



Group of Experts on Euro-Asian Transport Links

UNECE Office in Geneva

February 4 – 5, 2014

**New Comparative Advantage:
Transcontinental Transport Logistics
On Euro-Asian Perspectives**

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January 28, 2014

Abstract

Our recent study of intercontinental transport and logistics reveals that:

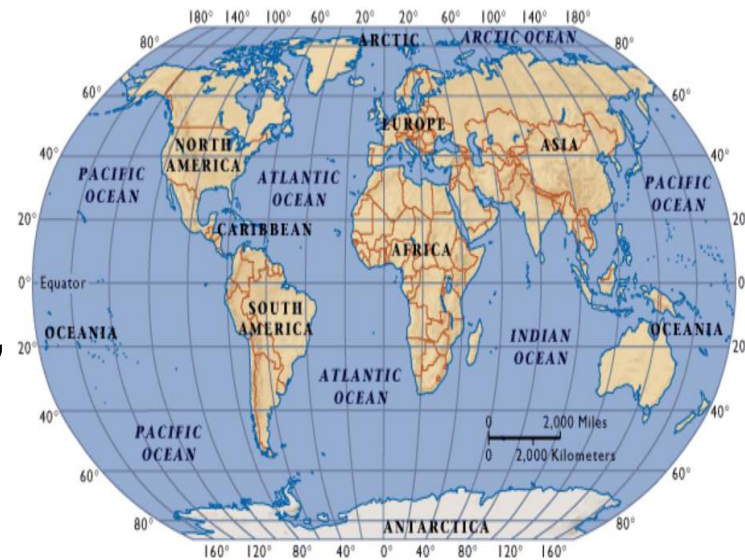
- 1) Comparative advantage: Production versus Transaction
 - Containerized international trade and logistics (until 2008 crisis): North-South outsourcing
- 2) Transocean versus Transcontinental trade and logistics (since 2008): Selective *overseas* partnerships of North-”Further South” (e.g., TPP,) and “back to North” (e.g., TTIP, PSA)
- 3) New Comparative Advantages: “Transcontinental Urbanization” along Europe-Asia corridors and trade supply chains (e.g., urban development in Western China).

Comparative Advantages: Containerized Trade and Logistics

- ❑ Trade: Productivity Advantage
 - ✓ Labor productivity (Ricardo : Imbalance trade between developed v.s. emerging economies)
 - ✓ Supply productivity (New Trade Theories, 1990): Incomplete contract between North and South, New economic geography
 - ✓ Energy productivity (New comparative advantage theory, 2008): Back to USA

- ❑ Logistics: Transactional Advantage

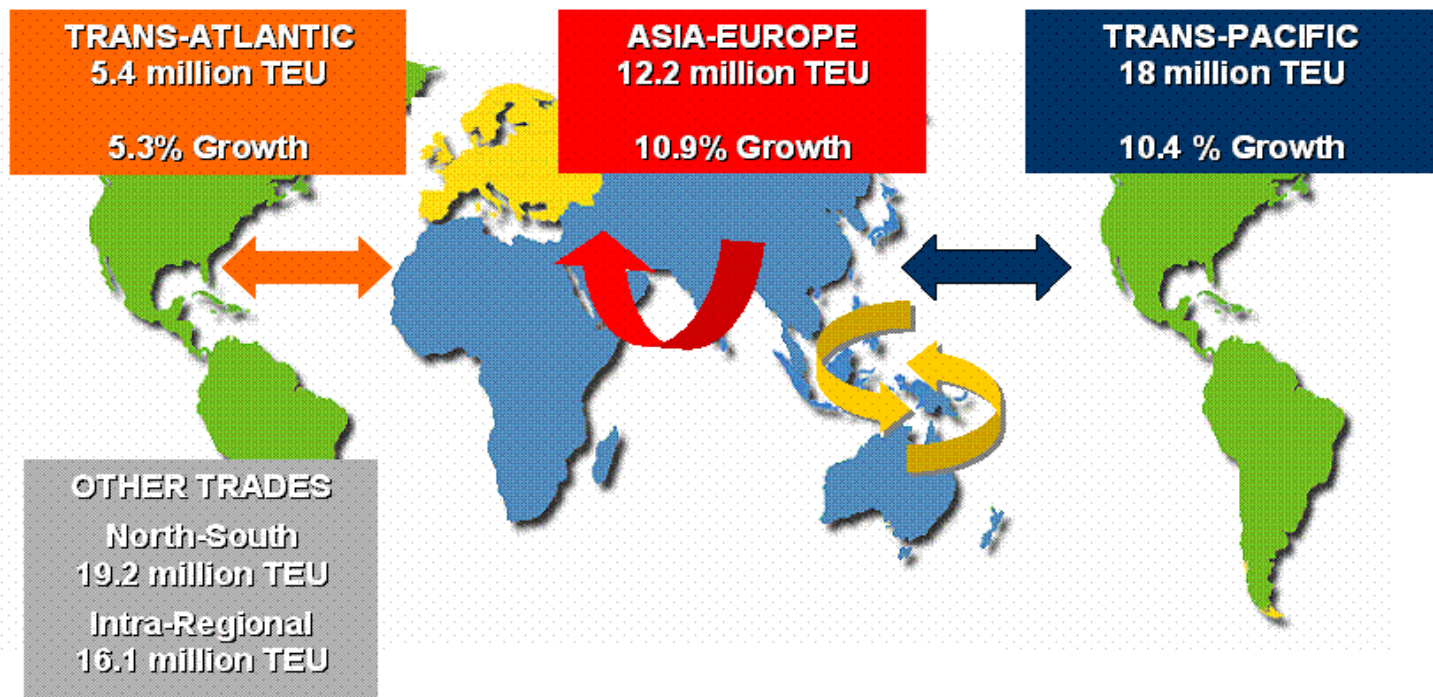
- ✓ Transaction cost minimization
- ✓ Container + Internet: Liner shipping, intermodal
- ✓ Port focal: Logistics and Trade
- ✓ Global outsourcing: World's Factory, port clustering



