The economic contribution of ports and terminals

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Globalisation has resulted in the sourcing of goods from any location in the world, and this enablement has also lead to a competitive shift in the basis of a port's competitive advantage. Ports can no longer place reliance solely on their strategic geographical location or a country's endowment alone in order to maintain economic dominance; a port's ability to remain competitive today hinges on its ability to compliment and contribute to the competitive position of a country's holistic supply chain its boundaries.

This imperative requires investment in infrastructure and technology on the one hand, and cost cutting and lean operational business practices on the other, with an added commitment to play a coordinator role between different supply chain stakeholders.

South Africa

Transnet is the largest link in the South African freight logistics chain. Every day the company delivers thousands of tonnes of goods in and around South Africa through its freight network of sea ports, rail corridors and fuel pipelines. At the port, cargo is moved onto vessels for export and unloaded for import. The state-owned company introduced an investment programme three years ago that is known as the Market Demand Strategy.

The objective of this strategy is to invest about US$25 billion over a period of seven years (figure might differ depending on exchange rate fluctuations) in much needed port, rail and pipeline infrastructure in order to improve the supply chain. These committed infrastructure and equipment investments are aligned to economic cargo demand forecasts which would stimulate economic growth for the South African economy once commissioned. Two thirds of the

Document preparation	Customs clearance and inspections	Port Charges	Inland transportation and handling	Total Supply Chain Costs
$355	**$90**	$285	**$1 100**	$1 830
19.4%	**5%**	15.6%	**60%**	

Figure 1: World Bank report on South African Export Supply Chain Costs

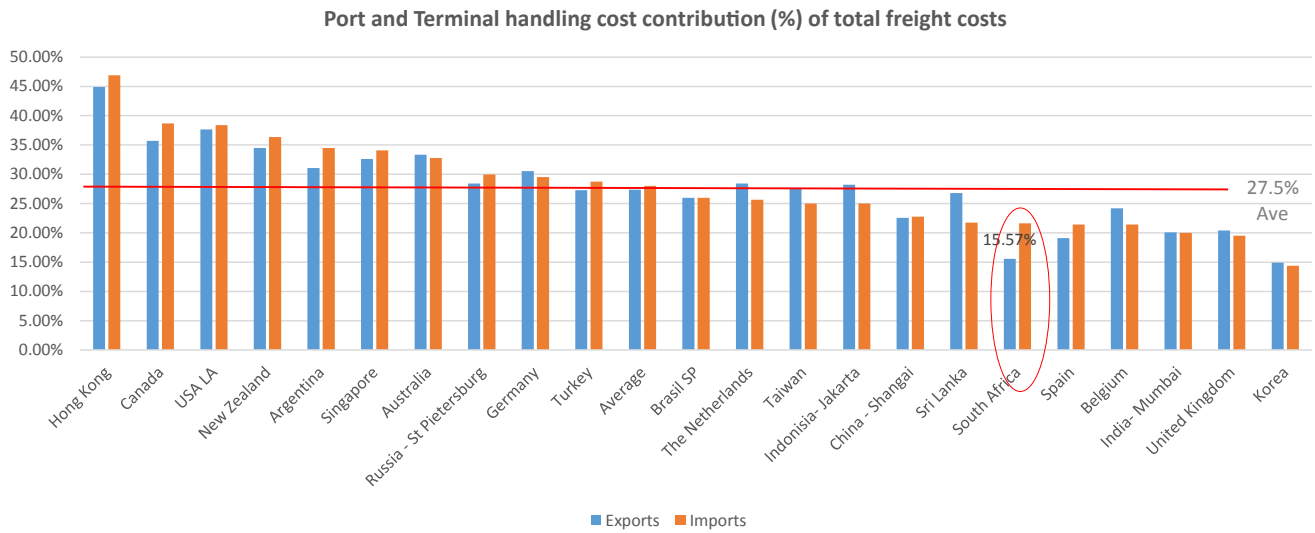

Figure 2: Port and terminal handling cost contribution (%) of supply chain costs (excluding sea transport)

funding requirements will be obtained from revenue generated by the group's operations, and the balance sourced from overseas and local sources.

Challenges with economic growth, high unemployment levels and ever increasing input cost requires the various role-players in the supply chain to investigate their individual contribution to the cost of doing business in a country.

Cost of doing business

The World Bank publishes a comprehensive report annually comparing supply chain costs for the export of a container from a country's major business hub to its major port of export. These costs are contributed by various service providers in the supply chain. Total supply chain cost includes the cost of documentation, customs and inland transport, but excludes sea transport.

