

# STRATEGIC ROLE OF TRANSPORT IN BRICS GROUP OF COUNTRIES AND LESSONS FOR SOUTH AFRICA

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## ABSTRACT

The Brazil-Russia-India-China-South Africa (BRICS) group of countries has as one of its goals to promote sustainable accelerated competitive advancement of developing economies. This is generally achieved through instruments such as multilateral trade mechanisms, directed institutional collaborations, and political allegiances. Understanding the strategic role of transport in BRICS will help with improved decision making relating to transport investments, individually and collectively, in these countries. This is achieved in this paper through systematic quantitative and qualitative benchmarking of both freight and passenger transport services and infrastructure. Particular lessons are drawn for South Africa as a new member of BRICS in respect of transport development strategies.

## 1. INTRODUCTION

The South African economic input-output tables show that transport is an input cost in all the industrial sectors, and particularly high in agriculture, mining, and retail-wholesale trade (StatsSA, 2013). Therefore, for South African goods and services to be globally price competitive, the transport system must be provided and maintained at improving levels of efficiency and effectiveness. Given the many possible interventions that can be implemented in the transport system for improving its effectiveness and efficiency, it is strategically important to identify and implement key transport system intervention levers that result in more returns per unit input. It is the purpose of this paper to identify such levers for South Africa within the context of fully benefiting from the Brazil-Russia-India-China-South Africa (BRICS) association. The paper, in particular, draws lessons that South Africa can learn from strategic transport interventions (both positive and negative), previously and currently implemented by other BRICS countries.

The paper relies solely on the synthesis of published information. However, necessary inferences are also made where some critical information is missing. While limiting the paper to BRICS countries has the potential to also limit strategic lessons that South Africa could draw from, it allows the country to better understand its BRICS partners and paves way for potentially improved relations. The paper also identifies further work required within the context of aiding BRICS to be more effective from transport development perspective.

## **2. BACKGROUND**

Originally formed in 2009, the Brazil-Russia-India-China-South Africa (BRICS) bloc of countries has as one of its goals to promote sustainable accelerated competitive advancement of developing economies. This is generally achieved through instruments such as multilateral trade mechanisms, directed institutional collaborations, and political allegiances. Through invitation of the BRIC members, South Africa joined the group in 2010. However, there is currently no formally binding agreement among the BRICS members (EDGE, 2012). The South Africa's joining of BRICS has not been without criticism, for example Qobo (2010) remarks that apart from peer recognition and opportunity to become globally influential, it is technically not clear why South Africa joined the group given its relatively small size, both in terms of population and the economy.

BRICS meets annually to discuss strategic issues such as (i) the continuous transformation of multilateral organisations such as the United Nations and World Trade Organisation, (ii) trade facilitation among the BRICS members, and (iii) collaboration in respect of region specific interests and opportunities. Current issues on the BRICS agenda include (i) the establishment of a development bank for developing countries, (ii) roles of multilateral institutions such as the World Bank and International Monetary Fund and World Trade Organisation's Doha round of trade talks, and (iii) Regional issues such as the tackling of Middle East conflicts, and humanitarian crises on the African continent (AllAfrica.com, 2012).

The possible establishment of a BRICS development bank is of particular importance from a transport development perspective. This bank would in particular need some guidance on how to prioritise infrastructure development, including transport infrastructure, within BRICS and other developing countries. This in turn requires a clear articulation of the role of transport in development. For South Africa, in order to maximise the benefits of being part of the BRICS, the country would need to have an informed position on key infrastructure priorities, and in the context of this paper, transport infrastructure as well as associated systems and operations.

## **3. COMPARATIVE ASSESSMENT OF COUNTRIES WITHIN BRICS**

This section of the paper compares the BRICS countries from a transport perspective with the aim of identifying key differences between South Africa and other BRICS members and their implications on transport. The planned strategic transport interventions in the BRICS member countries are also reviewed.

### **3.1 Demographics**

Table 1 compares South Africa against other countries in terms of selected demographic indicators, where all the indicators are normalised to South Africa. From the table, other BRICS countries have population significantly higher than South Africa by a factor ranging from 3 to 30. Similarly, the relative number of households in the other countries is significantly higher than South Africa. Given the relatively large household sizes in India, the relative number of Indian households is reduced. Among BRICS countries, South Africa lags significantly behind in terms of the proportion of population with university or higher education degree or certificate, even compared to India with a large rural population. This is also reflected in terms of the relative inability

of the South African economy to absorb labour (shown here in terms of employed as a % of population).

