

UNCTAD
Ad Hoc Expert Meeting on
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UNCTAD's LSCI
– data – uses – correlations –

by

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Ad Hoc EM


Geneva, November 2012

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- ▶ UNCTAD Liner Shipping Connectivity Index LSCI
- ▶ The data we have so far
- ▶ Possible usages



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Containerization of trade, and access to containerized transport services are important determinants of countries' trade competitiveness

How can we measure this?



“Connectivity”

- 1) Per country – in a “point”
- 2) Per route – between pairs of countries



“Connectivity”

- 1) Per country – in a “point” (159)
- 2) Per route – between pairs of countries



"Connectivity"

- 1) Per country – in a "point" (159)
- 2) Per route – between countries ($159 \times 158 / 2 = 12561$)



Example: Italy's connections (fleet deployment)

Origin	Destination	Ships	TEU	Max ship size	Companie	Services
Italy	Algeria	5	68	68	1	1
Italy	Algeria	8	5873	1275	4	4
Italy	Argentina	8	44238	9108	1	1
Italy	Australia	39	75725	2362	3	2
Italy	Bahamas	2	21972	3968	1	1
Italy	Belgium	44	58526	4758	9	10
Italy	Buenos	10	21824	2499	3	3
Italy	Buenos	89	88281	3926	3	2
Italy	Bulgaria	2	2962	2826	1	1
Italy	Cameroon	88	27286	2288	4	4
Italy	Canada	10	228272	4212	7	8
Italy	Canary Islands	4	12487	2488	1	1
Italy	Chile	6	88276	1738	2	2
Italy	China	182	768731	14888	16	18
Italy	Colombia	26	54888	2474	7	4
Italy	Congo, Kin	3	8138	8825	1	1
Italy	Costa Rica	6	14144	2474	2	1
Italy	Costa Rica	28	43829	2488	7	7
Italy	Cuba	4	5270	8482	1	1
Italy	Egypt	29	28826	2984	6	10
Italy	Denmark	3	3684	752	1	1
Italy	Djibouti	4	5242	8827	2	2
Italy	Dominican Republic	26	54888	2474	7	4
Italy	Egypt	149	471433	13982	29	24
Italy	Ethiopia	149	722435	14888	25	28
Italy	Gabon	5	8526	8827	1	1
Italy	Germany	36	114188	1362	18	18
Italy	Ghana	88	17144	2488	5	5
Italy	Greece	48	188411	9488	12	20
Italy	Guadeloupe	6	14144	2474	2	1
Italy	Guatemala	4	2625	8827	1	1
Italy	Guinea	3	4517	8482	1	1
Italy	India	49	114888	4758	13	7
Italy	Indonesia	9	16252	1488	1	1
Italy	Iran	2	3888	9108	1	1
Italy	Israel	42	21528	8488	9	15
Italy	Italy Coast	21	28874	2488	5	5
Italy	Jamaica	4	25888	4212	1	1
Italy	Japan	21	18826	4212	2	2
Italy	Jordan	4	8888	9108	1	2
Italy	Korea	4	5238	8488	1	1
Italy	Lebanon	34	52214	2984	18	12
Italy	Libya	21	13688	1127	7	7
Italy	Malaysia	10	438411	11882	9	6
Italy	Malta	14	23826	13882	11	12

86
direct connections

“Maritime connectivity”

UNCTAD’s “Liner Shipping Connectivity Index” (LSCI):
An indicator for the supply of liner shipping services

5 Components (from Lloyds List Intelligence):

- Ships
- TEU capacity
- Shipping companies
- Services
- Maximum ship sizes



“Maritime connectivity”

