Reviving the Silk Road: Evidence from the Sino-Russian Trade

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The Belt and Road Initiative

- The Silk Road Economic Belt and the 21st-century Maritime Silk Road (B&R) initiative was unveiled by the Chinese authorities in 2013.
- One of the objectives is to improve trade and commercial links between China and Eurasian countries.
- Trains travel faster than ships, so new roads can boost trade.
- This infrastructure is used in Sino-Russian trade.

The Objective of the Paper

- Since the late 19th century Russia has invested substantial amount of resources to develop infrastructure linking its European part to the Far East (Trans-Siberian Railway).
- Study the patterns of Sino-Russian trade using transaction-level data to draw implications for possible trade in the presence of the New Silk Road.
  - The road, air and sea distance from China to Moscow will be similar to that of some European countries in the presence of new infrastructure.
  - The choice of the transportation mode depending on good's characteristics.
  - The role of factors other than physical infrastructure.

Data

- This paper uses transaction-level customs data from Russia (2014).
- The dataset provides information on value, wight.
- The border crossing points and destination city.
- The mode of transportation (can be train, road, waterway, airfreight).

Shipping Options
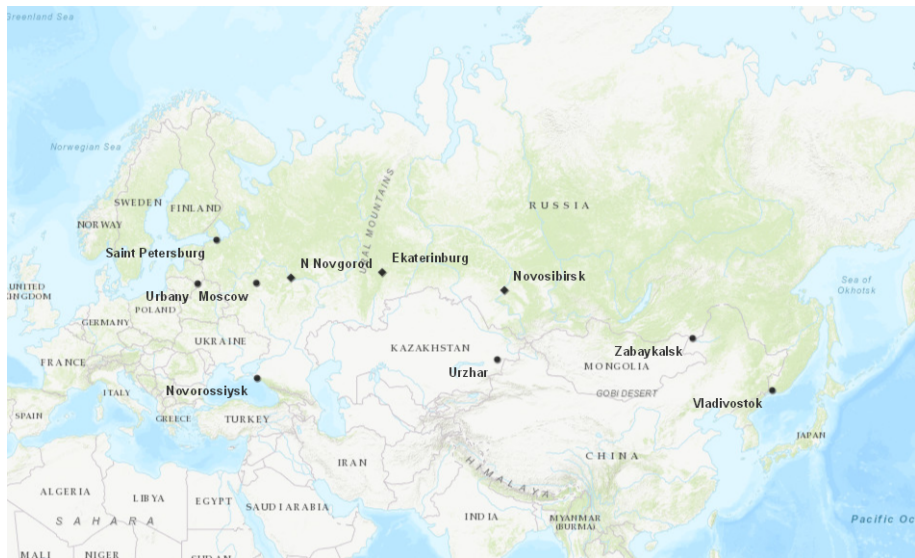
Shipping Options

- *Moscow.* Direct air shipments.
- *Saint Petersburg.* Sea shipments to Saint Petersburg from where goods travel by road to Moscow.
- *European ports.* An alternative to Saint Petersburg because of limited port capacity.
- *Black Sea.* Sea shipments to the Black Sea ports from where goods travel by road to Moscow.
- *Kazakhstan.* Road shipments through the territory of Kazakhstan.
- *Zabaykalsk.* Rail shipments through Zabaykalsk.
- *Vladivostok.* Rail shipments to Moscow by Trans-Siberian Railway .

Reporting Issues

- For some shipments firms indicate the border crossing point as the final destination.
- Moscow can a border crossing point only for air shipments.
- In the data air shipments will be overrepresented relative to others.
- Misreporting does not give any advantages, so there are no incentives to misreport intentionally.
- What about land vs rail?

Exports by Routes to Moscow

	Value %	Weight %	Value/Weight	Mode
Moscow	71.39	7.08	9765.73	Airfreight
St Petersburg	10.82	21.94	477.59	Waterway
Europe	10.64	39.36	261.85	Waterway
Black Sea	1.14	3.32	331.55	Waterway
Kazakhstan	0.69	3.38	198.41	Truck
Zabaykalsk	2.56	8.70	285.30	Train
Vladivostok	2.74	16.22	163.62	Waterway

Main Patterns

- Air shipments account for 70 percent of total shipments measured by value (overreporting).
- Shipments by sea to the North-West are about 20 percent.
- Rail shipments though Zabaykalsk and Vladivostok are also non-negligible, and they include relatively heavier goods.
- Goods shipped by air are significantly more expensive per kg compared with other categories.
- There is no big difference between sea shipments and road/train shipments in terms of value/weight.
  - It is more likely that the presence of new roads will create more competition between see and road shipments.

