Economic Importance of Ports and Inland Waterways

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PIANC LATIN American Seminar/ VI Argentine Congress on Port Engineering

April 14, 2010

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Contents

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1. Introduction

- Historical view: ports and waterway infrastructure as a cost factor for the national/regional government
- Present approach: ports as “moneymakers”; direct earnings and indirect economic drivers
- An integral, balanced approach is needed: public and private sector collaboration

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2. Direct and indirect economic importance

Economic indicators: Added Value and Employment

Added Value: Market value of Turn-over minus the value of purchased and used materials/services

(=personnel costs+ depreciation+ profit + taxes)

Not included: investments, income taxes personnel, etc

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Direct and indirect economic importance

Direct: quay-related + seaport-related + water-related industry

Indirect: Added Value and Employment related to the purchased and used materials/services within the country

Example:

Dutch seaports → Port of Rotterdam → Inland shipping

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Dutch Seaports

Macro-economic performance in 2007

	Direct	Indirect	Total	
Added value (billion Euro)	23.1	12.1	35.2	(6.7 % GNP)
Employment (x 1000 persons)	165.5	109.8	275.3	(3.2 %)

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Port of Rotterdam

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Port of Rotterdam

Macro-economic performance in 2007

	Direct	Indirect	Total	
Added value (billion Euro)	14.6	6.2	20.8	(3.7 % GNP)
Employment (x 1000 persons)	90.3	56.7	147.0	(1.7 %)

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Port of Rotterdam

Contributing sectors:

- Transport (incl. stevedoring) 35 %
- Industry 41 %
- Commerce 7 %
- Public and private services 17 %

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Dutch Inland Shipping sector

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Dutch Inland Shipping sector

Economic importance (as % of indicators Port of Rotterdam)

- Employment (direct + indirect) 10 %
- Added value (direct + indirect) 5 %

But the capacity of the infrastructure network is very large, reaches far into Europe and forms a strategic advantage for the Port of Rotterdam and other Dutch seaports

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3. Financial Importance

Two ways to look at this:

- As a public entity, revenues and expenditure of the responsible government → Port of Antwerp
- As a corporation, profit / loss → Port of Rotterdam

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Port of Antwerp

Port of Antwerp Authority is a public entity within the Flemish Government. Income and expenses in 2000:

- Income (taxes, lease revenue, pilotage and marine services) € 335 mio
- Expenses (dredging, depreciation and operational costs) € 175 mio

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Port of Rotterdam

Since 2004 a public corporation with the city of Rotterdam and the Dutch Government as shareholders

Average	Turnover	Result	
2006-2008	€ 479 mio	128 mio	(27 %)

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4. Strategic Importance

- Port related industrial development
- Positive effects on trade and exports

  → some studies related to Latin America

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Effects of port efficiency on transport costs and competitive strength, Latin America

Limao & Venables (2001):

- (Poor) infrastructure accounts for more than 40 % of the transport costs
- Increase transport costs by 10% → trade volumes down by 20%
- Governments can influence the port efficiency, not the other components of maritime transport costs

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Port efficiency

Study Wilmsmeier, Hoffmann and Sanchez (2006):

- Trade between 7 importing and 16 exporting LA countries, containerizable goods (2002)
- Improved port efficiency at both ends by a factor 2 has the same effect on costs as halving the distance
- Port improvements → lower freight rates → more liner services → higher cargo volumes (multiplier effect)

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Port efficiency

Study by Clark, Dollar and Micco (World Bank, 2004):

- Average transport costs for imports into LA countries are about 8.3 % of the value of imports
- After the trade liberalization transport costs represent higher barriers than import tariffs. Example: imports from LA-countries into USA.

