



## **Global Pricing Comparator Study (GPCS)**

**Tariff sample date: 1 April 2014**

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## 1. Abstract

This, the third iteration of the Global Pricing Comparator Study (GPCS) looking at 2014 tariffs, which was published previously for 2012 and 2013, serves to confirm the overall results from the previous versions of the report. The overall structure of the South African port pricing system has changed somewhat on a relative level, however, despite large decreases in container cargo dues and export automotives announced in the 2013/14 Record of Decision as well as relative changes in marine services and dry bulk commodities in the following year, the imbalances remain. The results show that significant potential cross-subsidisation from cargo owners towards primary exporters and vessel owners in the NPA tariff structure persist. Although this has improved over the period the study has been conducted, cargo owners still face a 388% premium in 2014/15, although down from a premium of 874% to the global sample average in 2012/13. While vessel owners face costs below the global sample average (-26% in 2012/13, -32% in 2013/14 and -42% in 2014/15), the total NPA costs to users in container ports comes at a still high premium of 125% above the global sample average (similar results for the automotive sector applies) whilst the report shows that bulk commodities are charged much lower total port costs than the global sample averages.

## 2. Terminology and methodology

No single port charge can be accurately compared across the world purely by its tariff, name or category. Port pricing structures differ in the various jurisdictions and even sometimes within the same port or port system. Within each port jurisdiction, a particular tariff structure is used, largely based on the history of that port system, the country's development, its transport and economic policy. The only meaningful comparisons in such an environment is one which looks at the total costs that are faced by a particular activity which is unitary enough, comprehensive enough and consistent enough, across all the port jurisdictions.

The most appropriate comparator base for port pricing comparisons in our opinion is a standardised vessel call. This vessel call has a standard vessel, standard port stay duration and a standard cargo profile. This in itself is fraught with inconsistencies such as the differences in efficiency that would ordinarily either lengthen or shorten a port stay depending on the port, which in turn has ramifications for the time related port charges.

To prevent too convoluted an approach that requires too many assumptions and adjustments that are in themselves tainted by arbitrariness, the vessel calls have been standardised in the study. This would make some foreign ports slightly more expensive than they otherwise would be. It is however important to note that some aspects of what contributes to the total makeup of the port cost structure was not included. These include the charges between cargo owners and their service providers (document fees etc.) and taxes on activity other than the specific port related activity, amongst others.

This methodology was again followed in the 2014/15 iteration of the study to retain consistency in the results. It is important to note that while corrections to the data and improvements to the methodology are applied retrospectively as information becomes available, they did however not have a meaningful impact on the results of the previous study and the broad outcomes remain. Further, it is important that the magnitude of the deviation from a global sample average must be considered together with the relevant change experienced from year to year. In addition, currency fluctuations also impact on the results and as such, using a standard US dollar price in the methodology will capture any exchange rate benefit or loss on the side of the user.

The Ports Regulator Global Price Comparator for 1 April 2014 represents an assessment of the global pricing context for ports with respect to a defined list of commodities, and contextualises South African port pricing in this global context and compares it to the results of the previous two years.

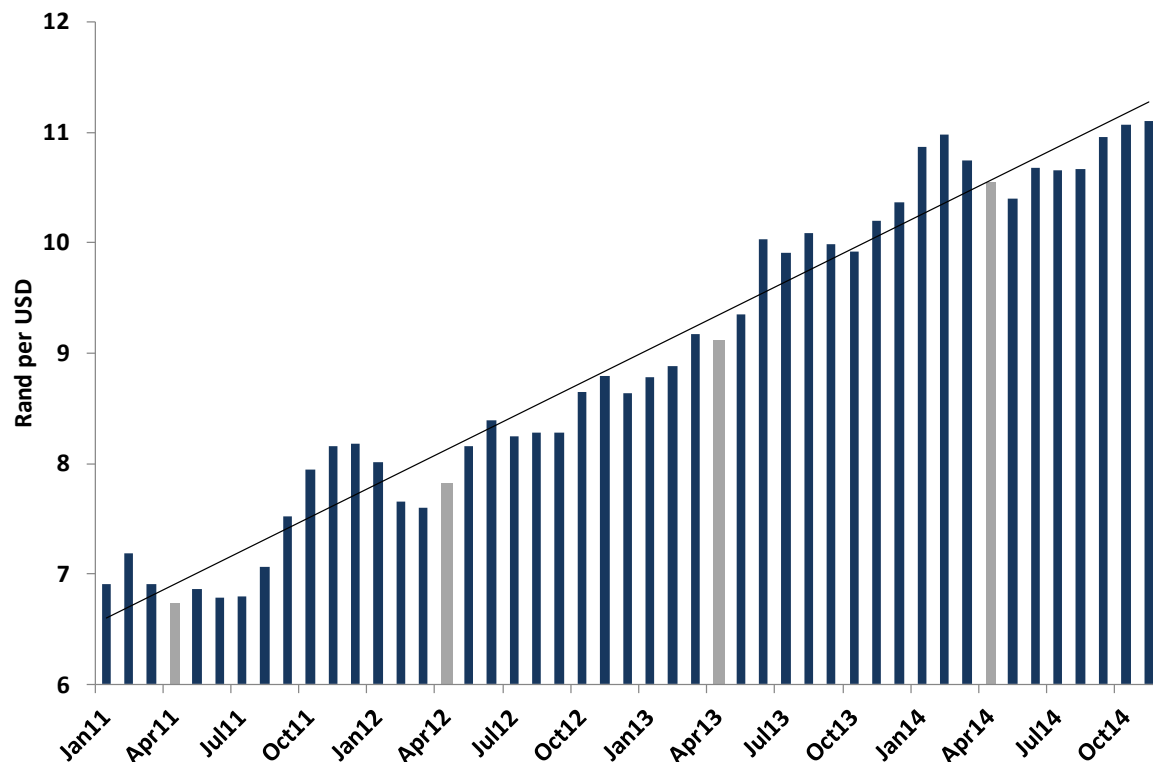
The study is based only on publicly available information and only focuses on the level of charges that are faced by third party service users without “special” pricing arrangements.

Annexure A highlights the risks associated with the interpretation of the data, and Annexure B outlines underlying assumptions in the study related to the unitary vessels used for the different cargo types.

### 3. Exchange rate impact

The continued depreciation in the value of the South African rand against the US Dollar has had a significant impact on port pricing in South Africa. In simple terms, the study reflects a comparison of port prices in USD, i.e. all prices are converted to USD before being compared to each other. A depreciation of the rand against the dollar, as was experienced with a 16% depreciation from April 2013 to April 2014 and a 27% depreciation from the sample date in 2012 to April 2014, implies a lower USD price as the South African tariff book is published in Rand. Whilst other ports in the comparator has also realised changes in value against the USD, the changes were less pronounced with the Euro for example only depreciating 2.9% over the period. The overall impact of the weakening rand is to make South African ports “cheaper” in dollars. Whilst this is a clear benefit to shipping lines and export buyers, the South African cargo owner still has to pay in Rand and the results may thus underestimate the impact on domestic cargo importers.

**Figure 1: South African Rand vs. US Dollar**



#### 4. Containers remain relatively expensive

The study confirmed the results of the previous editions of the report that showed containers are still significantly more expensive than the global sample average, unless you are a foreign cargo owner transshipping through a South African port with cargo dues only a 7% premium to the global sample average. In total, container costs including terminal handling charges is 190% above the global average.

**Figure 2: Total Port costs including terminal handling charges for containers**

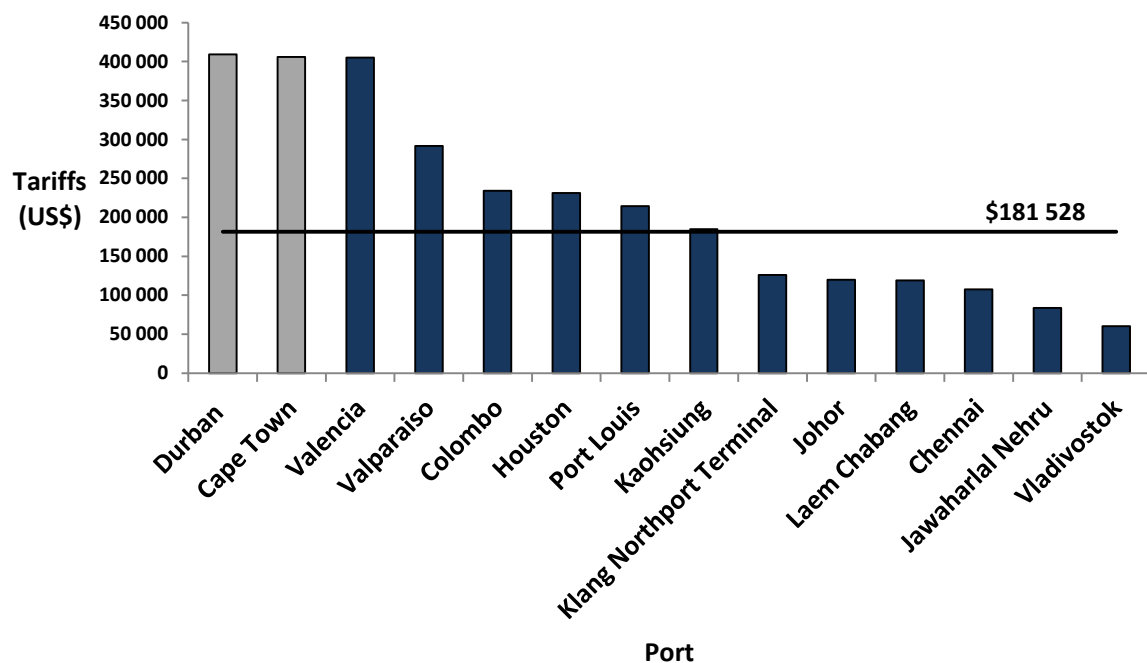
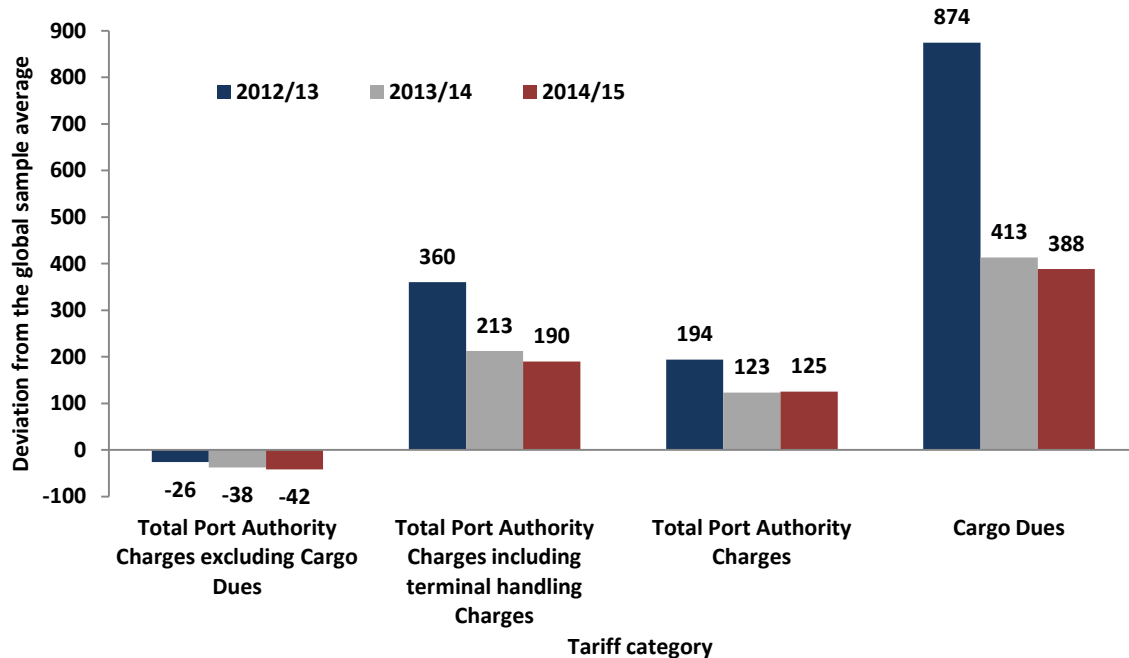