Summary

Liner shipping connectivity index, annual, 2004-2012

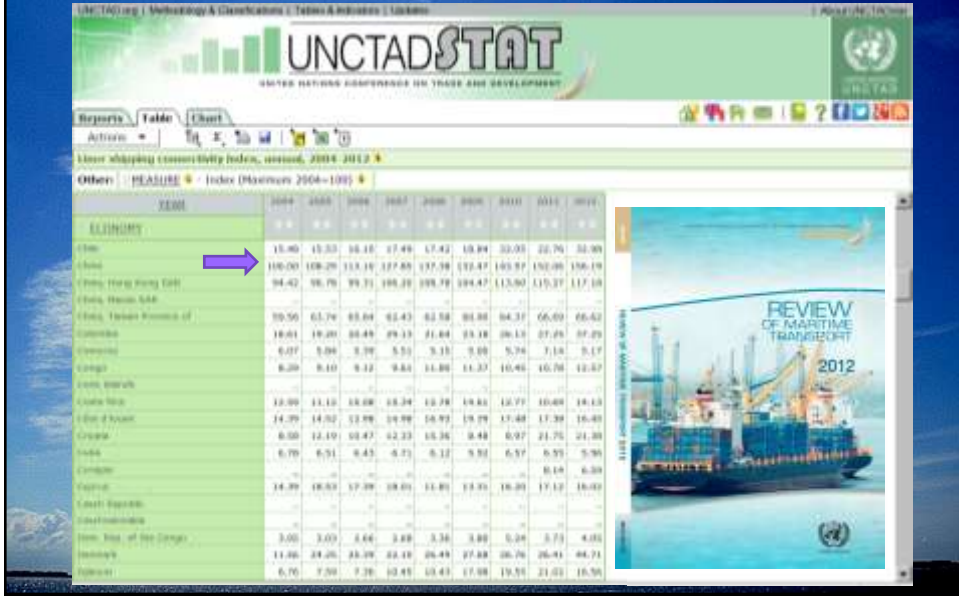
Dimension name: MEASURE
Description: MEASURE

Notes:

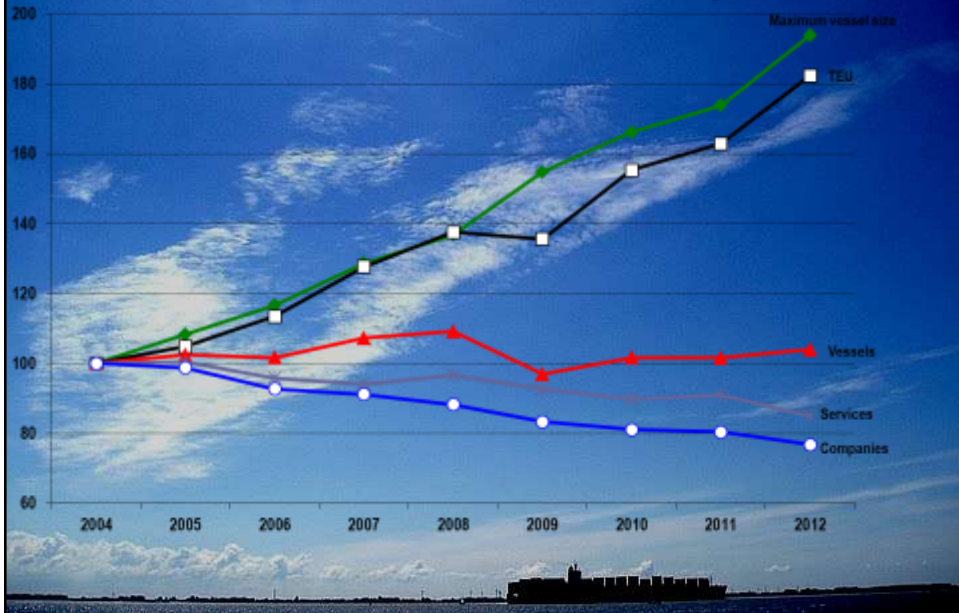
LSCI is generated from five components: (a) the number of ships; (b) the total container-carrying capacity of those ships; (c) the maximum vessel size; (d) the number of services; and (e) the number of companies that deploy container ships on services from and to a country's ports. The data are derived from Containerisation International Online. The index is generated as follows: For each of the five components, a country's value is divided by the maximum value of that component in 2004, and for each country, the average of the five components is calculated. This average is then divided by the maximum average for 2004 and multiplied by 100. In this way, the index generates the value 100 for the country with the highest average index of the five components in 2004.

