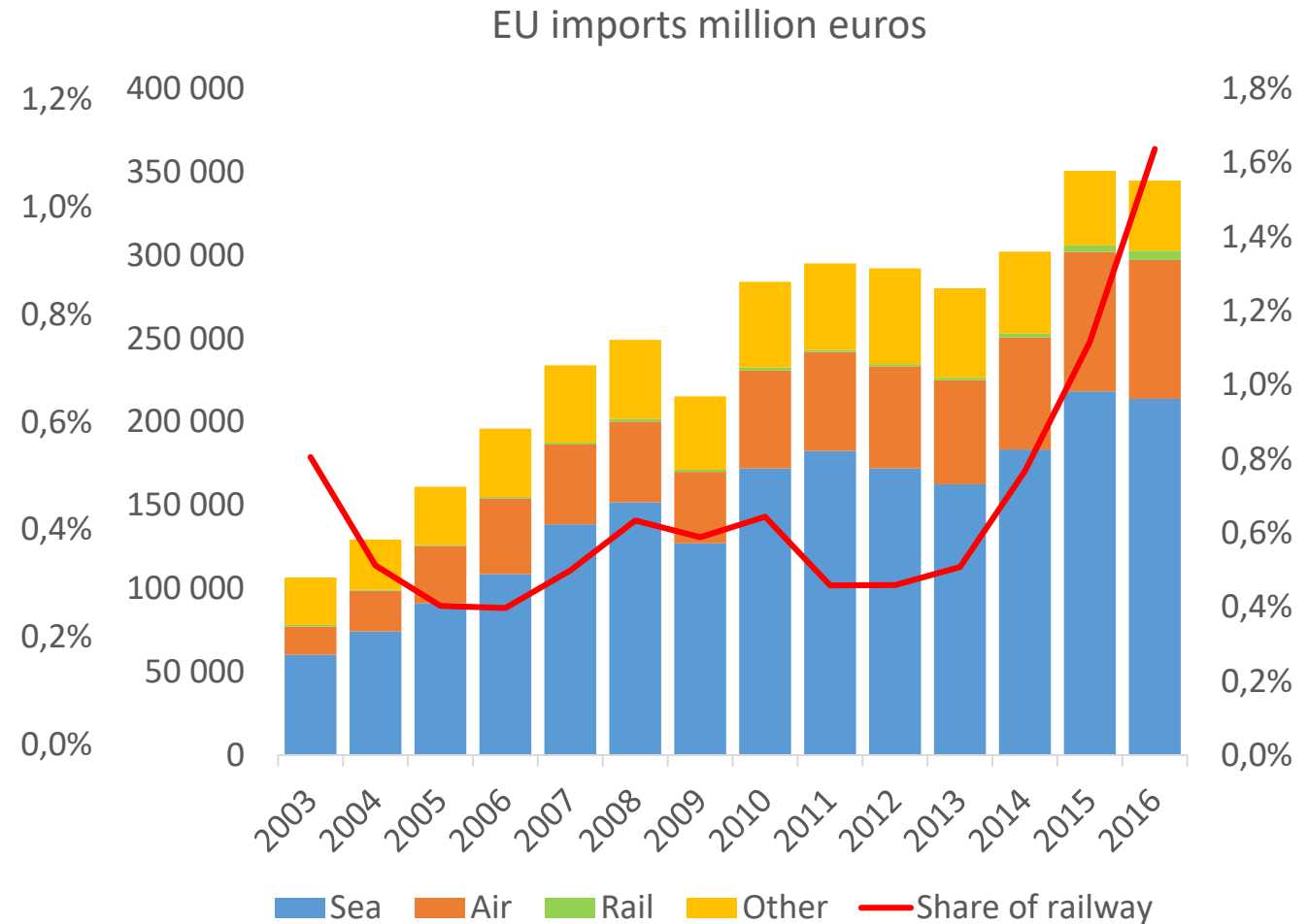
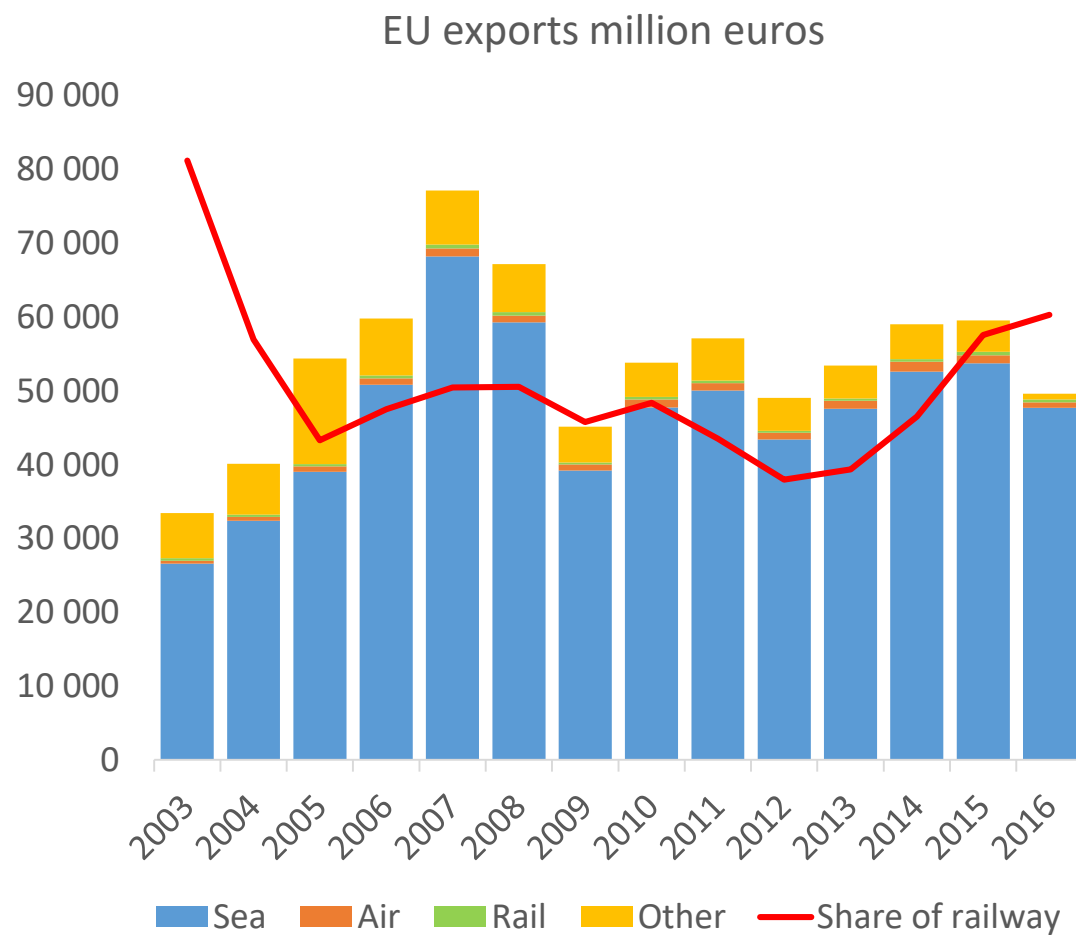
Source: European Union commercial trade database