Figure 3 reflects that cargo owners through the cargo dues payable are faced by a 388% premium in 2014/15 compared to a premium of 874% to the global sample average in 2012/13. The recalculated number for 2013/14 resulted in a recorded premium to the global sample average of 413%. While vessel owners face costs below the global sample average (-26% in 2012/13, -37.75% in 2013/14 and -42% in 2014/15), the total NPA costs in container ports comes at a still high premium of 125% above the global sample average.

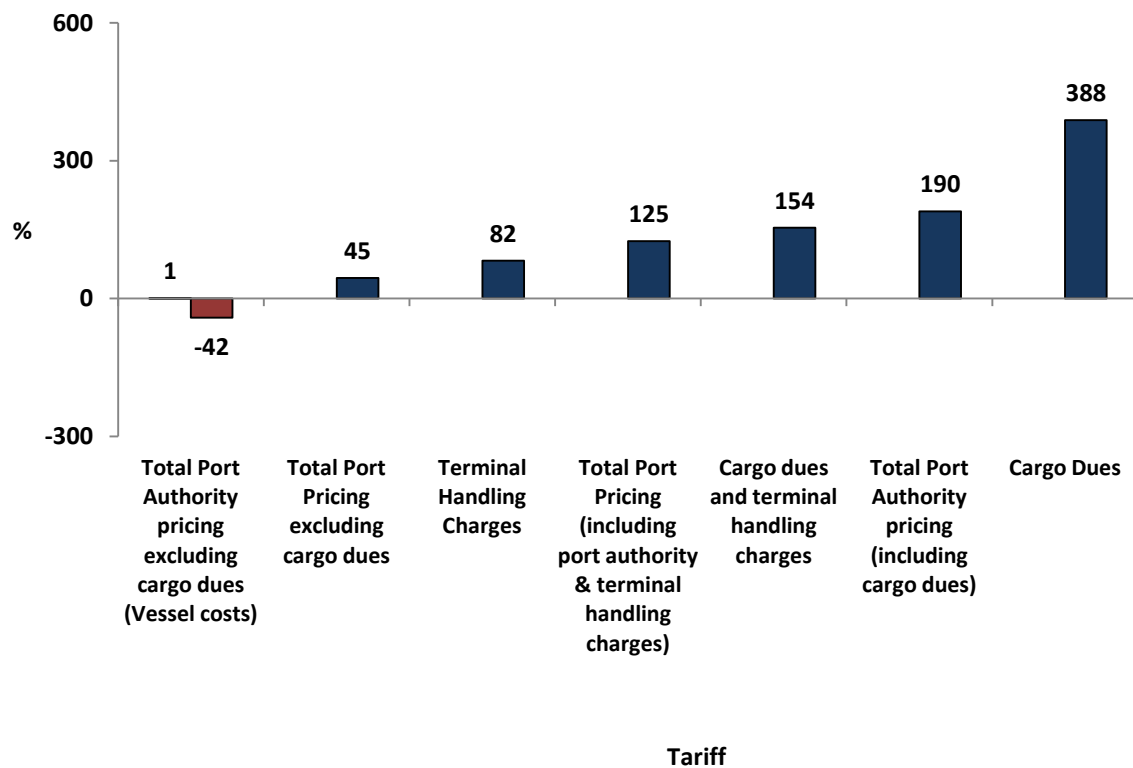
Total port costs (including terminal handling charges) for container owners went down from 213% above the global average to 190% in 2014/15

**Figure 3: South African Container costs (as deviation from the sample global average)**

If Terminal handling charges are taken into account (see figures 2 and 3), total port costs (including terminal handling charges for container owners) went down from 360% above the global sample average in 2012/13 to 213% in 2013/14 and 190% in the current year. These remain significant and the potential cross-subsidisation between “manufactured goods (containers and automotives) and bulk commodity exports remain evident in these results.

The impact of the reduction of 43.3% and 14% in export and import container cargo dues in 2013/14 has moved the South African tariff closer to the global norm with a real increase in cargo dues of 0% (nominal of 5.9% in 2014/15 contributing to the slight relative shift towards the global sample average. It remains however still excessive as figure 2 indicates the South African ports (Durban and Cape Town) remain the most expensive in the sample despite the sizable reduction in container cargo dues in recent years.



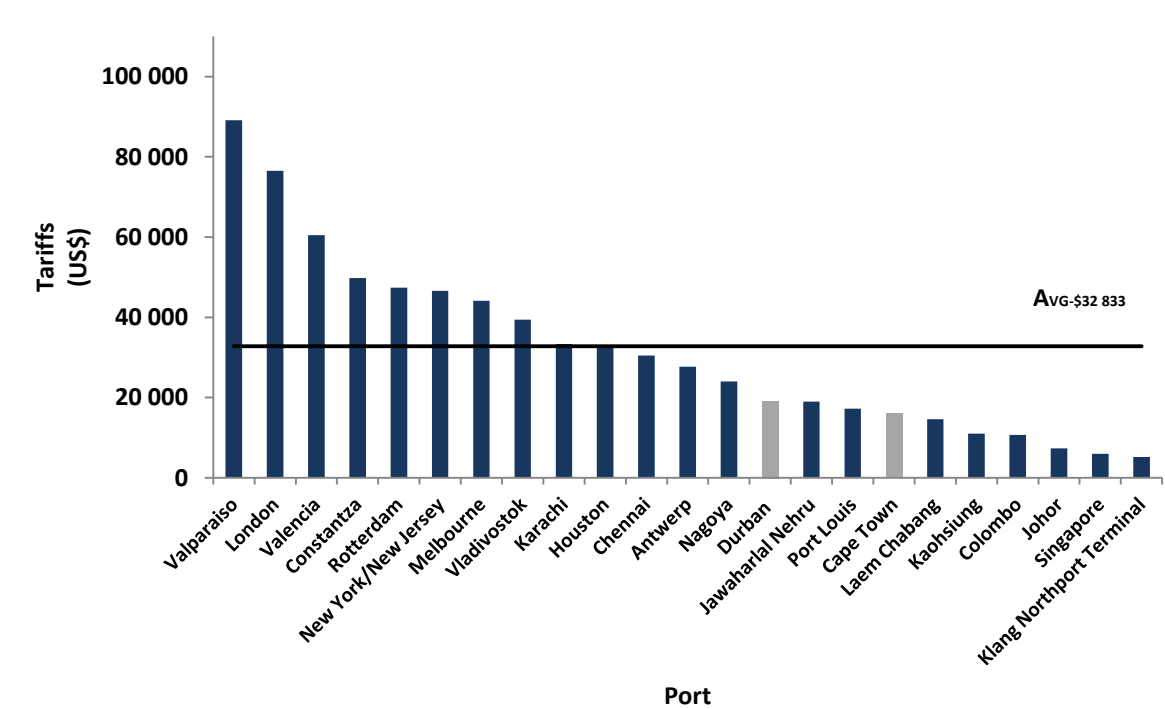
**Figure 4: Components of Container port costs (as deviation from the sample global average)**

The continued imbalances between container vessel costs (see figure 5 for South Africa's position relative to global ports in the sample related to vessel costs), terminal handling charges and cargo dues remains a concern. Whilst vessel owners in addition to the already low costs received an additional discount from the depreciated South African rand, cargo owners has little to benefit in that sense. The inability of the current tariff

Cargo dues and terminal handling charges recorded values significantly in excess of the global sample average result in total port costs 125% above the global average. Vessel costs at 42% below the global average offset this somewhat.

structure to reflect underlying assets and cost structures of the port system requires a significant shift. Whilst the Regulator has some ability to impact on cargo dues and marine charges, terminal handling charges are outside of the Regulators mandate. This will remain a concern and a holistic solution is required.

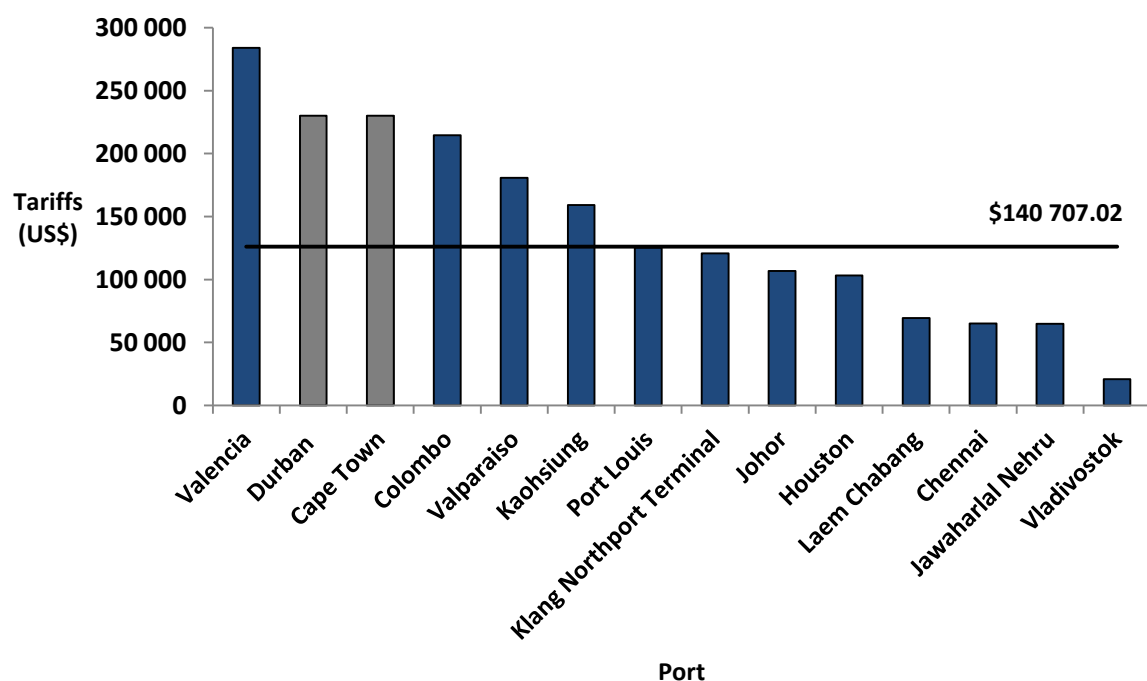
Figure 5: Container vessel costs



## 5. Terminal handling Charges (container terminals)<sup>1</sup>

Whilst the depreciation of the South African rand, as well as most developing country currencies over the last year has significantly lowered the US dollar cost of most tariffs, including terminal handling charges, cargo owners mostly pay directly in South African rand and as such. However, at an average in excess of \$230 000, container handling charges (per unitary vessel) in South Africa remain more expensive than the global sample average. On a Twenty foot equivalent unit (TEU) basis South African terminal handling charges for containers are about 63% above the global sample average. Efficiency levels in container handling remain a concern, but are an area of focus for the current implementation of the NPA's Terminal Operator Performance plan.