%, 100%

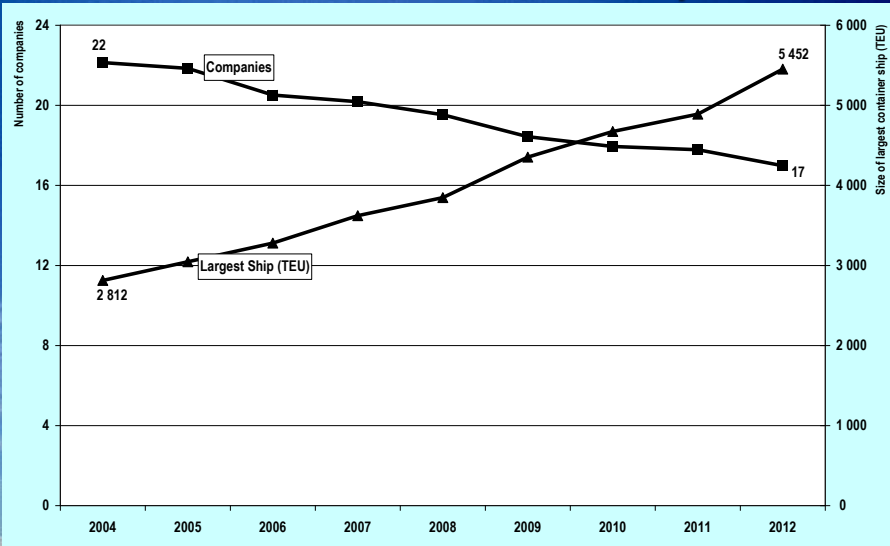
"Maritime connectivity"