Logistics

- ❑ Transocean Partnerships: Transatlantic Trade and Investment Partnership (TTIP) and Trans-Pacific Partnership (TPP), with further South?

World Container Trade Flow 2005



Euro-Asian Transport Links



Disadvantages:

Trans-Siberian Railway

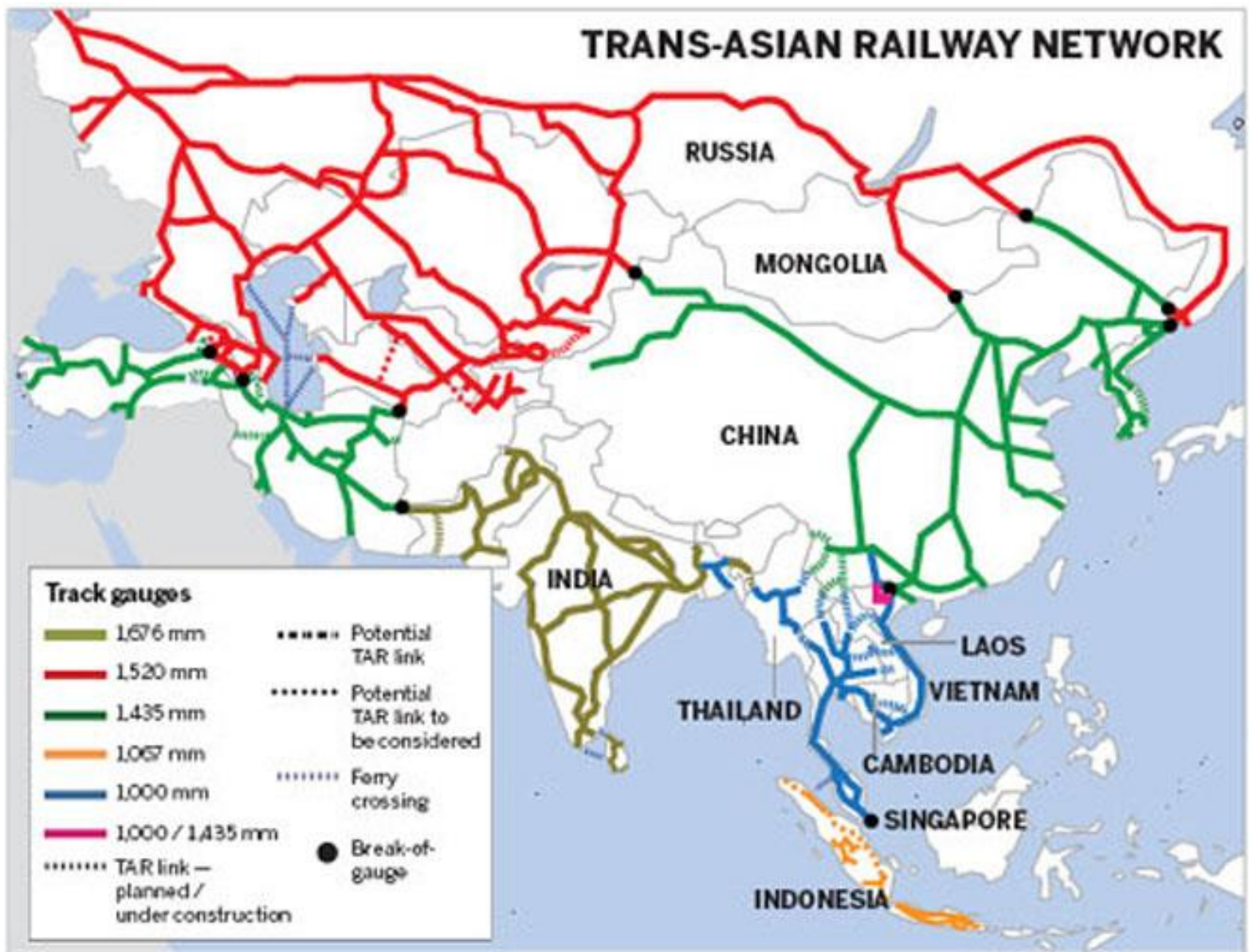
The Case of Japan and Korea



Europe-Asia Transport Network



Source: DHL, rail services china/europe,
[http://www.joc.com/sites/default/files/u48783/pdf/tpm_asia_2012/Ambr