**Figure 6: Terminal Handling Charges by port**



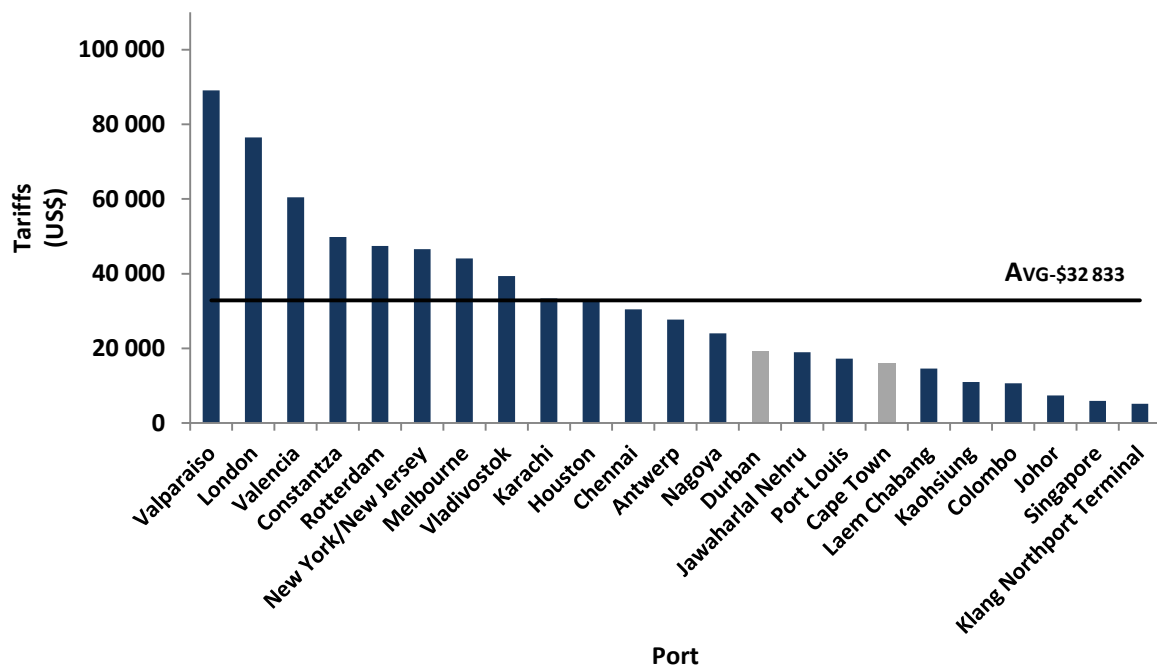
It is clear from the data that South African cargo owners face significantly higher costs than the sample average. With the bulk of South Africa's manufactured goods arguably exported through

Terminal handling charges makes up a significant portion of the total port costs faced by container cargo.

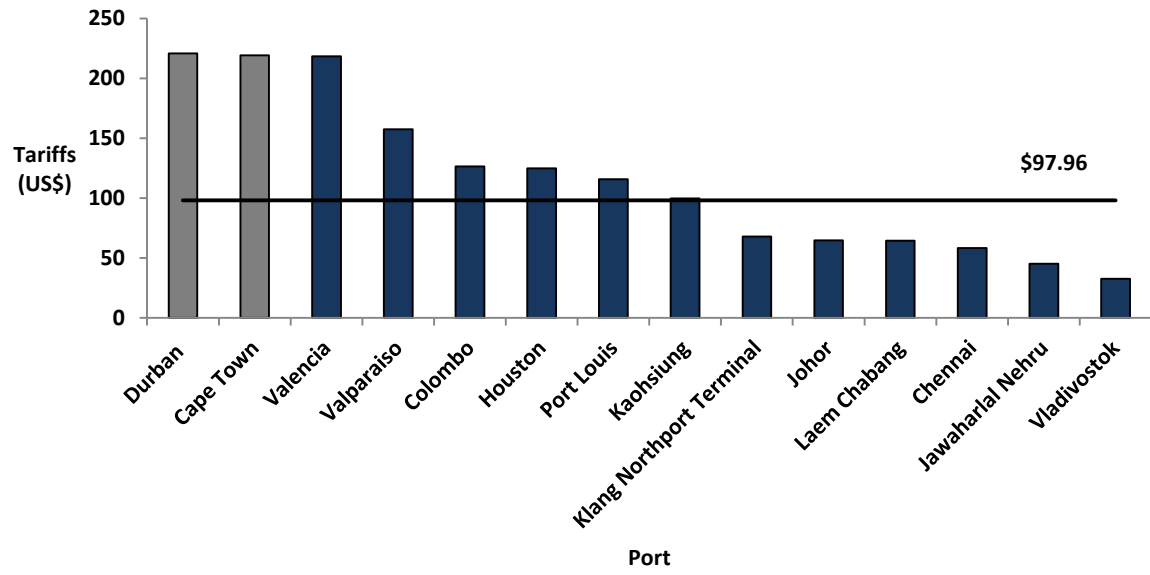
<sup>1</sup> The definition of handling charges in this study includes all costs from vessel to stack, from stack to vessel, from stack to truck or railcar as the case may be. No provision was made for overstay or other penalties or charges related to the duration that the container remained in the terminal.

containers, high costs are this is clearly contradictory to current industrial policy aiming to incentivise value addition, broadening of the manufacturing base and increasing manufactured exports. Whilst marine services remain below the global sample average, with container vessels facing costs around 42% below the global sample average, Terminal handling charges significantly contribute to above average prices together with cargo dues. Figure 7 below illustrating the below average costs facing container vessels in a South African port is clearly contrasted with figure 8 that illustrates the comparison of the port of Durban where terminal handling charges has been included.

**Figure 7: Marine costs (containers)**



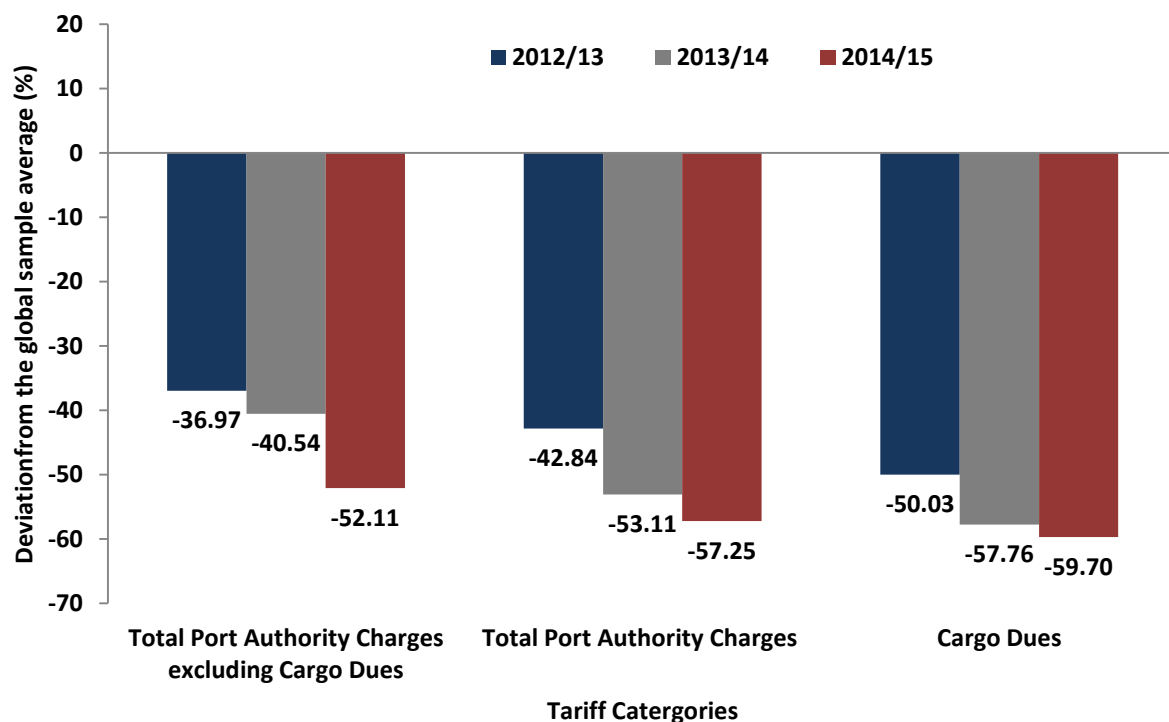
**Figure 8: Total Port costs including Terminal Handling Charges per TEU**



## 6. Dry bulk commodities remain lower than the global sample averages

Bulk commodities are charged much lower total port costs than the global sample averages. Coal (Richards Bay) and iron ore (Saldanha Bay) were found to face total port costs 57% and 52% below the global sample average respectively. The cargo dues faced by cargo owners are 59% and 45% below the global norm for coal and iron ore respectively.