How important railway became in rail transport with trade with China? 1) Quantity



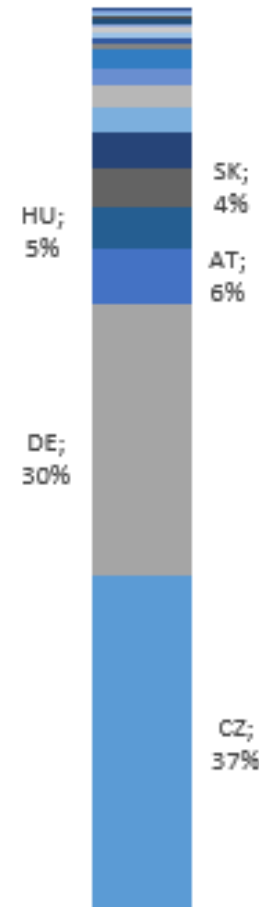
Source: European Union commercial trade database

How important railway became in rail transport with trade with China? 2) Value



Source: European Union commercial trade database

Within the EU rail transport with China is very concentrated

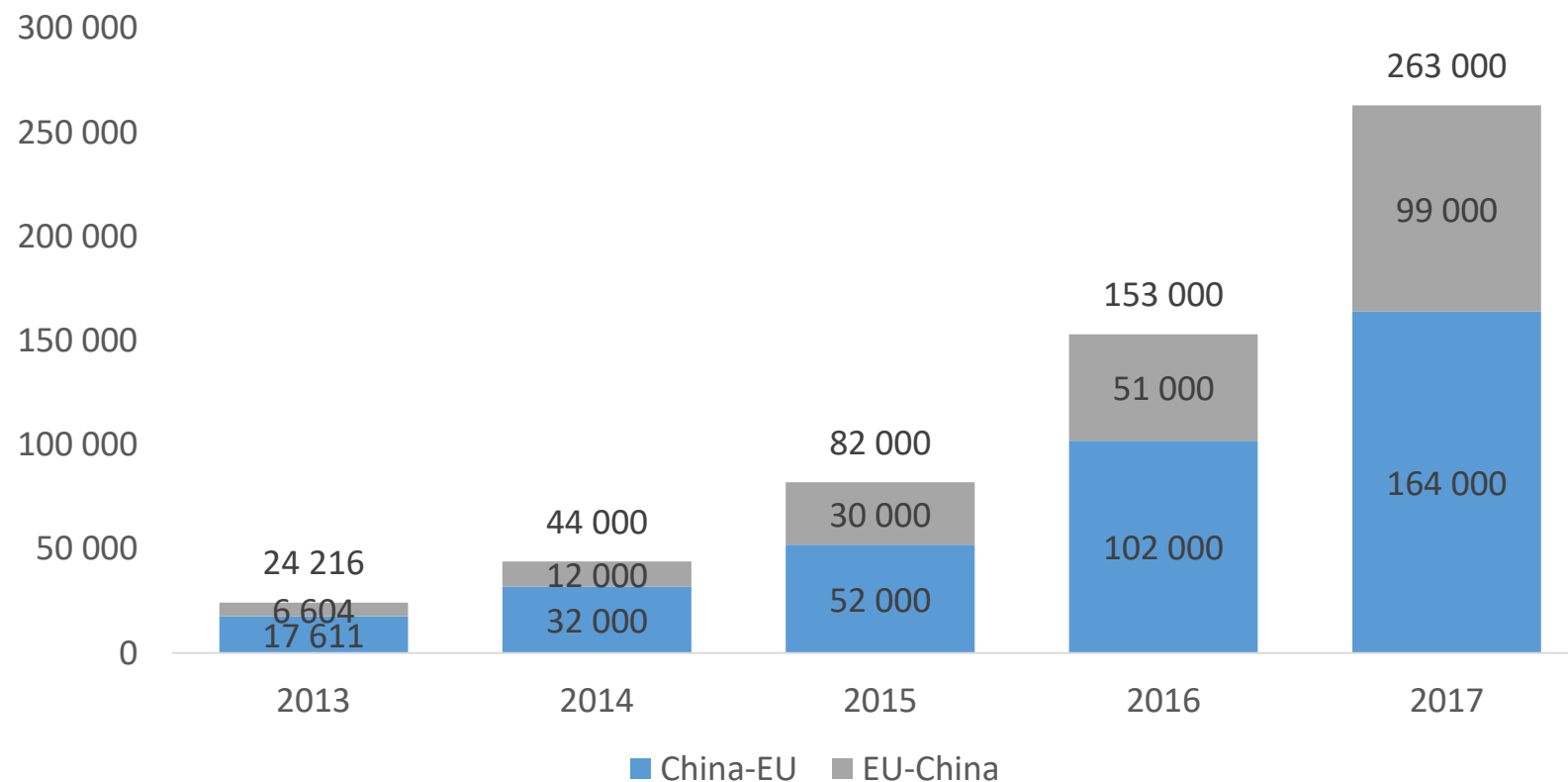


By country