According to the World Bank Report on doing business and trading across borders, South African port charges contribute a mere 15.6% of total transport chain charges as compared to the international average of 27.7% port cost contribution.

Strategic position

The cost of transport, both on land and at sea, outweighs port costs by far. Due to South Africa's geographical position at the most southern point of world trade lanes, sea transport is the most expensive contributor to total supply chain costs. Adding the sea leg from Durban to Rotterdam reduces port cost contribution to 5.5% of total supply chain cost. Shipping companies apply strategies such as slow steaming, and as the ships are getting bigger, unit costs comes down in terms of economies of scale.

Inland transport is the second biggest portion of total supply chain costs and moving traffic from road to rail will lead to an estimated reduction in inland transport costs of at least 30%.

The aid of a TOS

With the implementation of Transnet Port Terminal's (TPT) Navis TOS, manual processes and documentation have been significantly reduced. The last physical document that TPT required, the CTO, became obsolete in 2011 when all transactions with the port became electronic.

It is interesting to note that the cost of documentation levied by private sector role-players, clearing and forwarding agents, as well as shipping lines, is a bigger contributor to supply chain costs than total port costs. A port is but one of several players within the logistics supply chain and its contribution to supply chain costs are a mere fraction of the total cost of the entire supply chain.

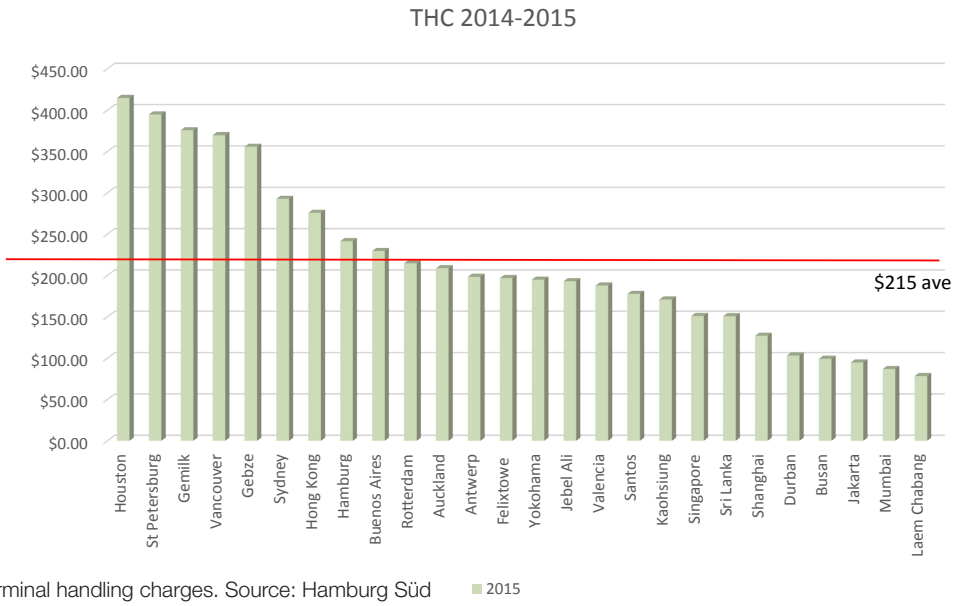

Figure 3: Container terminal handling charges. Source: Hamburg Süd

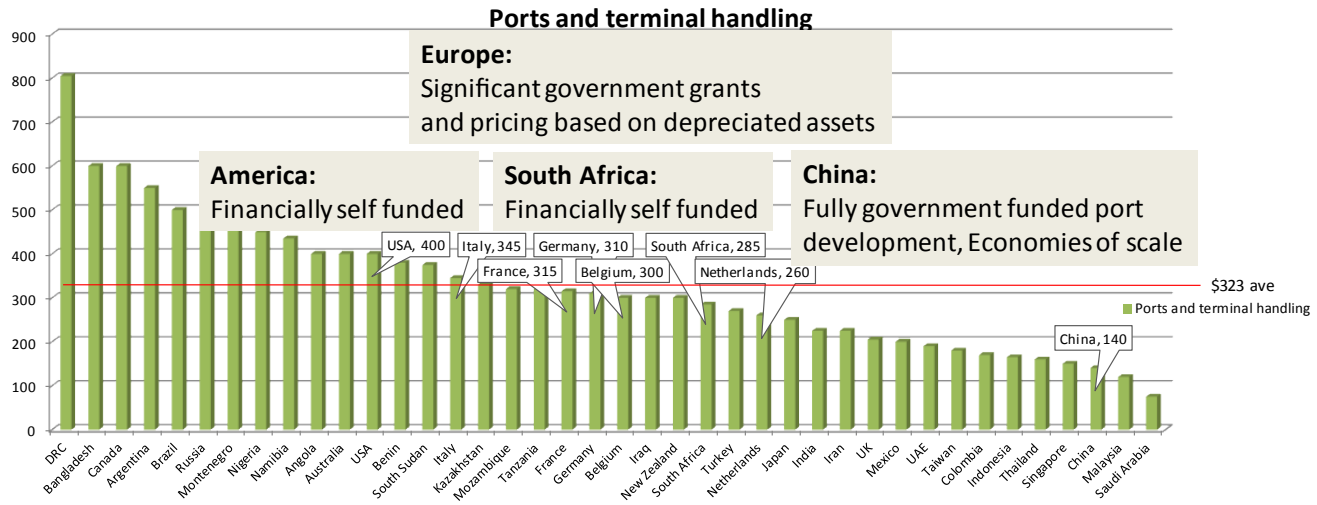

Figure 4: World Bank report on port charges as a contributor to the cost of doing business

Port charges

Cargo dues and terminal handling charges are combined to form total port costs in the World Bank report. If the port cost is split and analysed separately, South Africa's terminal handling charges are also found to be significantly lower than the total handling costs levied by other international terminal operators.

A further analysis of port charges paid by shipping lines indicate that South African ports charge far less than the majority of international terminal operators for the handling of bulk commodities.

Also of interest is the fact that in South Africa taxpayers' money isn't used to make enhancements to infrastructure or to purchase equipment. The $25 billion that is currently being spent in line with the Market Demand Strategy is funded from operations and international loans that must be repaid, unlike the situation in Asian and European countries.

A competitive landscape

The issue of connectivity needs to be considered in determining a port's cost contribution to the supply chain. South Africa is in the top quarter of countries in the world in terms of ease of doing business (positioned 43 out of 189 countries). Factors influencing port competitiveness range from location, ownership, management, labour relations, customer base and the hinterland network, to information technology connectivity.