**Figure 9: South African Coal Port Cost (as deviation from the sample global average)**



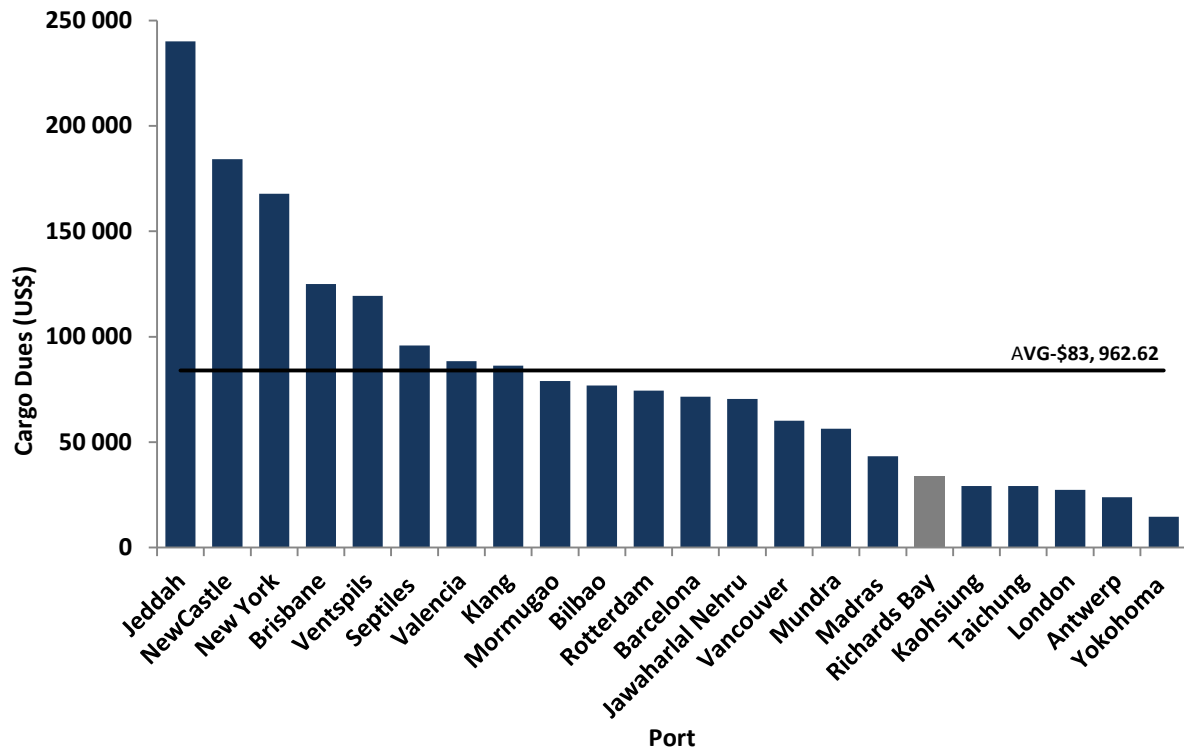
The zero tariff change on cargo dues and marine services resulted in a real decline in dry bulk port prices in 2013/14, however a slight above inflation increase in both iron ore and coal cargo dues as well as marine charges of 8.5% were well offset by the weakened rand with the resultant deviation moving further away from the global sample average indicating lower relative price levels in the South African port system.

Coal cargo dues recorded a larger discount to the global average at -59% compared to the vessel costs -52%,

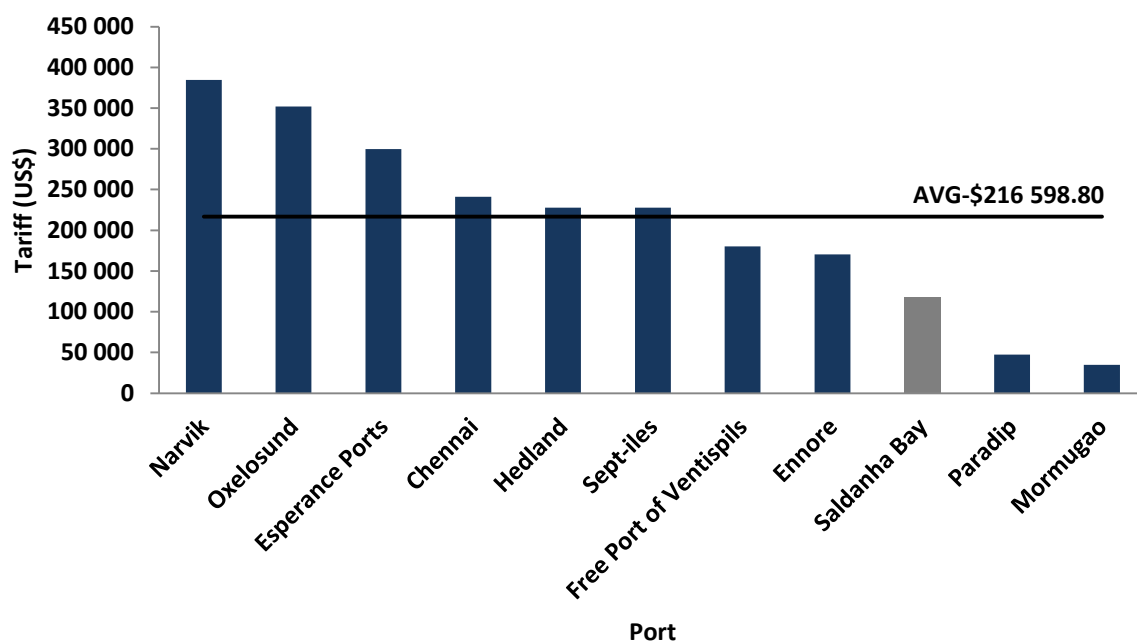
Cargo dues facing coal owners moved lower relatively to the global sample average to -59% from a discount of -57% in 2013/14 and -50.03% in 2012/13. A similar pattern emerged in the iron ore

sector (see figure 9) with iron ore cargo dues moving to –45% below the sample global average and total port costs for iron ore from –31.85% in 2012/13, –49.33 in 2013/14 and 52% in the latest study.

**Figure 10: Coal Cargo dues by port**

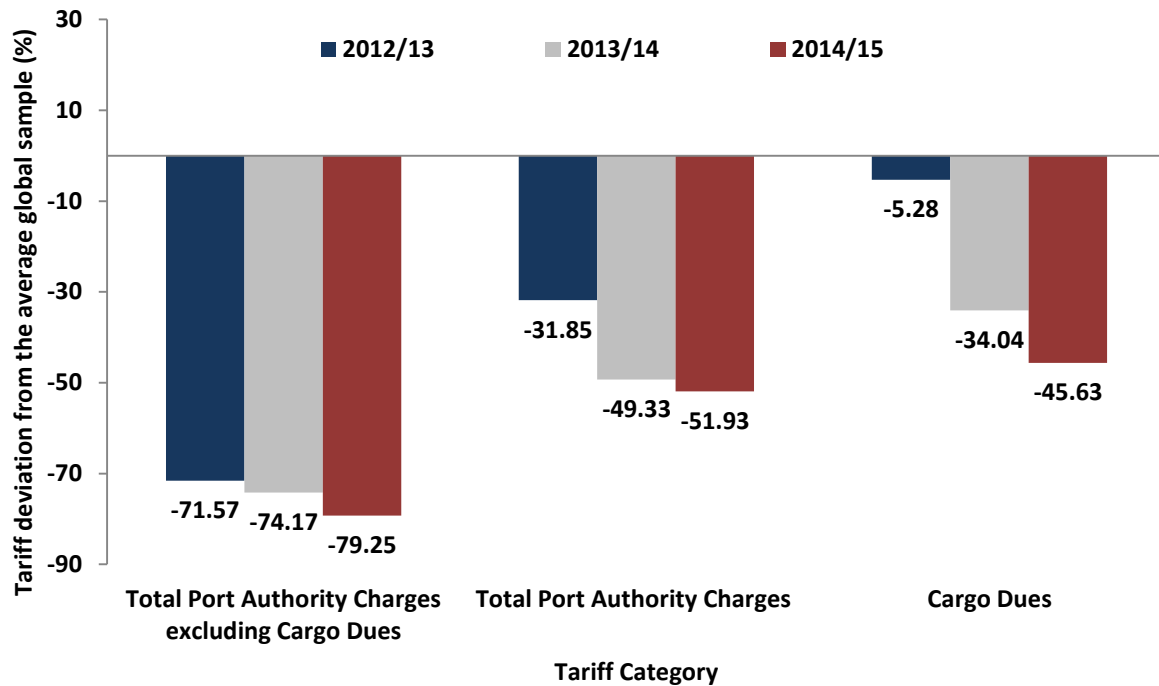


**Figure 11: Iron Ore Cargo Dues by port**

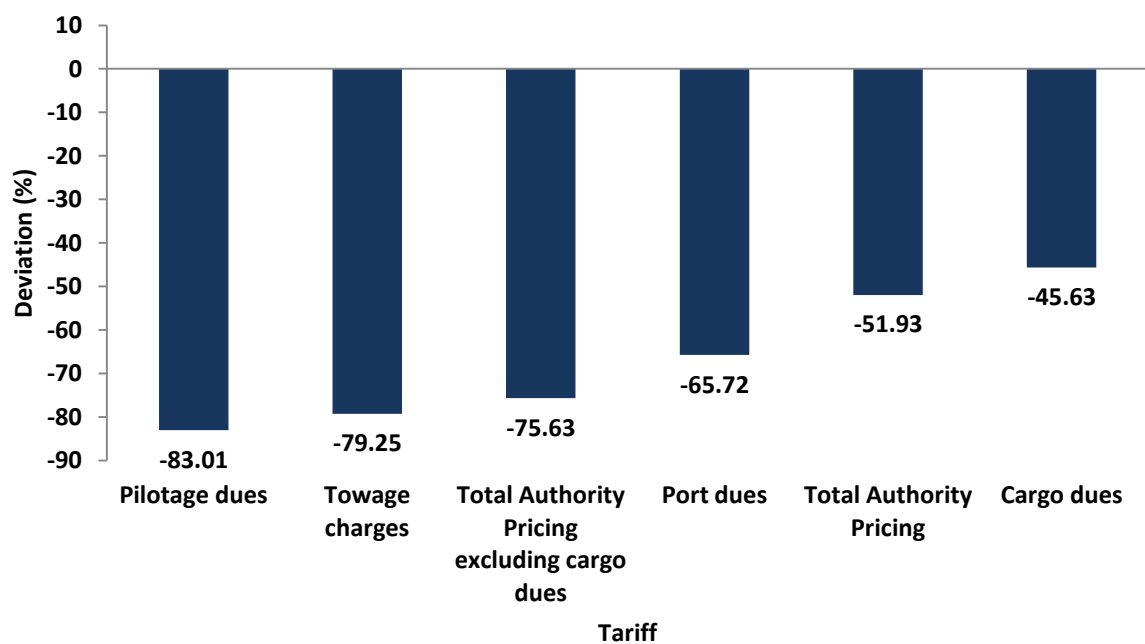


Iron Ore cargo dues recorded a discount to the global average at -45% compared to the vessel costs -79%. Whilst both coal and iron ore again recorded relative differences in the total port pricing structure, it is clear that both vessel costs as well as cargo dues remain well below the global average.