By product category

Number of TEUs is growing, but still low

Containers transported through Russia between EU and China

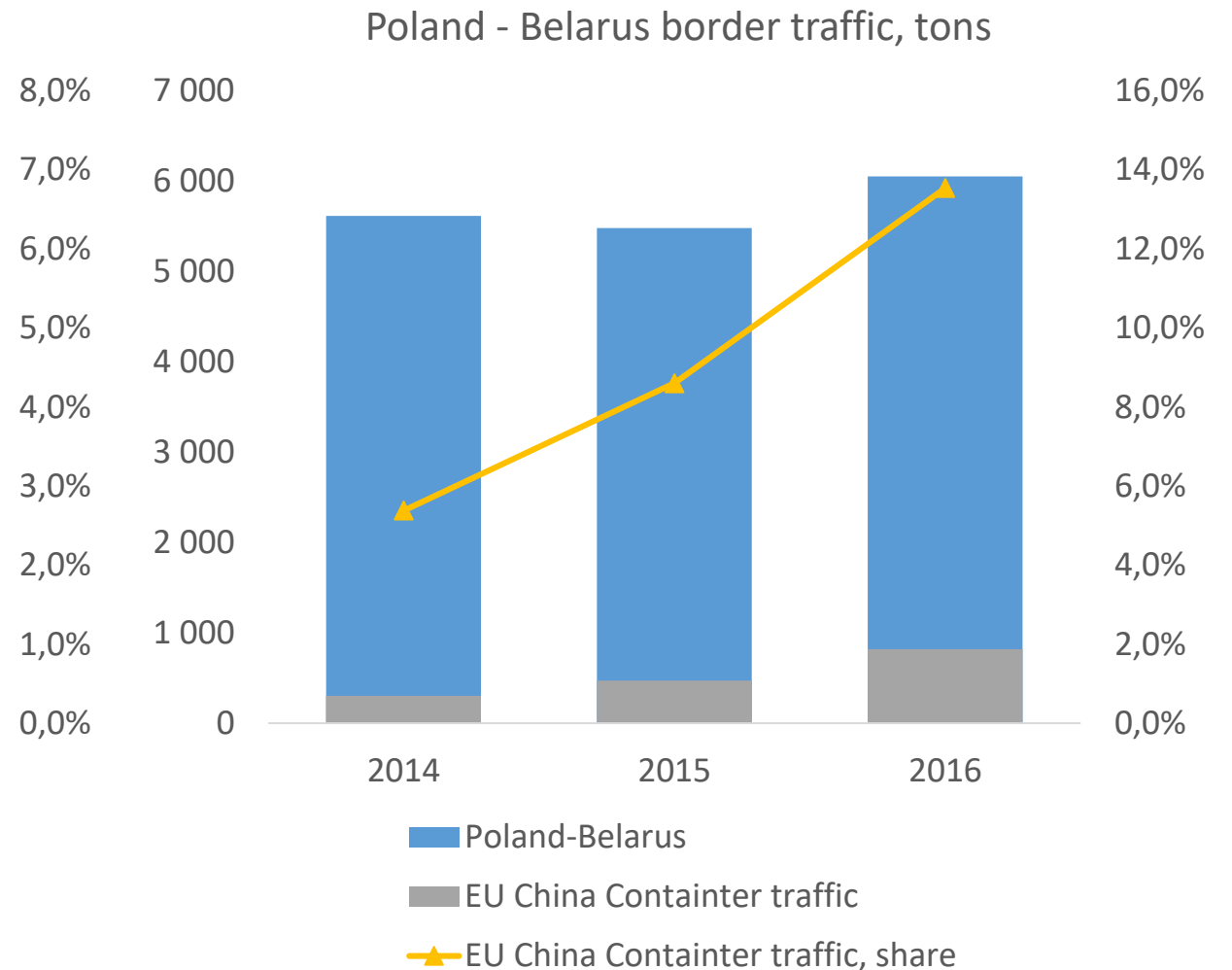
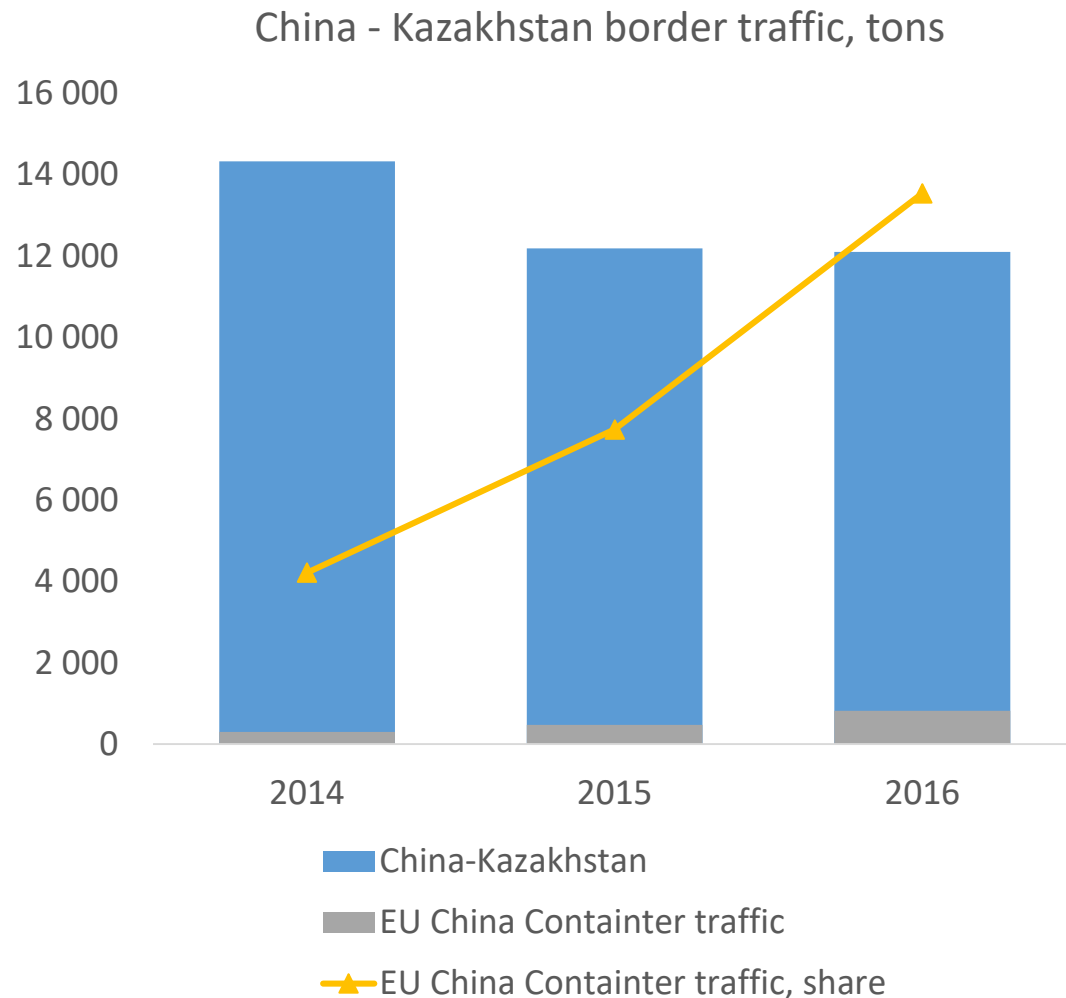