One of the implications of the relatively lower population base in South Africa within BRICS is the reduced domestic market absorption capacity, and therefore for significant growth, it is primarily reliant on export growth. On the other hand, through BRICS, South Africa has the potential advantage of having access to a large international market. However, increasing access to the rest of the BRICS market would require South Africa to produce much more efficiently in order to be competitive, including improving the efficiency of the transport system. Also, given the technical skills required to create a competitive economy are likely to be found among people with higher levels of education, South Africa will need to systematically invest in the education system to develop such skills for supporting the transport system. Failure to do so may result in reduced the capacity to leverage on BRICS membership.

**Table 1: Comparison of BRICS countries selected demographic indicators**

Benchmarking parameter	Brazil	Russia	India	China	South Africa
Population	4.26	3.19	27.22	29.89	1
Number of households	4.89	3.75	16.16	29.10	1
Urbanised population	1.46	1.28	0.49	0.87	1
Employed as % of population	2.06	1.93	2.06	2.71	1
Percentage of population with university or higher education degree or certificate	3.39	7.27	1.49	8.24	1
Urbanised population	1.46	1.28	0.49	0.87	1
Employed as % of population	2.06	1.93	2.06	2.71	1

Source: Derived from World Bank (2010)

**3.2 Economy**

Table 2 compares South Africa against other countries in terms of selected economic indicators, where all the indicators are normalised to South Africa. The South African GDP per capita is comparable with other BRICS countries, and significantly higher than that of India. This in turn is an indication that, at an aggregate level, South Africa is on par with other BRICS countries in terms of wealth. However, the relatively high Gini Coefficient (measure of income inequalities), shows that only a small proportion of South Africa’s population has access to the wealth. For passenger transport, this implies that South Africa’s population is relatively more prone to subsidised transport operations (public transport subsidies). India, for example, with relatively higher population densities and low Gini Coefficient still requires public transport subsidies. Furthermore, notwithstanding other contributory factors, subsidy revenue is as much as 35% and 60% for some of the largest Indian public transport operators Delhi Transport Corporation, and Calcutta State Transport Corporation, respectively (Jane’s, 2009). Nonetheless, public transport operations generally show that a combination of population density and public transport operational efficiency can result in fare revenue covering most of the operational costs, for example 82% for Sao Paulo’s SPTRans (Brazil), 90% for Mumbai’s BEST (India), and 100% for many operators in Hong Kong (China) (Jane’s, 2009).

Also from Table 2, the value of South African exports as a percentage of the GDP is relatively high. Also, the value of imports relative to other BRICS countries is also high. These indicators show that, relative to other BRICS countries, South Africa is dependent on the export market (second to China) and therefore susceptible to the performance of the global economy. Furthermore, the relatively high import traffic implies that the country is unable to meet its own internal consumption demand, making it susceptible to global commodity prices. From a transport perspective, this situation implies that port infrastructure and operations are fundamental to the basic survival of the country. Therefore it is imperative that South African port infrastructure must function effectively and efficiently.

**Table 2: Comparison of BRICS countries on selected economic indicators**

Benchmarking parameter	Brazil	Russia	India	China	South Africa
GDP per capita	1.06	1.93	0.33	0.77	1
Gini coefficient	0.83	0.66	0.58	0.65	1
Exports as % of GDP	0.41	0.97	0.86	1.07	1
Imports as % of GDP	0.45	0.72	1.03	0.93	1

Source: Derived from World Bank (2010)

**3.3 Transport infrastructure and operations**

Table 3 compares South Africa against other countries in terms of selected transport indicators, where all the indicators are normalised to South Africa. Among other BRICS countries, South Africa has relatively small land area coverage. All things being the same, this puts South Africa at a relative advantage in terms of the relatively lower cost required to provide a countrywide transport network. Russia, as an extreme contrast, is characterised by low density settlements that are separated by long distances and multiple time zones. South Africa can take further advantage of this through improved coordinated land use and transport infrastructure development, for example corridor-based consolidation.

Relative to other BRICS countries, only Brazil has a rail network smaller than that of South Africa. However, given South Africa’s relatively small land area, its gross rail network density is the highest of all BRICS countries. This is yet another attribute that South Africa can use to its advantage, especially with regard to internal trade flows. Similarly with regard to the road network, South Africa has a relatively denser network for improved internal connectivity. Despite the relatively small size of South Africa, transport costs as a proportion of logistics costs are highest of all BRICS countries. This is an indication of the transport network efficiencies inherent in the South African transport network. For South Africa to be competitive and leverage on BRICS, it needs to continuously unlock network bottlenecks and operational inefficiencies, for example through appropriate freight modal split, as well as freight nodal designs and connections. Currently in South Africa, transport costs as a proportion of logistics costs are estimated at 7% of GDP (CSIR, 2012).