**Figure 12: South African Iron Ore Port Cost (as deviation from the sample global average)**



**Figure 13: Iron Ore port pricing components (as deviation from the sample global average)**

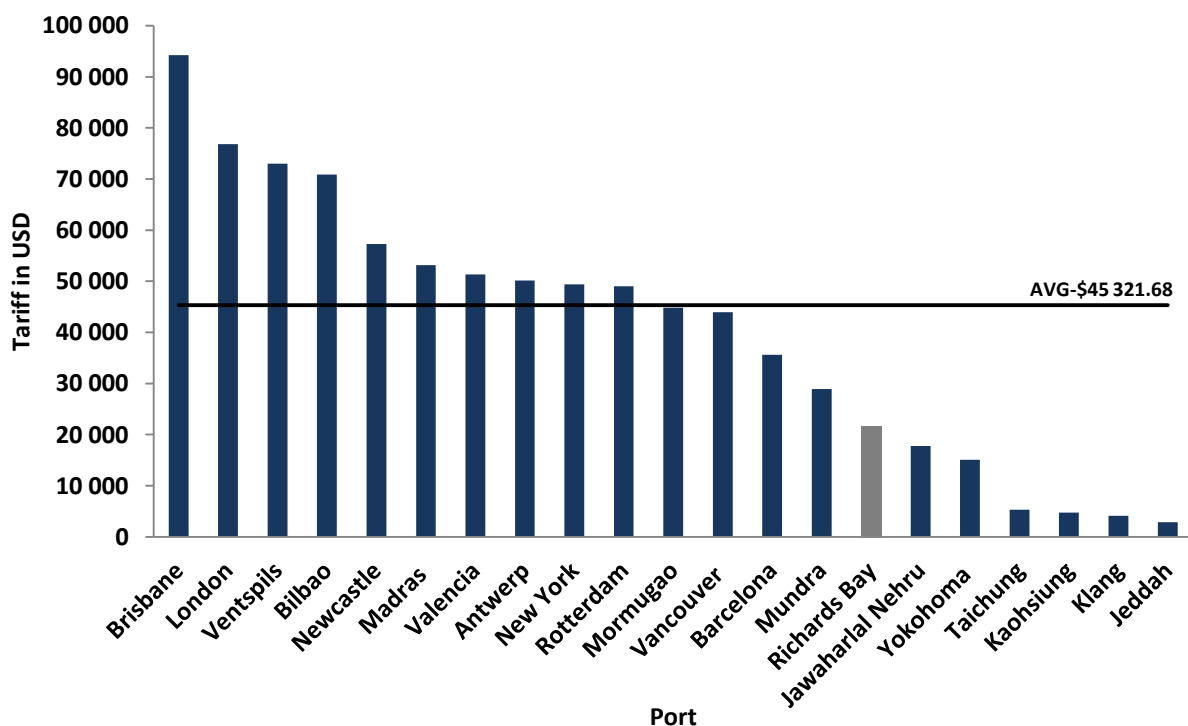




The continued low marine charges faced by bulk cargo owners exacerbate the already low cargo dues on these products. With significant discounts to the global sample averages for pilotage, towage and other port charges, the marine component, supported by the weaker South African Rand, remains low and does not reflect the underlying cost structure of the South African ports system. This must be addressed for a more balanced tariff structure.

A similar pattern is evident in the port of Richards Bay with costs facing vessel owners well below the global sample average with Richards Bay ranking 7<sup>th</sup> out of 21 ports in the sample when comparing vessel costs recording a discount of 52%. Whilst this places South Africa favourably in terms of global competitiveness, with coal mainly an exported product, some room to increase tariffs whilst not impacting on the competitiveness of the domestic manufacturing sector does exist. This should be addressed by a review of the tariff structure.

**Figure 14: Port costs facing coal vessels**

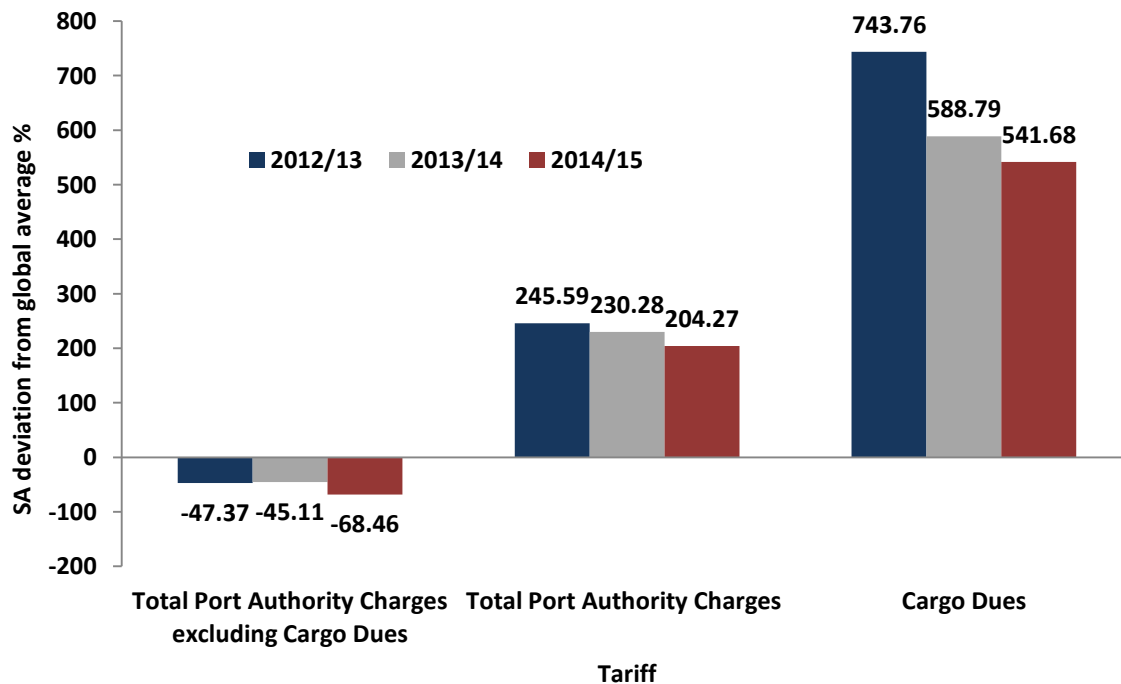


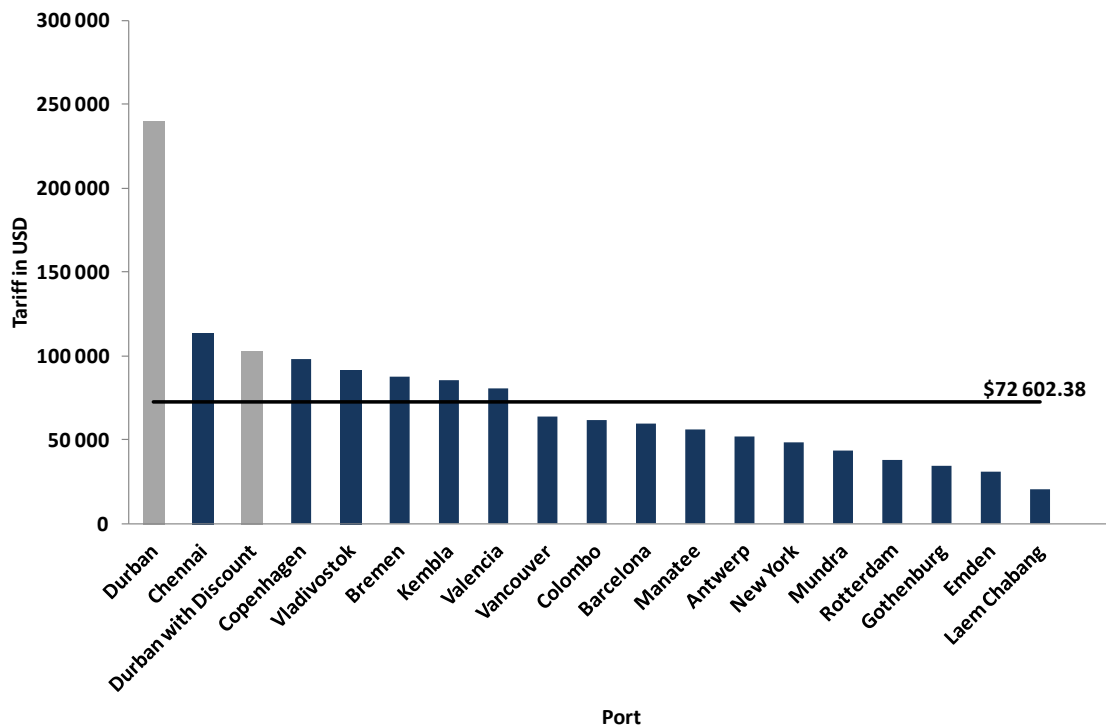
## 7. Automotive prices remain relatively high

Similar to the charges in the container sector, vehicles also face significant premiums to the global sample average. Without taking volume discounts into account, total NPA cargo dues for the vehicle sector is 541% higher than the global sample average, down from 743% two years ago. There was a 21.1% decrease in export cargo dues in 2013/14, an inflation related increase in the previous year resulting in total port Authority charges decreasing to 204% above the global sample average from 245% in the first year of the study 2012/13. This was attributable to the exchange rate movements offsetting the slight increase in marine charges and relative movements in sample ports resulting in a higher global sample average.

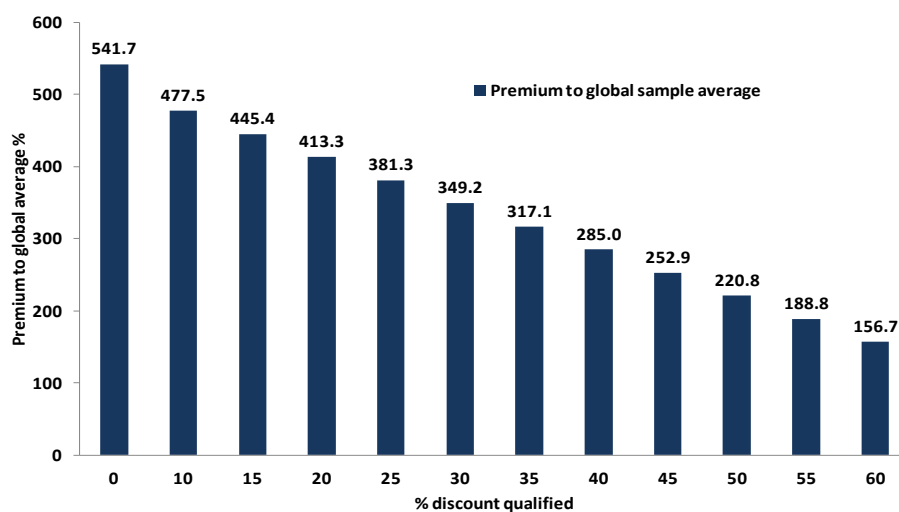
Although automotive cargo dues have been reduced somewhat over recent tariff decisions, the effect of the weakened rand is to conceal the full impact of the high cargo dues tariff. South African manufacturers and importers pay port tariffs in South African rand and receive little benefit from the dollar effect. Whilst the exporter will receive a higher rand value for dollar denominated exports, importers of vehicles will not only pay more for dollar denominated imports, but also receive no benefit related to port charges from the currency.