ose_Linn.pdf](http://www.joc.com/sites/default/files/u48783/pdf/tpm_asia_2012/Ambr%20ose_Linn.pdf)



Source: United Nations Bridget O'Donnell / China Daily

Chengdu-Europe Fast Rail: 9826 km



Central Asia Gas Pipe Lines



Source: WENWEIPO (文汇报),

<http://trans.wenweipo.com/gb/paper.wenweipo.com/2008/07/03/CH0807030006.htm>

European-Central Asia Pipelines

Projected routes of Nord Stream, Nabucco and South Stream pipelines



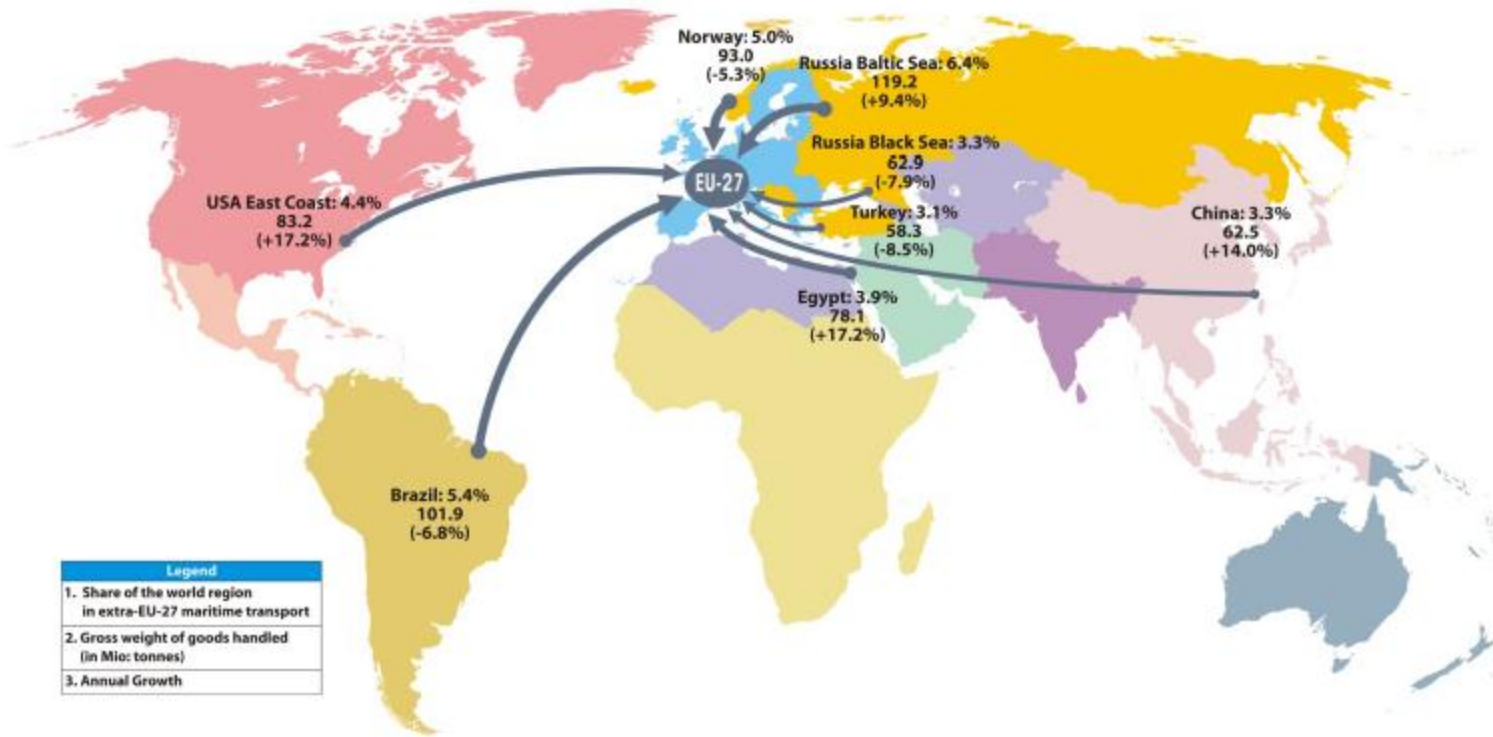
Source: BBC News, <http://www.bbc.co.uk/news/world-europe-12425614>