Capacity: 21.413 TEU –
all rail traffic is equal to 3 ginaliners traffic



Sanghai port: yearly 40.230.000 TEU –
containers by rail equals 2,4 days traffic of
the port

In cross-border traffic EU-China container traffic is still less important than conventional goods



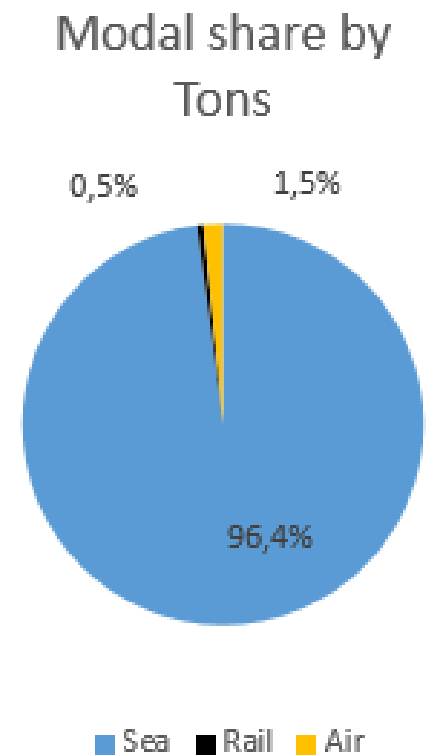
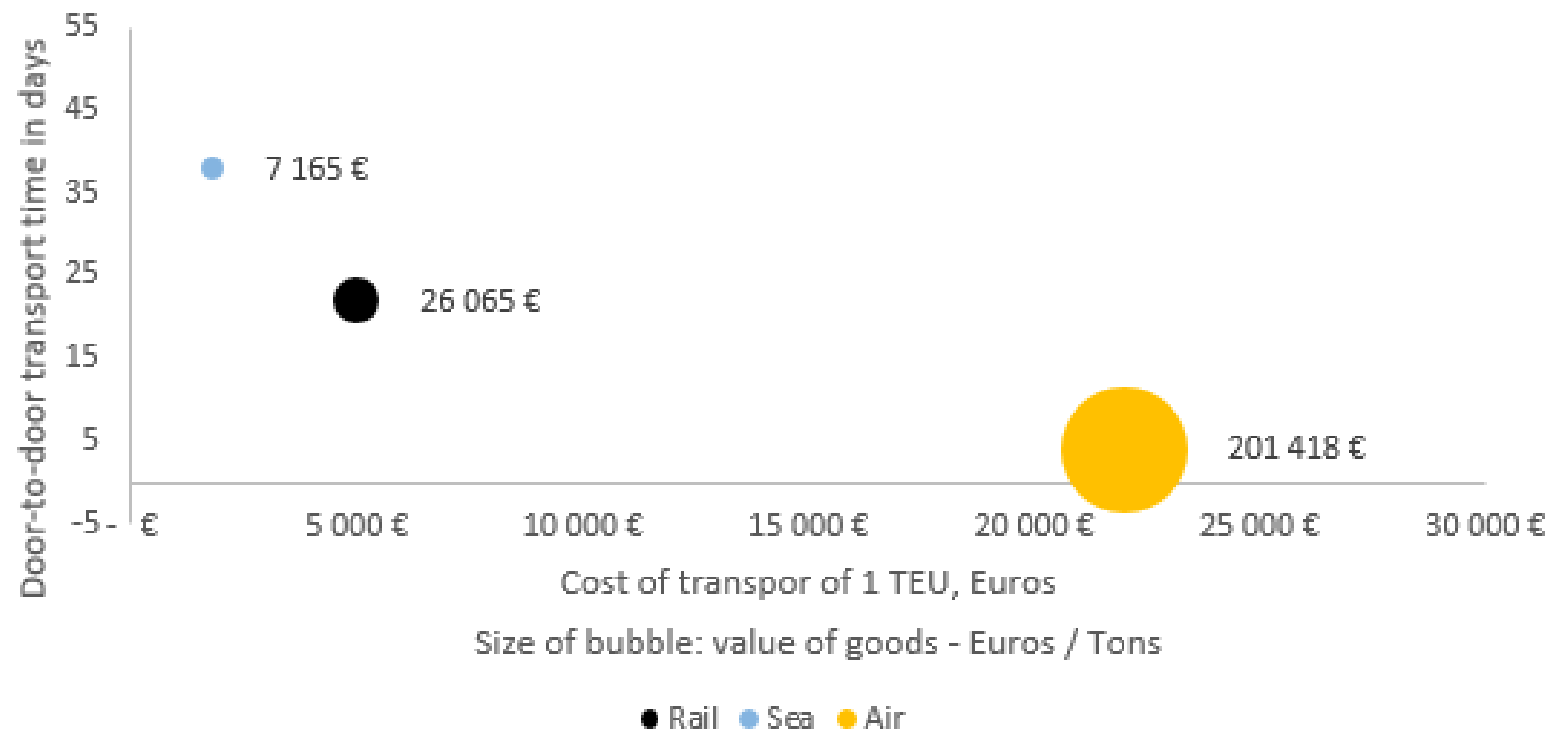
How many trains?

„The number of China-Europe freight train trips reached a new high of more than 3,000 last year, and is expected to reach 4,000 this year, according to China Railway Corporation.” 2018-01-20, Xinhua

http://www.xinhuanet.com/english/2018-01/20/c_136911059.htm

Own calculation from timetables: in 2014 ~350 trains both direction, in 2017 ~1800 trains both directions → **2,5 trains / day / direction**

Type of traded goods influences the mode of transport



Costs and subsidies

- Russia's Trancontainer:
„...cancellation of, or reductions in the government support may have an adverse effect on rail container transportation on relevant routes.”
- From the 5-6 thousand euros / container costs 1-2 thousand is provided by local governments in China, 20-30% of total costs!
- Is it worth it for the central government and the provinces?

Thank you for your attention!
Questions?