All the BRICS countries have the advantage of access to sea ports. Direct access to port infrastructure increases the ability of a country to trade, and in fact, it has been shown that landlocked countries generally lag behind in trade than countries with access to ports (Faye et al., 2004). With reference to Table 3, only Russia has

containerised export and import traffic lower than South Africa. This may be because Russia's economy is mainly dependent on energy exports. Within BRICS, therefore, South Africa is in partnership with countries that tend to process large volumes of containerised traffic, especially China, from which it can benchmark itself in terms of port capacity planning. The added advantage to South Africa is access to an extensive coast line in both the east and western sides of the country. This is unlike China that is reliant mainly on the eastern coast. In fact, given that port cities tend to attract migrants, shown in China to be significantly fuelling urbanisation rates to the east (Sachs, 2005), South Africa can use its extensive coastal line to spread the port traffic load, and also use it to influence more optimal internal development patterns.

**Table 3: Comparison of BRICS countries on selected transport indicators**

Benchmarking parameter	Brazil	Russia	India	China	South Africa
Land area	7.08	14.17	2.67	8.00	1
Rail network size	0.90	2.76	2.02	2.94	1
Road network size	4.84	2.71	11.93	11.34	1
Volume of containerised exports	2.30	0.32	1.90	31.30	1
Volume of containerised imports	1.54	0.29	1.63	9.76	1
Number of registered vehicles	3.27	3.38	10.21	20.31	1
Registered cars/1000 population	1.60	1.67	0.11	1.07	1
% public transport trips - work trips	0.58	1.02	0.07	0.10	1
Annual petroleum fuel sales for general public	0.37	0.40	0.58	16.98	1
Fuel sales per vehicle registered	0.31	0.23	14.60	31.40	1
Expenditure on transport as % of GDP	1.15	0.60	0.17	0.83	1
Transport costs as % of logistics costs	0.19	0.08	0.75	0.30	1
Transport as % of household expenditure	0.76	0.82	1.19	0.82	1

Source: Derived from World Bank (2010)

Also based on Table 3, only India has a car ownership rate lower than South Africa. Even so, given the relatively small South African population among BRICS countries, car ownership rate in terms of cars/1000 population is comparatively high in South Africa. This implies that relative to other BRICS countries, South Africa is reliant on private transport travel, translating into relatively higher expenditure on personal travel. In fact, as shown in Table 3, apart from India, South African households tend to spend more on transport than the BRICS counterparts. Depending on household income, South African households spend between 7% and 21% of household income on transport (Statistics South Africa, 2012).

### 3.4 Overall intervention strategies

Brazil, Russia, India and China, all admit that in order to be competitive, there is scope for improvement in respect of transport infrastructure and operations. What follows are some of the key interventions currently being adopted by these countries to intervene in the transport sector.

- **Brazil** (ConstruBusiness, 2010):
  - Double the paved road network from 12.2% to 25% by 2014.

- Improved long term planning to ensure security of raw materials for building roads.
- Rail network to receive relatively more funding.
- Relocation of settlements near railways lines in order to increase the average speed of trains.
- Increased competition through increased concession of rail operations.
- Improving North-South transport network connectivity.
- Improving modal integration to achieve optimal modal split.
- High speed train connectivity between major cities at an average speed of 280km/h, including express route between Rio de Janeiro and Sao Paulo.
- Improved coordination of air transport planning.
- Expansion and modernisation of ports.
- **Russia** (World Bank, 2004; MTRF, 2011):
  - The 2030 transport strategy aims for modernisation of railways, ports, and reconstruction, and rehabilitation of road sections and supporting infrastructure.
  - Increased train speed between Moscow and St Petersburg.
  - Increased integration with the European Union with the launch of the high speed train between St. Petersburg and Helsinki (Finland).
  - Transatlantic shipping line between St. Petersburg and South America.
  - Construction of subways in many of the cities, e.g. Omsk and Chelyabinsk.
  - Addressing of the increased competition between rail and road.
- **India** (Sahoo, P. 2011; Bhattacharyya and Chakraborty, 2010):
  - Development of a strategic industrial corridor between Mumbai and New Delhi.
  - Investment in high capacity public transport networks (metros and bus rapid transit).
  - Dedicated freight corridor project, long distance cargo only railways between New Delhi and Mumbai
  - Concessions for road developments.
  - Modernisation of railway stations.
  - Expansion of the rail network.
  - Setting up manufacturing plants for rolling stock.
  - Widening of historically narrow roads in urban areas.
  - Concessions agreements for roads developments.
  - Greenfields ports development.
  - India- Myanmar-Thailand trilateral highway.
  - Jiribam-Imphal-Moreh and Tamu-Kalay-Segyi line linking with New Delhi.
- **China** (APCO. 2010; APEC, 1999):

- Gradual reduction of reliance on fossil fuels.
- Reduction of transport emissions.
- Implement high capacity public transport networks.
- Prioritisation of terminals and berths for handling energy cargo, containers and raw materials.
- Upgrading the standards of navigable channels in accordance to meet requirements of 1000 ton vessels.
- Computerisation of port operations.