Findings (1): Port Focal and Transcontinental

Reduced cost of transoceanic trade (by

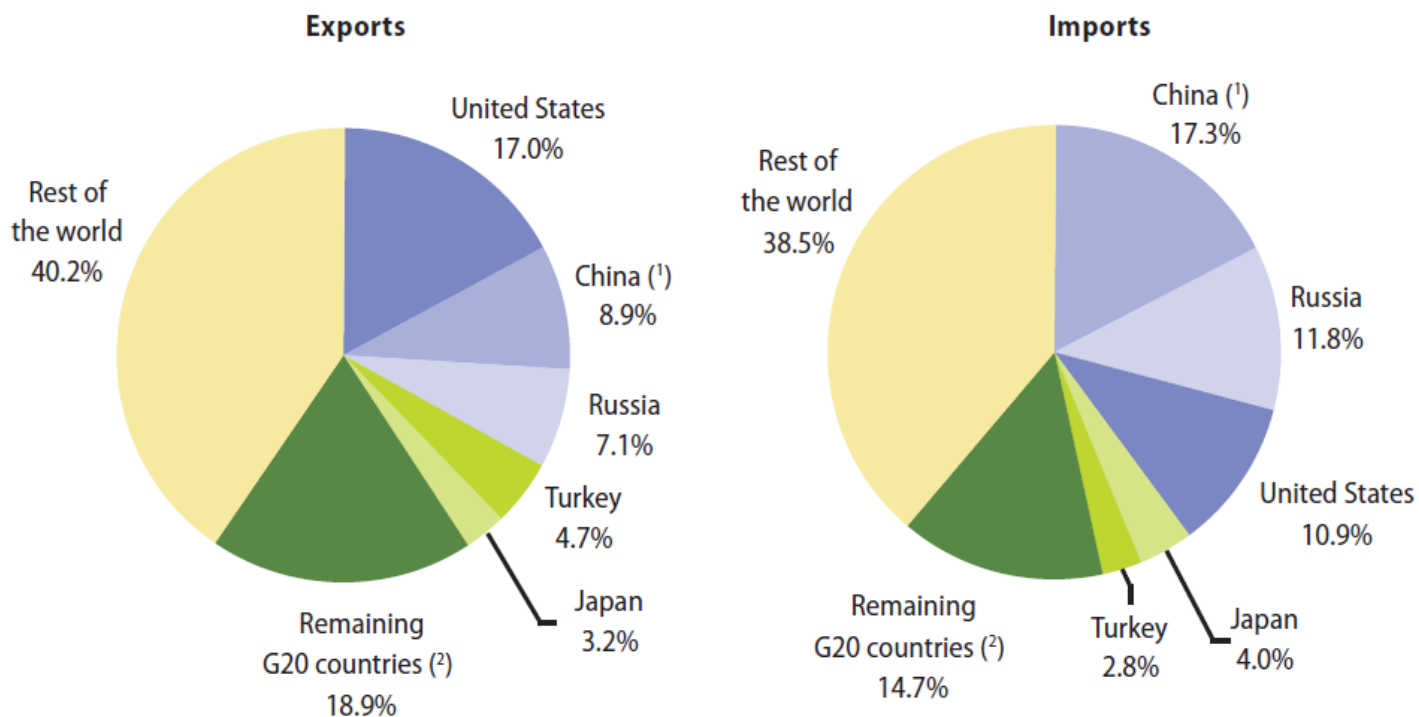


Extra-EU-27 partner region in 2011 by gross weight of goods handled by maritime transport



Source: Eurostat, *Continued recovery in volume of goods handled in EU ports*
Maritime ports freight and passenger statistics 2011

Main G20 trading partners for EU-27 exports and imports of goods, 2011 (% share of extra EU27 flows)



(1) Excluding Hong Kong.