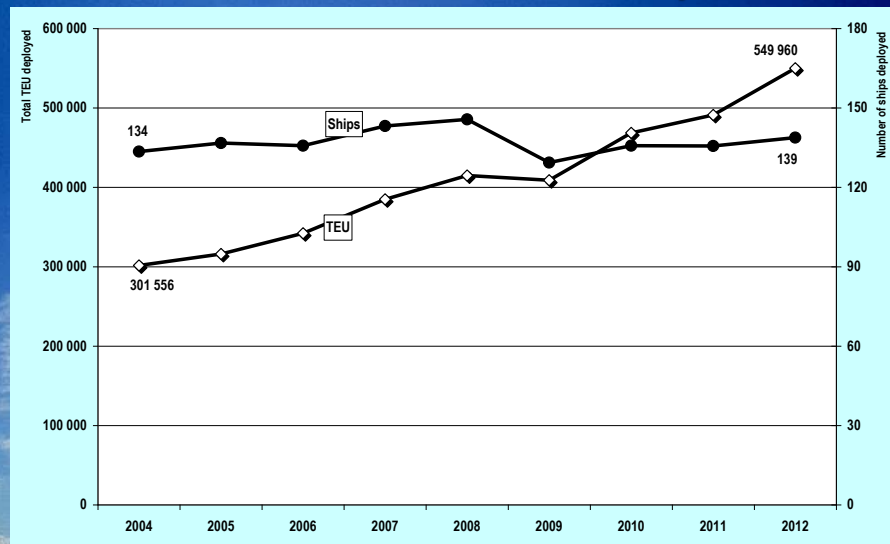
Trends in the LSCI's 5 components



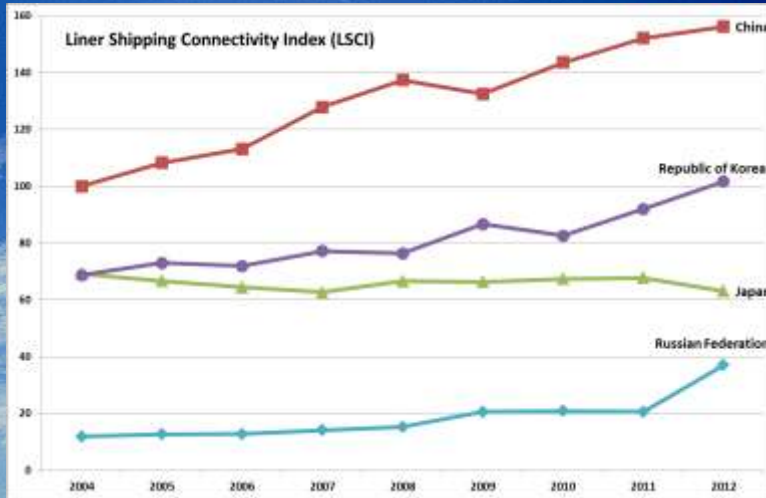
Trends in the LSCI's 5 components



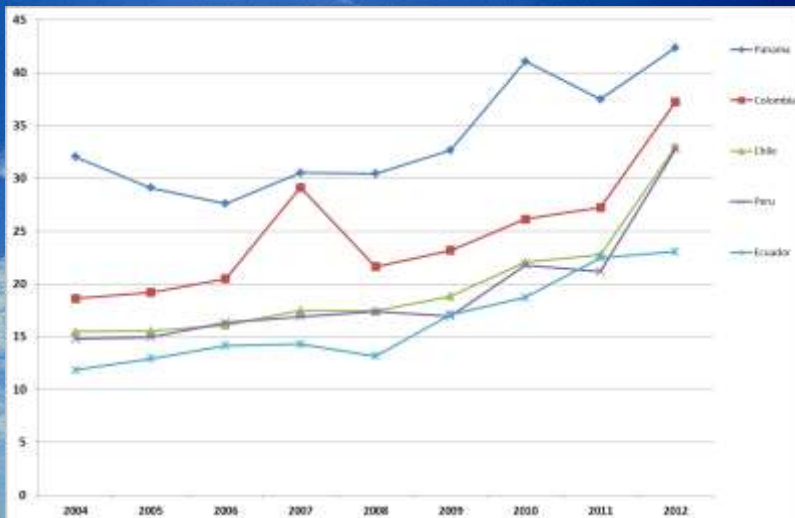
Trends in the LSCI's 5 components



Trends



Trends



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Data for research – country level

- ▶ For nine years (2004-2012):
The five components of the LSCI
(159 countries)
plus the published LSCI

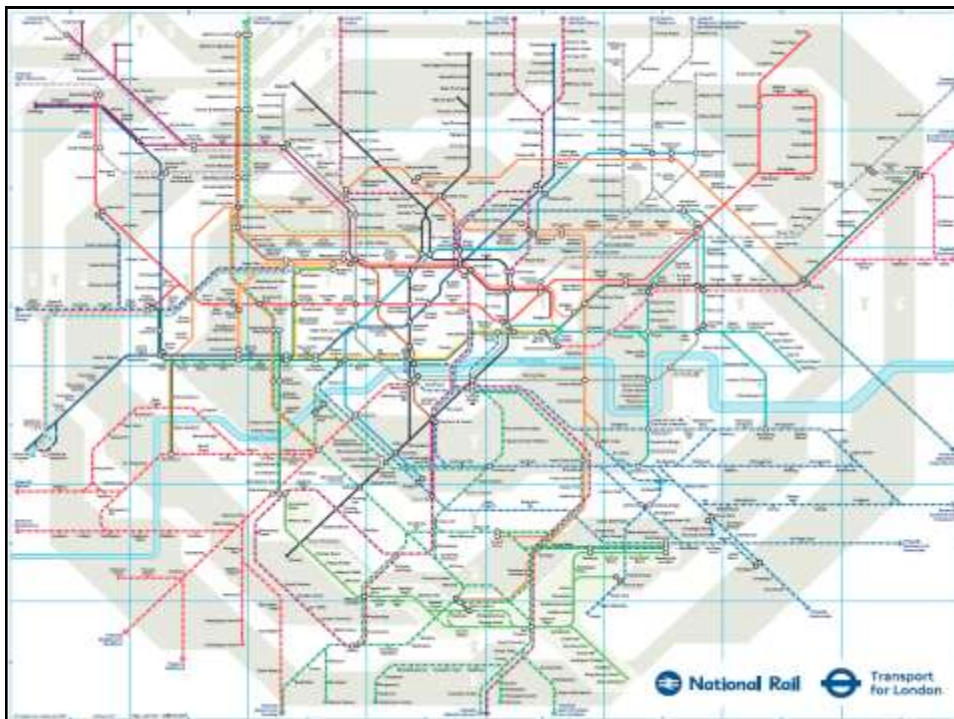
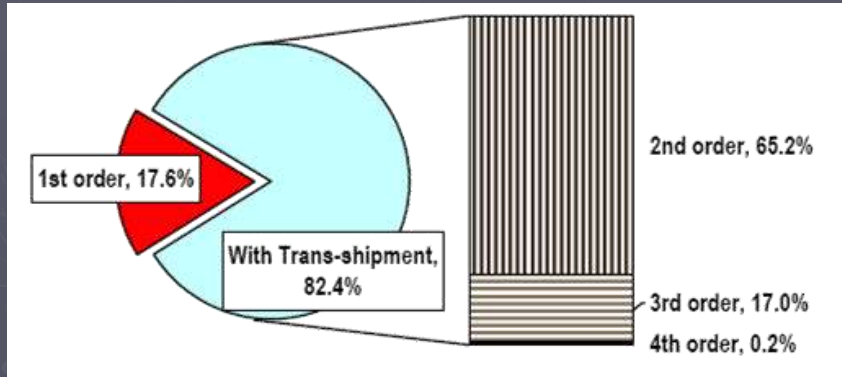


Source for underlying data: Lloyds List Intelligence (formally Containerization International On-line www.ci-online.co.uk)

Direct connectivity?