**Figure 15: South African Automotive port costs (as deviation from the sample global average)**



**Figure 16: Total Port Pricing (Automotives) by port**

Again, similar to containers, cargo dues on automobiles is significantly higher than the global sample average with total cargo dues on vehicles at a 541% (588% in 2013/14 and 743% 2012/13) premium to the global sample average. However, the NPA implemented an Automotive Industry Volume Discount (AIVD) which applies to importers and exporters of vehicles.

**Figure 17: Distribution of Automotive volume discount on cargo dues (as deviation from the sample global average)**

The figure above isolates the effect of both the AIVD on the overall cargo dues faced by vehicle importers and exporters.<sup>2</sup> The AIVD has volume discounts available at different levels depending on the total number of vehicles imported or exported, ranging from a minimum discount of 0% for 0-10 000 and a maximum discount for 60% for 80 001+ vehicles. In the figure above the impact of the AIVD and rebate on small manufacturers who received a smaller discount because they imported or exported fewer vehicles; and large manufacturers who received larger discounts with an extreme of 60% because they imported/exported more vehicles is apparent. An important note is that the rebate's effect is introduced after the AIVD has been calculated.

The data shows that even after the AIVD at the 60% level and the rebate, the cargo dues faced by South African exporters (\$78 738) are still above the global sample average cargo due tariffs (\$30 676, lower than the \$31 724 average recorded in 2012/13). It is clear that AIVD and rebate programs provide more benefit to larger manufacturers of vehicles, and arguably those who need the discount more i.e. small manufacturers face even higher than the sample average global costs.

The tariff premium to the global sample average paid by vehicle manufactures after receiving discounts are significant. The lower extreme where there is 0% AVID as a result of the manufacturer being small shows a premium of 541% to the global sample average, down from 743% in 2012/13 due to the impact of the lower global sample average and the exchange rate effect, while the opposite extreme where there is an AVID of 60% which is received by the largest manufacturers shows a premium of approximately 156% to the global sample average.

A concerning conclusion is that while South African cargo dues are significantly above the global sample average, even at the largest discount level, it is smaller manufacturers who are the worst affected by this anomaly. The study also indicated that a certain amount of bracket creep exists in the program as the volume brackets are not adjusted from year to year. This further reduces the actual tariffs paid by expanding manufacturers. Whilst the potential cross-subsidisation of automotives to other commodities as well as smaller to larger manufacturers remain, the current review of the tariff strategy may bring a more equitable dispensation, without disregarding South Africa's industrial policy objectives.

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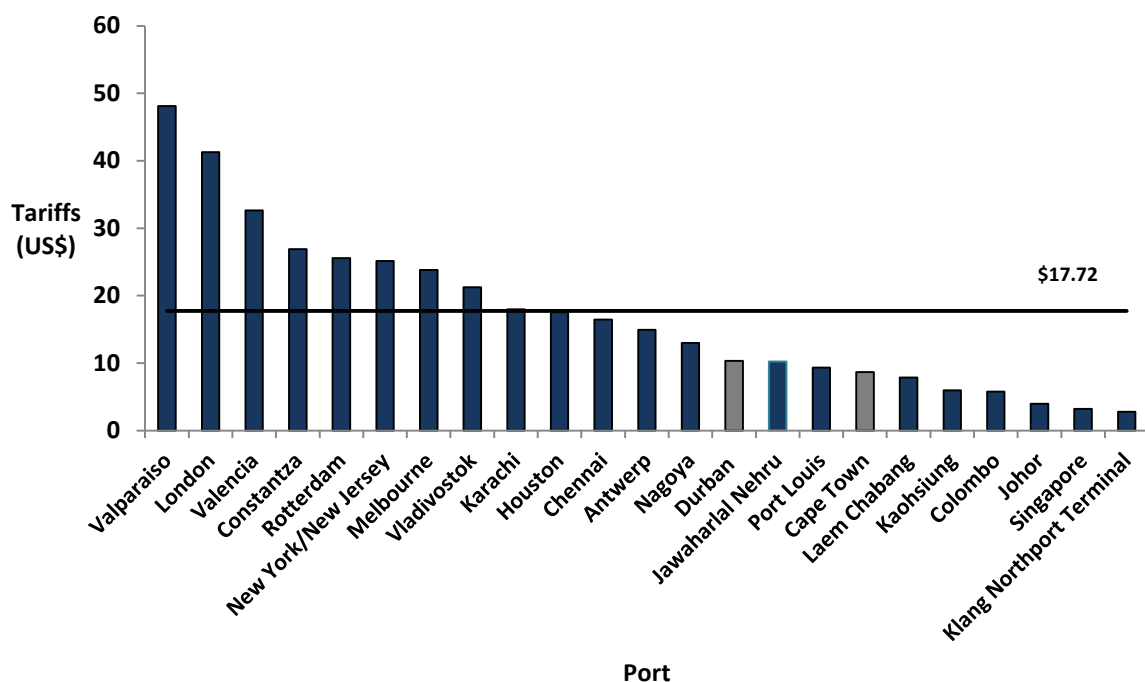
<sup>2</sup> Special assumption: The costs reflect the cargo dues on a unitary car carrier vessel visiting Durban on the 1<sup>st</sup> of April in the sample year and the full cargo belongs to a single company.

## 8. Vessel costs remain relatively cheaper

The study confirmed that all vessels face much lower overall vessel costs in South African ports than the averages in the study, ranging from 41% below the global norm in the case of containers and 79% for iron ore vessels.

Container port costs reflect below average costs for vessel owners. This is reflected throughout the South African port system

**Figure 18: Container (TEU) vessel port costs**

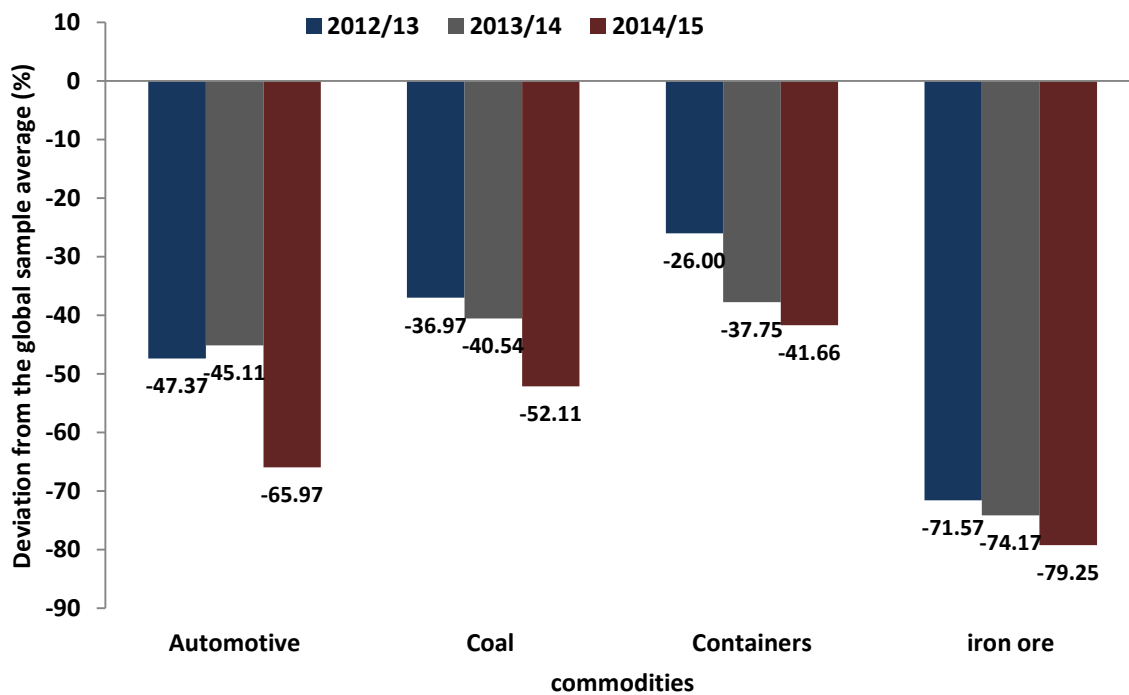


The 8.5% tariff increase allowed by the Regulator in 2014/15 did not significantly change the continued below global average position recorded for vessel costs faced in South African ports. This was fully offset by the depreciation in the South African rand as vessel costs are normally paid for in USD.

The incidence of the tariff clearly indicates that foreign users of the ports are not contributing to the overall infrastructure costs in a similar manner than they do in the sample global sample average.

All vessels face much lower overall vessel costs in RSA ports than the averages in the study, ranging from 41% below the global norm in the case of containers and 79% for iron ore vessels

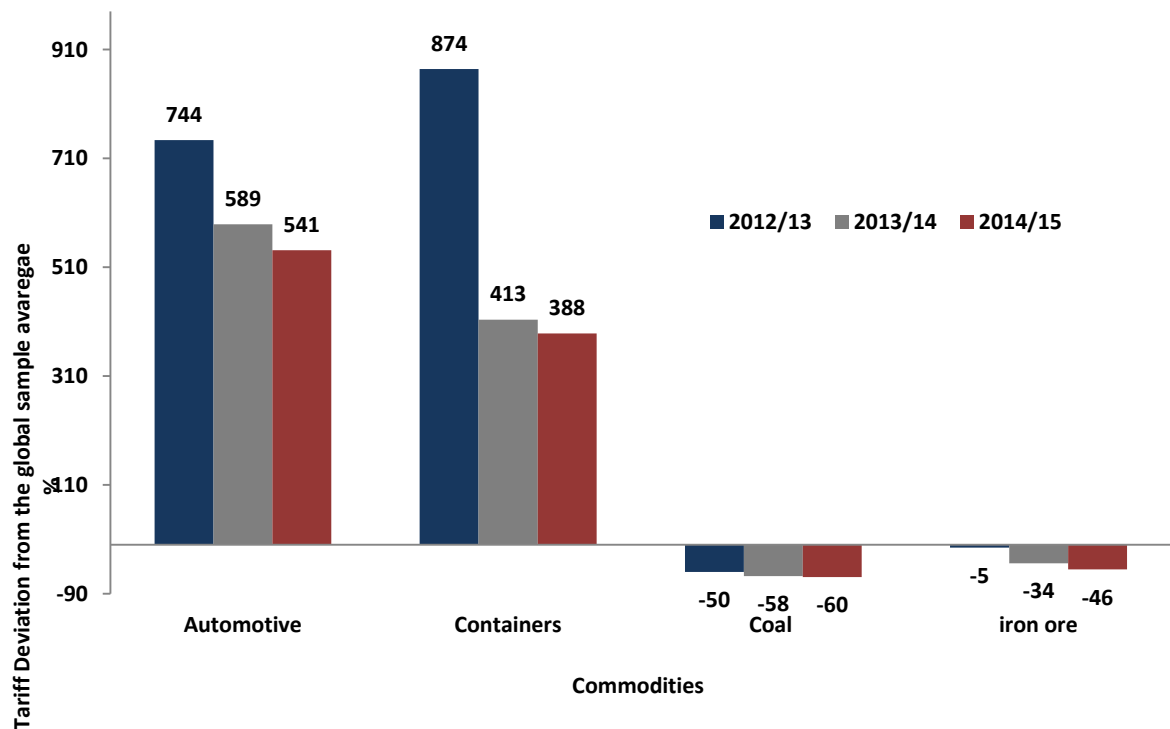
Overall, vessel costs faced by cargo owners recorded discounts of 41% in the case of containers, 68% for automobiles, 52% for coal and 79% for iron ore.