Why are Rail Shipments Low?

- Travel time from Vladivostok to Moscow by train takes two weeks.
- Two weeks is much faster compared with the time that takes to ship a container to European ports from China.
- Security concerns also affect the choice of the transportation mode.
- In 2009 the Russian Government created a special state enterprise designated to prevent theft from railways.
- Clark et al. (2016) show that an increase in supply chain uncertainty has negative impact on imports.

Estimating Institutional Costs

- Hummels and Schaur (2013) estimate that an additional day in transit is equivalent to an advalorem tariff of 0.6 to 2.1 percent.
- Sea shipments take about 18 additional days compared with rail cargo.
- In the data transportation costs do not differ much.
- This implies that there is 10 percent risk of theft/other problems.

West vs East by Good Category

HS code	Description	Share of Total %	West %	East %
01-24	Food	0.43	91.25	8.75
25-27	Minerals	0.00	92.18	7.82
28-40	Chemicals	6.12	78.53	21.47
41-43	Leather	2.16	77.52	22.48
44-49	Wood Products	2.02	49.69	50.31
50-67	Textiles & Footwear	39.30	85.44	14.56
68-71	Stones	1.44	50.44	49.56
72-83	Metals	1.30	53.31	46.69
84-85	Machinery & Electrical	29.54	73.05	26.95
86-89	Transportation	1.34	70.35	29.65
90-97	Other	16.35	85.56	14.44
	Total	100.00	79.39	20.61

Exports by Routes to Central Russia

	Novosibirsk		Ekaterinburg		N Novgorod	
	Value %	Weight%	Value %	Weight %	Value %	Weight %
Air	17.27	6.45	22.24	5.07	30.19	0.09
St Petersburg	0.00	0.00	0.09	0.00	10.59	13.34
Europe	0.04	0.04	1.10	0.97	50.19	72.99
Black Sea	0.00	0.00	0.00	0.00	0.00	0.00
Kazakhstan	12.55	10.13	1.16	3.61	0.00	0.00
Zabaykalsk	45.33	71.67	34.56	68.91	9.03	12.72
Vladivostok	24.13	11.72	40.84	21.44	0.00	0.00

Main Patterns

- Eastern cities import only by land from the east.
- After some point (around Nizhny Novgorod) western ports dominate and the situation becomes similar to Moscow.

Exports by Routes to Russia

	Value %	Weight %	Value/ Weight
Air	11.47	0.26	5064.60
St Petersburg	23.81	22.56	122.29
Europe	17.78	9.41	218.98
Black Sea	10.33	9.95	120.28
Kaliningrad	0.83	0.47	204.03
Kazakhstan	2.87	3.59	92.65
North	0.21	2.54	9.69
Zabaykalsk	11.73	17.69	76.87
Vladivostok	20.94	33.51	72.42

Main Patterns

- The share of air shipments in total exports is rather low.
- The share of shipments through Saint Petersburg, EU and Black Sea ports account for 52 percent.
- The share for Vladivostok, Kazakhstan and Zabaykalsk is about 35 percent.
- What does this tell about shipments to Moscow?
    - Eastern regions account for at least 35 percent of total GDP.
    - Assuming that imports are proportional to GDP, most land imports should be consumed locally.
    - Results for Moscow are likely to reflect true volumes.

Implications - Europe

- Existing land roads are not used very intensively by Chinese exporters.
- Institutional and organizational issues play and important role, in addition to physical infrastructure.
- According to Doing Business Report all countries along the proposed roads are rank below Russian on the trading across borders measure.
- When exporting to Russia by land, Chinese goods need to cross only one border, in the case of the proposed roads, multiple borders should be crossed.

Implications - Asia

- Eastern cities use rail intensively.
    - Could be good news for Asian regional trade.
- But these cities are vey far from western ports and have no alternatives.
- Pakistan, Iran, Turkey have access to sea.
    - Vladivostok may be a more appropriate comparison group.
    - Despite having a border it predominantly imports by sea.
- This rises the question of the commercial viability of the project and the ability of developing countries to repay the debts (Hurley et al. 2018).
- Already evidence that Chinese built railways are not utilized (The Economist, 2018).

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