Out of 159 x 158 pairs of countries:

How many are connected by direct services?



Data for research – country level



- ▶ The number of trading partners with which a country has direct shipping connections
- ▶ The number of trading partners with which a country has connections that require one / two / three transshipment.

Data for research – the Matrix



Data for research – the Matrix

- ▶ Four components of the LSCI
(all except number of services)
per pair of country (12561 pairs)

Data for research – the Matrix

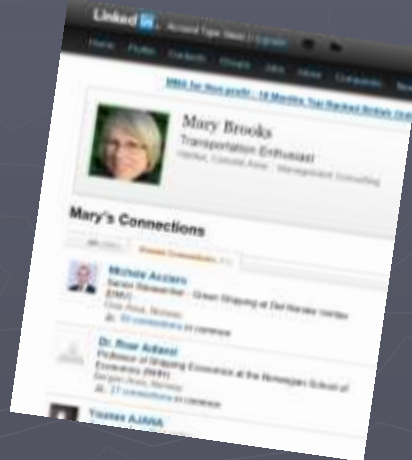
- ▶ For each pair of coastal countries:
The maritime distance between the major
container ports.

Generated by UNCTAD based on purchased data on maritime distances

Data for research – the Matrix



- ▶ The number of common connections



UNCTAD Calculations. Source for underlying data: Lloyds List Intelligence

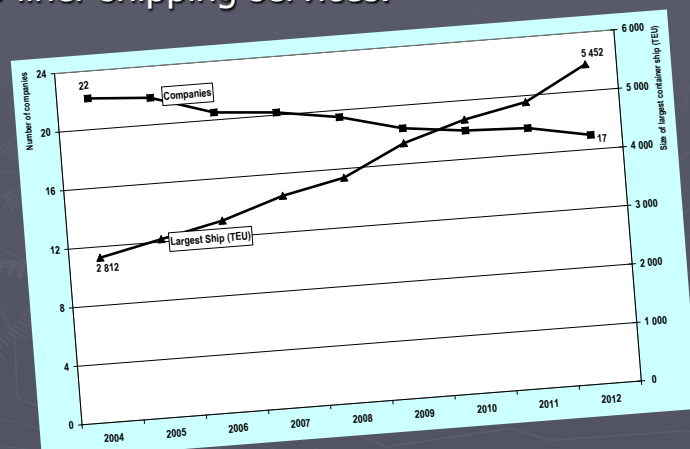
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What can we do with this data

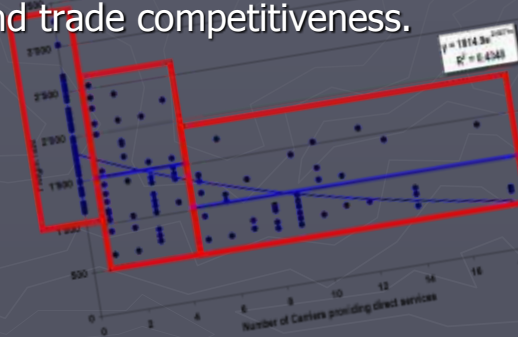
What can we do with this data

1. Observe **trends** in the shipping network, levels of competition, and individual countries' access to liner shipping services.



What can we do with this data

1. Observe **trends** in the shipping network, levels of competition, and individual countries' access to liner shipping services.
2. Use the data as **explanatory variable** in gravity models, or for models about transport costs and trade competitiveness.



What can we do with this data

1. Observe **trends** in the shipping network, levels of competition, and individual countries' access to liner shipping services.
2. Use the data as **explanatory variable** in gravity models. Use the data as explanatory variable for other models about transport costs and trade competitiveness
3. Try to explain the data, i.e. what are the **determinants of "connectivity"** (development, trade volumes, geography, **port performance...**)

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