**Figure 19: South African Vessel Costs (as deviation from the sample global average)**

What was not considered in this research and is part of current research (including the NPA's Terminal Operators performance Standards (TOPS) as well as Marine operators Performance Standards (MOPS) processes) is the confluence of various costs. These include vessel delays (faced by vessel owners and operators), cost of ocean legs of transport (faced by cargo owners or logistics integrators), costs of delays into and out of port (inventory, temporary local cargo storage and truck standing time costs etc.) faced by cargo owners and logistics providers and other such costs that are occasioned by specific issues such as the market structure of marine transport providers and the port system, as well as operational and infrastructure issues in certain ports.

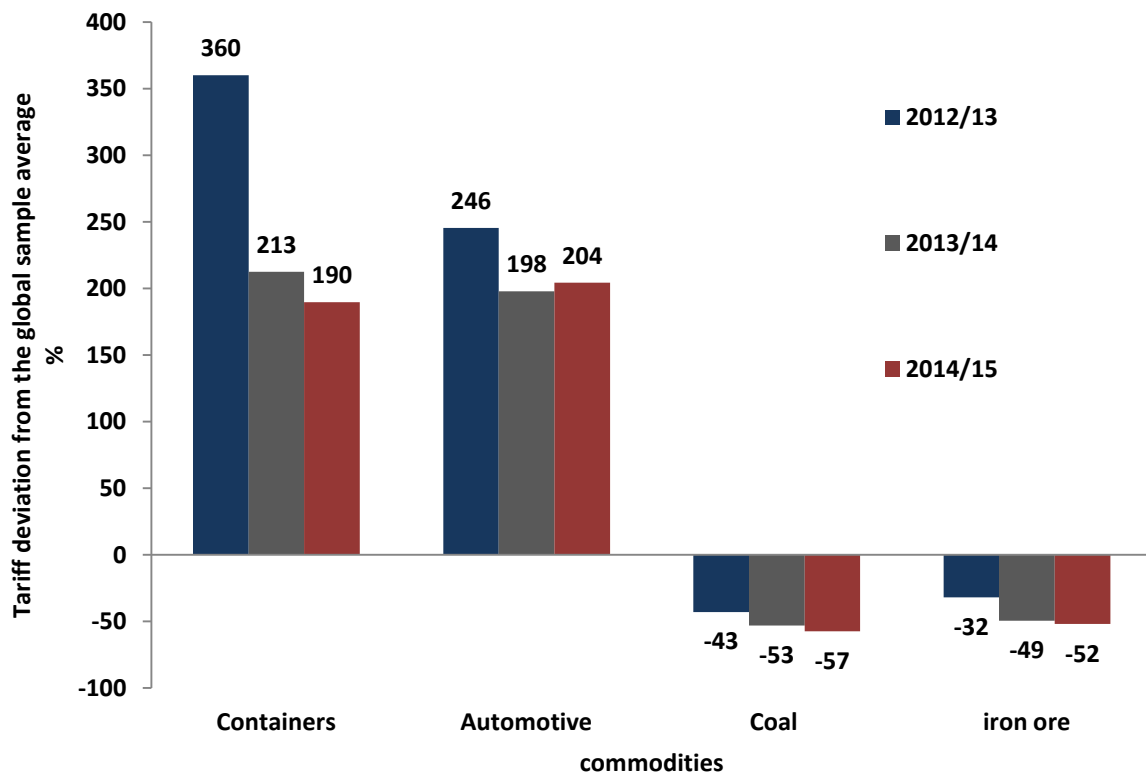
## 9. Evidence of imbalances in the port system

**Figure 20: South African Cargo Owner Costs across all four commodities (as deviation from the sample global average)**



As bulk commodities are charged much lower rates than the norm and containers and automotives are charged much higher than the norm, containers (export and import) and automotives are arguably still potentially cross-subsidising bulk exports tariffs, even more so if only cargo dues are taken into account with container and automotive cargo owners facing costs at premiums of between 541% and 388% of the global norm respectively and the bulk cargo types below the global sample average.

**Figure 21: South African total Port Costs across all Commodities (as deviation from the sample global average)**



The share of cargo dues in tariff book tariffs, (about 60%), also results in the excessively high cargo dues skewing total port costs. Whilst bulk commodities does reflect this, the impact on containers and automotives are significant with total port costs at around 200% of the global sample average.



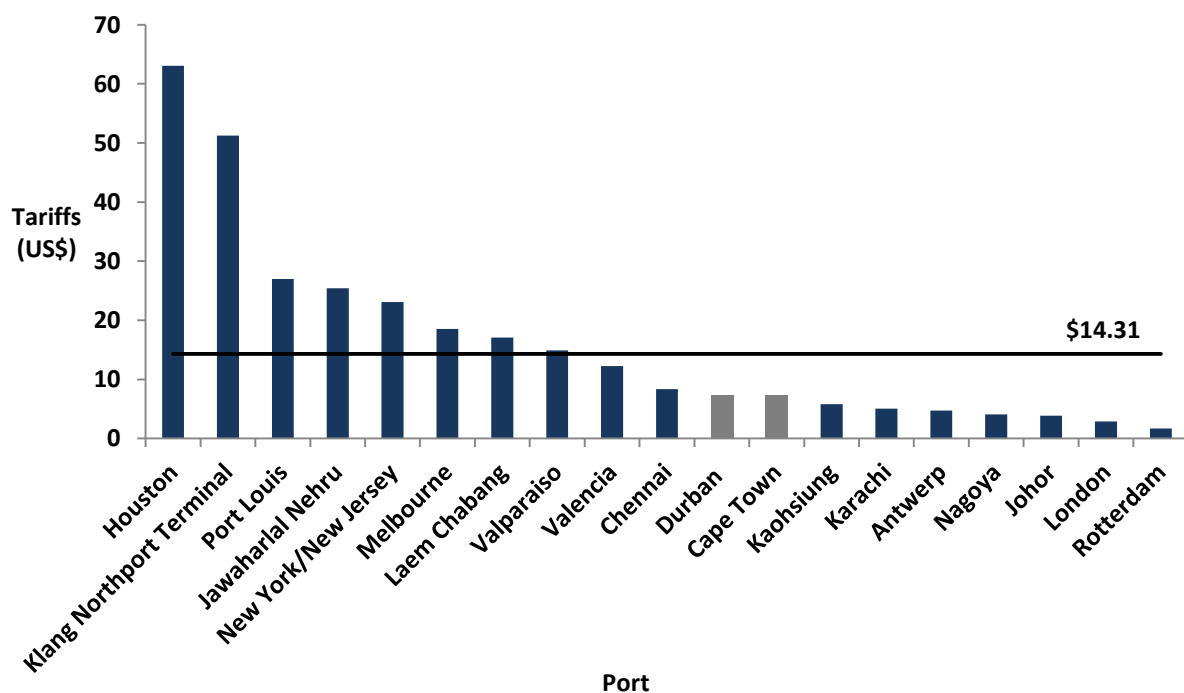
## 10. Transhipment

South African port system continues to incentivise liners transhipping through our ports with marine services dues faced by a full transhipped container below the global sample average. The cargo dues recorded for transhipped containers are below the global sample average in 2014, calculated as a discount of 48%.

The Ports Regulator stated in 2013 that *“Little statistical evidence could be found of a relationship between the tariff level and the recent transhipment volumes in the South African ports system”. The Regulator’s analysis indicated that global growth and subsequent trade volumes and the cost of freight only explain a portion of the change in the transhipment volumes in the Port of Durban between 2005 and 2012 with the bulk of the decision depending on the inherent market and infrastructural advantages of one port over another.”* (Record of decision, 2013).

Whilst the economic rationale for a transhipment friendly port tariff structure still needs to be made, it is evident that not only are cargo dues on transhipment cargo very much below global norms, vessel costs are also below the global sample average and only terminal handling charges can under the current regime, materially influence the transhipment pricing structure.

**Figure 22: Transhipment cargo dues by port**



## 11. Conclusion

- Although this has improved over the period the study has been conducted, cargo owners still face a 388% premium in 2014/15, although down from a premium of 874% to the global sample average in 2012/13. While vessel owners face costs below the global sample average (-26% in 2012/13, -32% in 2013/14 and -42% in 2014/15), the total NPA costs to users in container ports comes at a still high premium of 125% above the global sample average (similar results for the automotive sector applies) whilst the report shows that bulk commodities are charged much lower total port costs than the global sample averages.
- The depreciation of the South African rand has had a significant impact on the average tariff levels paid in the South African port sector. However, this impact does not benefit all equally. Users paying in dollar get a direct discount in rand values, while domestic users do not receive the same benefit. The comparison in US dollar thus hides the real state of play and emphasises the need for the Regulator to intervene in the tariff structure in a more direct and strategic way in order to remove the imbalances from the tariff book.
- The high levels of potential cross-subsidisation due to the imbalances in the tariff structure in the port system remain a concern. The Regulator has started to adjust the tariff book within the parameters of the Revenue Required Methodology applied in the tariff setting process. This has started to bring about some normalisation, however much more is required. To this end, the Ports Regulator is refining a tariff strategy that seeks to address these concerns. However it is positive to see the impact of the incremental pricing changes the Regulator has implemented resulting in an ever more price competitive port system.
- Due to the South African “Free on Board” (FOB) export and “Cost, Insurance and Freight” (CIF) import predominance in concluding international trade contracts, the bulk of the port charges liability lies with the South African party, South African container cargo owners continue to carry the greatest burden of transactions. In addition, through their significant contribution to tariff book revenue (46% of all tariff book revenue comes from container cargo dues) they also carry the bulk of the infrastructure costs, while also paying greater premiums over global sample averages than foreign cargo owners transhipping through South African ports (see figure 8).<sup>3</sup> This remains a concern.