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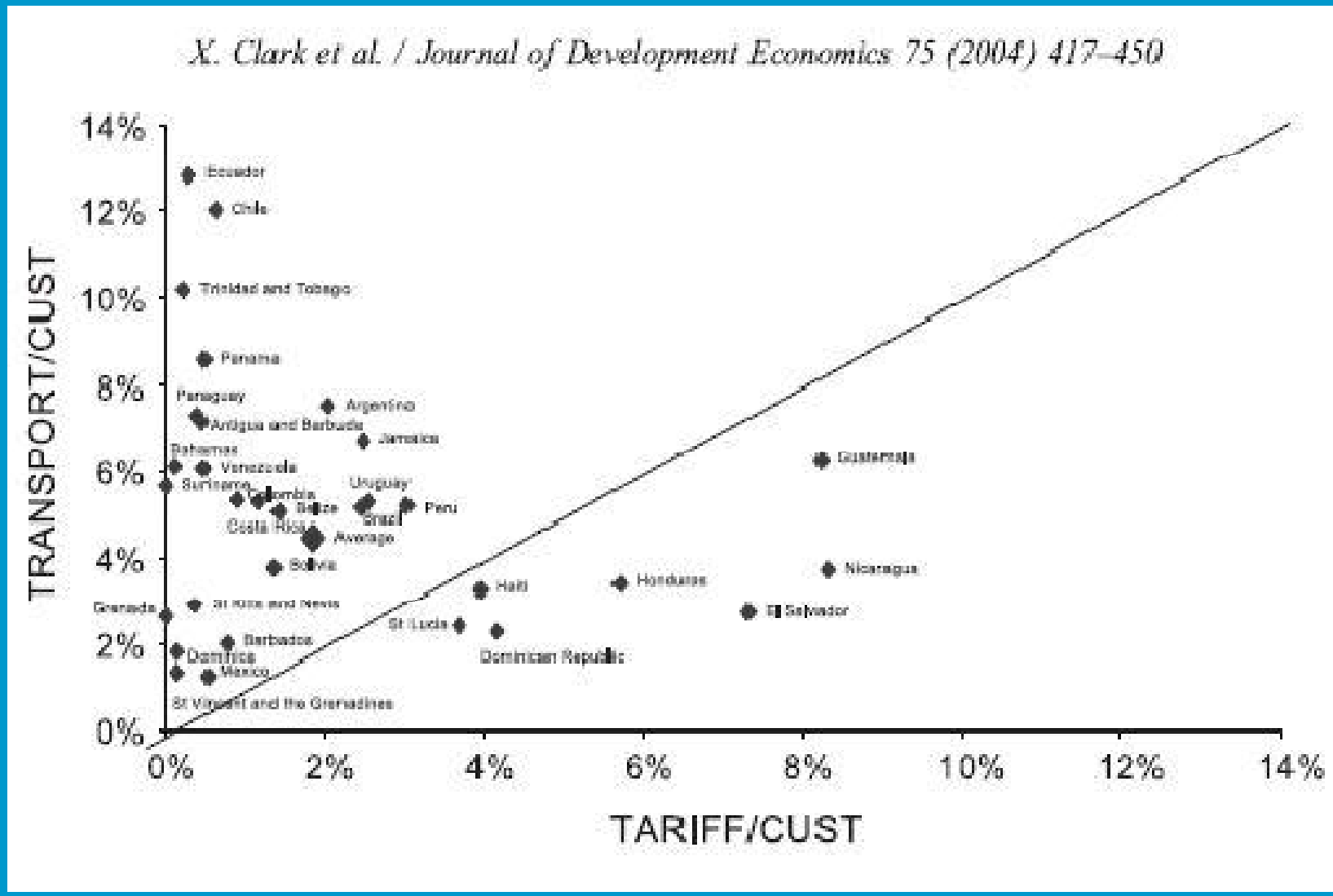
X. Clark et al. / Journal of Development Economics 75 (2004) 417–450
TRANSPORT/CUST
TARIFF/CUST
14%
12%
10%
8%
6%
4%
2%
0%
0%
2%
4%
6%
8%
10%
12%
14%
Ecuador
Chile
Trinidad and Tobago
Panama
Paraguay
Argentina
Antigua and Barbuda
Jamaica
Bahamas
Venezuela
Suriname
Uruguay
Peru
Belize
Brazil
Costa Rica
Average
Bolivia
Guatemala
Nicaragua
Haiti
Honduras
El Salvador
Grenada
St Kitts and Nevis
St Lucia
Dominican Republic
Barbados
Dominica
Mexico
St Vincent and the Grenadines

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Port efficiency

Factors in port inefficiency:

- Bad hinterland connections
- Low seaport productivity, high waiting time
- Anti-competitive practices, such as dock-workers licenses, leading to high handling costs

LA ranking on port efficiency, custom clearance and handling costs:

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Global Competitiveness Report

Region	Port efficiency (7—best, 1—worst)	Custom clearance (days)	Container handling charges in ports (US$/TEU)
North America	6.35	3.50	261.7
Europe (excl. East)	5.29	4.00	166.7
Middle East	4.93	NA	NA
East Asia and the Pacific	4.66	5.57	150.5
East and South Africa	4.63	12.00	NA
North Africa	3.72	5.50	NA
Former Soviet Union	3.37	5.42	NA
East Europe	3.28	2.38	NA
Latin America and the Caribbean	2.90	7.08	251.4
South Asia	2.79	NA	NA
West Africa	NA	11.70	NA

Sources: Global Competitiveness Report (1999), World Bank Surveys, Cámara Marítima y Portuaria de Chile. A.G. (1999), and LSU (1998). NA: data not available.

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Economic, financial and strategic importance

Efficient seaports
- -have a large contribution to a country's economy
- - are financially attractive
- - generate industrial development and trade

Efficient inland waterways
- - contribute to the seaport efficiency
- - provide a clean mode of transport (compared with road)

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Port Privatisation?

- Seaports are very capital-intensive and have a long pay-back time
- Negative effects (such as environmental impacts) need full attention

- Hence a balance of public and private interests and involvement is needed, the Landlord approach is preferred

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5. Comprehensive planning approach

- Infrastructural → Masterplan
- Industrial → Business Plan and Marketing
- Institutional → Relation port – government
  Organisation port authority
  Education and training

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6. Education and training

- For planning, realization and management of ports and inland waterways a country needs (among others) well trained engineers

- Questions: how many?
  what level?

To answer this let us look at some international trends.

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Trends in Education and Training

1. At university-level the Anglo-Saxon system with BSc (3 years) and MSc (2 years) becomes worldwide the standard (in Europe since 1999)

2. Most BSc-s continue with MSc study without interruption

3. International mobility of students increases, especially in the MSc-phase

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The role of research

Civil Engineering research used to be limited and concentrated in institutes, but this is changing:

- The number of PhD-students in Civil Engineering is rising, research becomes essential at the universities, the civil engineering sector becomes more knowledge driven

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Implications for Latin American countries

Need to start regular MSc-courses in Civil Engineering, including specialisations in Coastal, Port and Hydraulic Engineering

Adapt the higher education system to the BSc-MSc system as in US and Europe, to produce more engineers and facilitate exchange and mobility.

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7. Conclusions

1. Ports and inland waterways are important motors for a country's economy
2. The development of port and waterway infrastructure requires a balanced public-private approach, in which engineers play an important role
3. The number and the education-level of port engineers in Latin America has to increase
4. This is best done by starting regular MSc-courses, right after BSc and adapting the higher education system to the 5 year BSc-MSc system.

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Thank you for your attention

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