Dwell and import handling times at ports need to be put in perspective. With port costs contributing such a small percentage to total supply chain costs, it is important to ensure that ship turnaround times are as quick as possible to allow the shipping lines to utilise slow steaming to reduce overall supply chain costs. The average time spent by the 650 containerships that called at South Africa's main container terminal, Durban Pier 2, this year has been 3.7 days.

The average time a containership spent from announcement of arrival at outer anchorage to time of berthing has been 36 hours. Ships arriving at the time when the ETA was communicated up-front to the terminal will berth on arrival, but what adds to the 36 hours is ships arriving too early or missing their berthing windows, as well as vessel delays caused by the ship waiting for connecting ships delivering transhipment cargo.

Durban Container Terminals

Durban has been rated as the most productive terminal in Africa by one of the major shipping lines calling at ports in Africa and elsewhere in the world. The average time a containership spent at berth is less than 2 days in recent months. Furthermore, it takes 42 hours to offload just under 2,000 containers at a berth productivity of 48 moves an hour, which is comparable to Antwerp's 50 moves.

On the landside, import boxes are available for collection ten minutes from landing at Pier 2, which is a straddle operation, and within 12 hours of landing at Pier 1, which runs an RTG operation. A free collection period of up to three days is allowed for import cargo, but in practice containers are dispatched in 1.8 days on average.

Electronic data interchange (EDI) and online documentation processing has streamlined this process. Trucks turn around inside the terminal within 35 minutes. A truck booking system has also been introduced recently with the aim of reducing traffic congestion outside the port gates.

About the author

Willie Coetsee heads up a talented team of individuals responsible for the corporate strategy of Transnet Port Terminals nationally and internationally. He is a seasoned executive that engages in public speaking commitments on a regular basis on the African continent. Topics covered in recent engagements include 'African seaport expansion'; 'How smart ports are making efficiency a reality'; 'How to develop a successful strategy to enable more efficient port operations'; 'Facilitating sustainable investment in Africa'; and, 'Embedding the human resource element in business strategy'.

About the organisation

TRANSNET port terminals

Transnet Port Terminals manages sixteen cargo terminal facilities across seven South African ports with a staff complement of over 9,000. Its operations target four major market sectors; the automotive sector, containers, bulk, and break bulk; all organised according to their respective geographical regions.

Enquiries

www.transnetportterminals.net