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<sup>3</sup> FOB: The price of a traded good excluding transport cost, i.e. the transport costs, including port charges is the responsibility of the exporter. CIF: The price of a traded good including transport cost. I.e. the importer is responsible for transport costs including port charges.

## **Annexure A: Interpreting the results**

The process and outcomes of benchmarking port pricing is not an exact science. The global sample averages that we have defined in our studies do not represent what we should be charging in RSA ports, rather it give us some indication of the direction that our pricing should be moving in, rather than the exact absolute level of pricing. It also provides us with a reasonable indication that would allow assessment of the alignment between port policy, port pricing and economic policy. The identification of pricing differentials that exist does not automatically suggest that certain industries should be charged at a globally comparable rate. It does not suggest that certain cargoes may not be charged lower or higher rates than the global sample averages. It arguably does identify the size of the divergence between what is the stated overarching economic and development policy of the country and what port pricing reflects. It provides a reason to assess and shift port pricing in a direction that better reflects the global reality and actually aligns with South African economic structure, economic policy, industrial policy and economic development policy. It also requires that any differentials that we allow to exist in the future must result from an open engagement that includes all affected parties and is justifiable in the public interest.

That a change in indices such as either the weighted dollar price over the year (rather than fixing it at the date of the study) or some other selection of ports as a population would no doubt influence the findings to a greater or lesser extent, this influence is not so significant that it changes the outcome. A 20% differential in the dollar price will not remove a 700% price premium over a global sample average; it would merely make it less of a premium, as is evident in this report.

Amending an index or changing a sample will not remove the internal difference between the significant premiums on cargo owners of manufactured goods and the significant discounts to un-beneficiated bulk commodities. The amendment of parameters of the research will not change the fact that South African cargo owners carry the majority of the burden of infrastructure costs while foreign cargo owners and vessels receive globally competitive rates or implicit discounts. In addition, carefully selecting ports that support a particular argument in response to these numbers does not remove the reality, as an equally careful selection, can make the numbers even worse. In some cases, our pricing is too low, and in other cases too high. What they also show is that different stakeholders in the logistics system inappropriately bear the incidence of tariffs, in comparison to global practice.

As example: The trend in port pricing in South Africa, from an internal coherence (using global sample averages) perspective, appears to subsidise the industries that have lower levels of job creation and value addition in RSA. The higher job creation industries tend to be penalised. An

example is the differential of cargo dues that existed between stainless steel and mild steel prior to the Regulator's decision (although this element was one of the issues considered in that matter, it was not the basis of the decision). An industry that stopped at one level in the value addition process and then exported its product to have further value added in another country, paid roughly one quarter of the price paid by the producer that took that product and added further value inside of the country, for the same use of infrastructure. This is clearly not in line with South Africa's economic development policies, and the need for stronger alignment between different policies and regulatory regimes is critical in advancing a coherent and sustainable industrial policy. As such the current tariff structure where bulk trades also tended to be less than or close to the global sample averages, while the value added trades were significantly above the global sample averages, unless you were a foreign cargo owner merely transshipping your cargo through South African ports, is clearly not aligned with the country's industrial objectives.

This research is not intended to automatically define the levels of pricing that are appropriate and the targets that need to be set for pricing incidence, it is designed to add to the debate in reviewing and setting appropriate pricing and price incidence in the port system.

### **Sample selection**

The researchers compiled the port samples based on a number of criteria, with tariffs not considered until the very end and played no role in the sample construction process. The criteria included throughput, capacity, commodity and cargo handling characteristics, availability of public tariff information (in English as far as possible) and the ability of the port to handle the unitary vessel size.

### **Comment**

The research is therefore published and any correction, criticism and comment is welcomed. We do however ask that where parties wish to submit such, they please provide the following:

- An explanation as to why the information in the study is incorrect or inappropriately used.
- The correct information, if the information in the study is claimed to be incorrect, or a more appropriate use or exposition of information if the appropriateness or exposition of the information is questioned.
- The original public documents and or information that the "corrected" information is based on.

- The reason why an alternate view, if it is opinion-based such as the selection of different populations or indices, is more appropriate.

## Annex B: Assumptions

### 1. Container Study

<b>Vessel Dimensions:</b>		
Length	221	meters
Breadth	32	meters
Height	25.91	meters
Draft	12.2	meters
DWT	41 800	tons
GT	35 800	tons
NT	14 444	tons
Power Output	26 270	KW

<b>Standardised Ship Call:</b>				
Total TEU Parcel Size = 1,853	Landed		Shipped	
	<i>Deepsea</i>		<i>Deepsea</i>	
	Full	686	Full	427
	Empty	71	Empty	288
	<i>Coastwise</i>		<i>Coastwise</i>	
	Full	2	Full	9
	Empty	4	Empty	8
	<i>Transhipped</i>		<i>Transhipped</i>	
	Full	148	Full	148
	Empty	30	Empty	32

### Additional assumptions

- The vessel utilises the port services within normal working hours of the port, and abides by all rules and regulations of the port.
- Assume the vessel enters the berth on weekdays, except on public holidays, at 08h00 and exits the berth at 08h00. (i.e. number of hours in berth= 48hours)
- No additional surcharges, waiting fees, penalties or cancellation fees are applicable within the vessel call.
- There is no use of miscellaneous services, such as Fire & Emergency services, Fire Protection, etc.
- Port charges such as Security service fees, fresh water fees, electricity and removal of refuse, etc, where a minimum fee is not stipulated, will be excluded from the Port charges.
- Assume the Vessel is a Liner Trade which operates on a scheduled basis.
- Assume away all reductions (based on the number of calls )in the port charges offered to vessels.

- Assume the following weights of TEUs: Full= 21 Tons Empty= 2.5 Tons
- Unless otherwise specified, assume a vessel of this size will always require the assistance of two tugs for one hour.
- Unless otherwise specified, assume a vessel of this size will always require the assistance of a pilot for one hour. Shifting tariffs are excluded.
- Where no tariffs are allocated to Coastwise & Transshipped Cargoes, the Deepsea rates will be used.
- Assume one vessel call per port per month.
- Assume vessel call at non-concessionary terminals and berths.
- Where there is more than one service provider, an average of the tariffs was taken.
- Assume all information about the vessel & cargo is provided in advance in accordance with requirements of each port prior to the arrival/departure of the vessel & cargo to/from the port.
- Assume vessel needs to use the port's mooring or unmooring ropes.
- Vessel always makes use of the port's equipment.
- Assume all imported transshipment containers are transhipped within 14 days of arrival at the port.
- Assume all transshipment containers landed/shipped are foreign-going transshipment containers
- Assume all transshipment containers are shipped from the same port terminal it landed in.
- Assume one container move to load or off load containers for terminal handling charges.
- Klang Northport and Jawaharlal Nehru cargo dues and terminal handling charges are consolidated into a single charge.
- Container loading and unloading operations begins within 2hours after the vessel enters the berth and ends 2hours before the vessel exits the berth. i.e. cargo operations are completed in the 44 hours the vessel is at berth.
- No amendments have been made to reduce total handling and port authority charges of non South African ports for efficiency differentials.
- Terminal Handling Charges includes vessel to stack, vessel to truck, vessel to rail wagon, rail wagon to vessel, truck to vessel, stack to vessel as appropriate.

## 2. Automotive study

Standardised Ship Call:	
Commodity Moved	Cars
Parcel Size (tons)	3715.64+8085.32
Import (tons)	8085.32
Export (tons)	3715.64
Parcel Size (Units)	890+409
Import (Units)	890
Export (Units)	409

Vessel Dimensions:	
LOA	198m
Breadth	32m
Draft	8.6m
DWT	19 893
GT	56 439
NT	17959

### Additional Assumptions:

- Number of Days in Port: 1 Day & 8hours (32hours)
- Assume that there are no penalties, additional surcharges or waiting fees applicable within the vessel call.
- Assume the vessel utilises the port within normal working hours of that port.
- Assume the vessel will use two tugs
- Assume the vessel will always need pilotage assistance in the port
- This study is based on new automotive vehicles imported/exported at the selected ports
- Assume all vehicles imported/exported are for one vehicle manufacturing company
- The vessel is a Car Carrier vessel



### 3. Iron Ore Study

<b>Vessel Dimensions:</b>	
Length	280m
Breadth	44m
Draft	12m
DWT	180,000t
GT	95,000t
NT	n/a
Cubic dimension	147.840cu.m

#### Additional assumptions

- Iron Ore Parcel Size: 170,000tons
- Number of days in port: 1 day & 23 hours (47hrs)
- The vessel utilises the port within normal working hours of the port, and abides by all rules and regulations of the port.
- No additional surcharges, waiting fees, penalties or cancellation fees are applicable within the vessel call.
- There is no use of miscellaneous services, such as Fire & Emergency services, Fire Protection, etc.
- Port charges such as Security service fees, fresh water fees, electricity and removal of refuse, etc, where a minimum fee is not stipulated, will be excluded from the Port charges.
- Assume away all reductions (based on the number of calls )in the port charges offered to vessels..
- Assume a Vessel of this size will always require the assistance of two tugs for one hour.
- Pilotage is always required. Shifting tariffs are excluded.
- Assume one vessel call per port per month.
- Assume vessel call at non-concessionary terminals and berths.
- Where there is more than one service provider, an average of the tariffs was taken.
- Assume all information about the vessel & cargo is provided in advance in accordance with requirements of each port prior to the arrival/departure of the vessel & cargo to/from the port.
- Assume vessel needs to use the port's mooring or unmooring ropes, two mooring ropes are used.
- Vessel always makes use of the port's equipment.
- Assume the vessel enters the berth at 10h00 and leaves at 09h00 (47hours later)
- Assume cargo operations commences within one hour of entering the berth and stops one hour prior to vessel exit from berth.

#### 4. Coal Study

Standardised Ship Call:	
Commodity Moved	Coal
Parcel Size (tons)	112 586

Vessel Dimensions:	
LOA	225m
Breadth	32m
Draft	13.54m
DWT	75 122
GT	39 763
NT	25 329

#### Additional Assumptions

- Number of Days in Port: 1 Day & 8hours (32hours)
- Assume that there are no penalties, additional surcharges or waiting fees applicable within the vessel call.
- Assume the vessel utilises the port within normal working hours of that port.
- Assume the vessel will use two tugs.
- Assume the vessel will always need pilotage assistance in the port.