(2) Including Hong Kong.

Source: Eurostat, *The EU in the World, International Trade*

Major Goods Exported from China to EU in 2011

(billion US\$)

Classes	Goods	Volume	(%)
85	Electrical machinery and equipment and parts thereof; television image and sound recorders and reproducers, and parts and accessories of such articles	75.03	24.1
84	Nuclear reactors; boilers, machinery and mechanical appliances; parts thereof	69.93	22.5
62	Articles of apparel and clothing accessories, not knitted or crocheted	16.52	5.3
61	Articles of apparel and clothing accessories, knitted or crocheted	16.36	5.3
94	Furniture; bedding; lamps and lighting fittings; illuminated nameplates and the like;	13.01	4.2
89	Ship, boats and floating structures	9.99	3.2
90	Optical, photographic, cinematographic, measuring, medical or surgical instruments and apparatus; parts and accessories thereof	8.59	2.8
95	Toys, games and sports requisites; parts and accessories thereof	7.62	2.4
73	Articles of iron or steel	6.37	2.0

Source: China Customs Statistics 《中国海关统计》

Major Goods Exported from EU to China in 2011

(billion US\$)

Classes	Goods	Volume	(%)
84	Nuclear reactors; boilers, machinery and mechanical appliances; parts thereof	69.93	22.5
87	Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof	23.88	14.2
85	Electrical machinery and equipment and parts thereof; television image and sound recorders and reproducers, and parts and accessories of such articles	22.52	13.4
90	Optical, photographic, cinematographic, measuring, medical or surgical instruments and apparatus; parts and accessories thereof	10.01	5.9
74	Copper and articles thereof	7.57	4.5
39	Plastics and articles thereof	7.07	4.2
88	Aircraft, spacecraft, and parts thereof	5.88	3.5

Source: China Customs Statistics 《中国海关统计》

Findings (2). Towards Modern Silk Roads

- ❑ Europe-Asia Transcontinental Bridges and Corridors
- ❑ Europe-China Trade Logistics and Supply Chains



Rail transport indicators, 2005 and 2010 (1)

	Rail passenger transport (passenger-km) ⁽²⁾			Rail freight transport (tonne-km) ⁽³⁾		
	million		per inhabitant	million		per inhabitant
	2005	2010	2010	2005	2010	2010
EU-27	357 527	388 037	803	399 896	389 680	777
Argentina	6 979	:	:	12 628	12 025	298
Australia	1 290	1 500	67	46 164	64 172	2 878
Brazil	:	:	:	221 211	267 700	1 373
Canada	2 790	2 875	84	338 661	322 741	9 457
China	583 320	791 158	591	1 934 612	2 451 185	1 832
India	575 702	903 465	738	407 398	600 548	490
Indonesia	25 535	14 344	61	4 698	4 390	19
Japan	239 246	244 235	1 916	21 900	20 432	160
Mexico	73	178	2	54 387	71 136	643
Russia	164 262	139 028	981	1 801 601	2 011 308	14 189
Saudi Arabia	393	337	12	1 192	1 748	64
South Africa	:	18 865	377	108 513	113 342	2 267
South Korea	31 004	33 027	676	10 108	9 452	193
Turkey	5 036	5 491	75	8 939	11 030	152
United States	8 869	9 518	31	2 717 513	2 468 738	7 980

(1) Data for some countries may be limited to International Union of Railways (UIC) members.

(2) EU-27: data for 2005 excluding Bulgaria and the Netherlands; EU-27: data for 2009 instead of 2010 excluding Luxembourg and the Netherlands; Indonesia: data for 2008 instead of 2010.

(3) EU-27: data for 2005 excluding Belgium and Bulgaria; EU-27: data for 2010 excluding Luxembourg; Argentina: data for 2006 instead of 2005; Indonesia and Mexico: data for 2008 instead of 2010.