The envisaged interventions are responsive to the specific gaps identified in the respective countries. The interventions are inclusive of infrastructure (new infrastructure, modernisation, maintenance, and expansion), systems (institutional reforms, planning targets, and regulations), as well as operations (implementation of efficiency measures). The transport interventions envisaged in the other BRICS countries are similar in many respects to interventions contained in 1996 the White Paper on National Transport Policy (DoT, 1996), Moving South Africa Action Agenda (DoT, 1998), National Transport Master Plan (DoT, 2009), Public Transport Strategy (DoT, 2007), the National Development Plan (NPC, 2011), and several other strategic planning documents. The key differences with other BRICS countries are likely to stem out from implementation of the plans.

#### **4. LESSONS FOR SOUTH AFRICA**

In its current form, BRICS appears to be more of a dialogue platform than a trade bloc. It is in this light that South Africa envisages using its BRICS membership to strengthen its position in global politics, and also strengthen South-South relations through improved trade relations (GCIS, 2012). Furthermore, South Africa would like to use the platform to increase the participation of the African continent in global trade, particularly with regard to energy, information and communications technology, rail and road infrastructure, agriculture and food security (GCIS, 2012), all of which have an interface with the transport domain.

South Africa must use its BRICS membership to leverage on its strengths and address its weaknesses. From the perspective of leveraging its strengths, the 2011-2012 World Economic Competitiveness Report (WEF, 2011) identify South Africa's strengths as (i) quality of institutions, (ii) business sophistication, and (iii) quality research institutions. South Africa can use these specific strengths to set up dedicated institutions for implementing plans as well as monitoring the effectiveness of the implementation process for further refinement of the plans. The key weaknesses identified are: (i) poor labour relations, (ii) poor university enrolments, (iii) and deteriorating infrastructure, and (iv) poor levels of security. From a transport perspective, South Africa needs to:

- Ensure that there is a world class system for training transport professionals in order to deal with the ever increasing complexities of the transport system that must be globally competitive.
- Trade unions, particularly in the transport sector, must be resourced in order to respond to the modern sectoral challenges. For example ensuring good quality continuous development for members.

- A more systematic safety and security plan in the transport sector must be formulated and implemented.

Learning from the successes and failures of other BRICS members in respect of the above matters must be on South Africa's agenda when it engages the other BRICS members.

## **6. CONCLUSIONS**

Transport is a significant component of trade related costs as well as the overall cost of living. Therefore an efficient and effective transport system is essential for any country's global competitiveness. Transport in particular will play an important role in the achievement of one of the primary goals of the Brazil-Russia-India-China-South Africa (BRICS) bloc of countries of promoting sustainable accelerated competitive advancement of developing economies. The paper benchmarked South Africa against other BRICS members from a transport perspective and showed that:

- South Africa's population base is relatively low, and therefore has relatively diminished domestic market consumption, and therefore for significant growth, it is primarily reliant on export growth. Increased access to the rest of the BRICS market would require South Africa to produce much more efficiently in order to be competitive, including improving the efficiency of the transport system. The technical skills levels in South Africa also need to be developed in order to be on par with the rest of the BRICS members. This is especially essential for developing a transport system that has ever increasing complexities associated with the need to be globally competitive.
- While South Africa as a country is wealthy relative to other BRICS members, it has the worst income disparities. This implies that passenger transport subsidies may be a permanent feature in the country's transport system.
- South Africa's wellbeing is fundamentally dependent on exports and imports and therefore on the efficiency of the ports.
- Many of the strategic transport interventions that other BRICS countries are implementing are similar to what is planned for South Africa. It is important that South Africa learns from the other BRICS members (both successes and failures) in respect of the implementation of these transport interventions.

## **7. RECOMMENDATIONS**

In the light of the baseline review undertaken in the paper, it is recommended that a more structured approach be developed to systematically inform a transport development agenda for BRICS. This will in turn assist BRICS members to effectively learn from, and assist each other in the quest to ensuring global competitiveness of the group.

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