Source: Eurostat and the World Bank (World Development Indicators and Global Development Finance)

Road transport indicators, 2004 and 2009

	Passenger cars (number per 1 000 inhabitants)		Road freight transport (tonne-km) ⁽¹⁾		
			million	per inhabitant	
	2004	2009	2004	2009	2009
EU-27	448	473	1 692 670	1 755 375	3 501
Argentina	:	:	:	:	:
Australia	528	550	162 300	189 847	8 831
Brazil	136	178	:	:	:
Canada	448	420	:	129 600	3 890
China	12	34	784 090	3 718 882	2 793
India	9	12	:	:	:
Indonesia	21	45	:	:	:
Japan	441	454	327 632	334 667	2 624
Mexico	131	191	199 800	211 600	1 889
Russia	168	233	194 000	180 135	1 270
Saudi Arabia	442	:	:	:	:
South Africa	92	110	:	:	:
South Korea	221	267	12 545	12 545	257
Turkey	77	95	156 853	176 455	2 456
United States	466	439	2 116 532	:	:
World	110	125	:	:	:

(1) EU-27, data for 2010 instead of 2009, 2010 data excluding Malta, 2004 data excluding Bulgaria, Romania and Malta; Australia and Canada, data for 2008 instead of 2009; Russia, data for 2005 instead of 2004.

Source: Eurostat and the World Bank (World Development Indicators and Global Development Finance)

Maritime fleet and ports, 2002, 2010 and 2012

	Maritime fleet size (deadweight tonnage, 1 000 DWT) ⁽¹⁾		Largest port (2010)	
	2002	2012	Name of port and quantity of goods handled (1 000 tonnes)	
EU-27	197 032	307 204	Rotterdam	395 763
Argentina	312	818	San Lorenzo-Puerto San Martín	42 694
Australia	2 319	1 815	Port Hedland	198 997
Brazil	5 959	3 360	Tubarão	132 031
Canada	1 309	3 532	Vancouver	118 379
China	24 048	58 195	Shanghai	534 371
India	10 645	16 141	Jawaharlal Nehru (Nhava Sheva)	64 320
Indonesia	:	13 512	Tanjung Priok	39 997
Japan	17 913	23 572	Nagoya	185 703
Mexico	1 180	2 071	Lázaro Cárdenas	29 451
Russia	9 564	7 413	Novorossiysk	81 603
Saudi Arabia	1 386	2 333	Jeddah	49 164
South Africa	359	101	Richards Bay	85 148
South Korea ⁽²⁾	9 425	19 157	Busan	262 963
Turkey	9 270	9 535	Izmit (Kocaeli)	37 735
United States	11 699	11 997	South Louisiana	214 337
World	822 011	1 534 019	Shanghai	534 371

⁽¹⁾ Deadweight tonnage is the weight measure of a vessel's carrying capacity. It includes cargo, fuel and stores.

⁽²⁾ Largest port based on revenue tons (1 revenue ton is equal to 1 tonne or 1 cubic metre).

Source: Eurostat, the United Nations Conference on Trade and Development (Maritime transport indicators) and the American association of port authorities (World port rankings)

Findings (3): Dynamics of Transport Infrastructure

- The theory: Infrastructure innovation not only increases competitive productivity with reduced transaction cost but also reduces **environment heterogeneity** in international and interregional trade
- 1) What and how has transport infrastructure played in the North-South global outsourcing prior to 2008 crisis?
Port containerization and clustering
- 2) What and how is transport infrastructure playing in the “further South” movement of global outsourcing during and after 2008 crisis? **Port centric logistics**
- 3) What and how will transport infrastructure play in the emerging trend towards transcontinental trade and logistics? **Transcontinental urbanization [Explains the disadvantages of trans-Siberian Railway for Japan and Korea, due to irreducible environment heterogeneity]**

A Megatrend: Transcontinental Logistics

- Transcontinental trade and logistics: Internet of supply chains (供應鏈互聯網) → Urbanization of “modern silk roads”



Outlooks: Internet of Transport and Logistics

- ❑ Reduced environment heterogeneity (by Internet of Things): Increased transaction efficiency → Digital supply chain → changed games of international trade
- ❑ New energy technology: Shale gas (US) for “back to North” → fossil energy cheaper → boost “Euro-Asia” intercontinental trade and logistics
- ❑ The key: Breakthrough technology in transport and logistics (Transport Logistics Internet (運載物流物聯網)) → Lower transcontinental transaction cost → digital supply chains of the new Silk Road



Thank You!