

Comparative Analysis of Infrastructure PPP in BRICS Nations

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Abstract. PPP (Public-private partnership) model has seen a boost in the past decade. With the government machinery straitjacketed due to deficits, red-tape and prevalent bureaucracy, partnership with the private companies is being used for improvising infrastructure networks. The model enables risk sharing among the partners with the government getting the ultimate control of the asset. Among various factors that contributed to the resilience during recession, investment in infrastructure was a significant one. The emerging markets (EM) of Brazil, Russia, India, China and South Africa (BRICS) intend to develop the infrastructure segment as a means for better services, reduction in unemployment levels and catering to the rising needs of a burgeoning population. Each country aims to provide an amicable investment climate through various means to both domestic and foreign players.

Keywords: private participation in infrastructure, public-private partnership, BRICS nations

1. Introduction

It is widely agreed that the BRICS (Brazil, Russia, China, India and South Africa) – five of the world's largest emerging economies – have massive growth potential. Under the right conditions, the combined economies of these five could be worth more in US dollar terms than the G6 (Germany, France, Italy, Japan, UK and the US) by 2041¹. A PPP deal may be in the form of a service contract, management contract, lease, concession, Built-Operate-Transfer (BOT) and Divestiture. PPPs may be complex, demanding and time consuming but under the right conditions and the right sectors, they can offer significant benefits to government, private sector and consumers. They have generally been more successful in sectors such as ports, telecommunications, transport, and eco-tourism projects than power and water. For PPPs to be successful, governments need to undertake thorough feasibility studies that address the issues of affordability, value for money and risk transfer². A PPP may encounter risks like cost over-run risk, exchange risk, force majeure, political risk, operational risk, regulatory risk and market risk. Each country may pose a different risk to the projects undertaken within its boundaries. The success of these projects would largely depend on the country's ability to handle such risks and minimize interruptions to the projects. Moreover, these risks will vary with sectors employed. E.g., there may be a high level of market or demand risk associated with a toll highway.

Our paper tries to bring out how the Private Participation in Infrastructure (PPI) has evolved in the BRICS nations in the last decade. The paper tries to discover the lacuna and risks in the environment that encourage or impede growth in various sectors as well as spots opportunities for development.

2. PPP in BRICS Nations

2.1. Brazil:

Brazil is abundant with natural resources like Bauxite, iron ore, natural gas and oil³. Large government debts and economy deficits in 1990s gave way to private participation in major activities. The Brazilian

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Privatization Program led to privatization of 33 companies and increment in the investment opportunities³. Distinction between Brazilian and foreign capital has been blurred to integrate the operations of regional and national players.

2.2. Russia (Russian Federation):

Russia provides additional features to project structure like open amount contracts under Russian law and short term supply contracts unlike long term in the projects. In the Russia Federation, only 8 major regions (Moscow, St. Petersburg, Nizhny Novgorod, Tatarstan, Kaluga, Sverdlovsk, Krasnoyarsk, Novosibirsk) are actively exploited by foreign investors⁴. Back in 2003, investment in projects consisted of oil and gas, mining and telecommunication. By 2007, the portfolio expanded to include infrastructure, power, transportation, pulp and paper and industries. A number of these and additional sectors like Pharmaceuticals, Waste Management etc. require immediate attention.

2.3. India:

PPP model was introduced in India through telecommunications, then ports and roads⁵. However, the flow of foreign funds post liberalization, was largely in the form of short-term portfolio investments rather than long-term foreign direct investments (FDI), required for financing infrastructure projects. Large scale reforms were implemented to attract private players to the infrastructure sectors of power, telecom, roads, oil and shipping.

2.4. China:

Late 90s saw an influx of foreign investments following sino-foreign joint ventures in China. Many of the projects (Laibin B, Meizhouwan and Chengdu Water Treatment, for example) were wholly foreign owned, as opposed to largely Chinese ownership projects developed after this period as a result of renegotiation of contracts. Earlier projects were mostly financed through shareholder loans unlike the present where special purpose vehicles (SPVs) are forming part of mainstream projects. However, emphasis on credit and risk assessment changed the scenario for foreign banks which currently find themselves at a level-playing field with their Chinese counterparts when pricing project loans. Currently, China rides on a new wave of urbanization and leaves all nations behind as world's largest construction site⁶. There are plans to increase spending in power, water and urban transportation. By 2015, more than half of Chinese population would reside in urban areas.

2.5. South Africa:

South Africa has the greatest cumulative experience of public private partnership in development for implementation at national or provincial level, and 300 projects at the municipal level, since 1994². The governments of South Africa and Mozambique signed in 1996, one of the initial contracts, a 30-year concession for a private consortium, Trans African Concessions (TRAC), for N4 toll road from Witbank, South Africa to Maputo, Mozambique on BOT basis². PPI has been dominated by telecommunications with 64% of investment during 1990-2000 and one of the reasons for this is its short payback period. Projects are seen to have been almost entirely funded through equity.

2.6. Investment in Infrastructure:

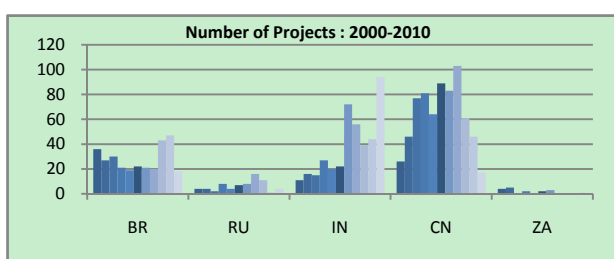


Fig. 1: Number of Projects (PPI) : 2000-2010

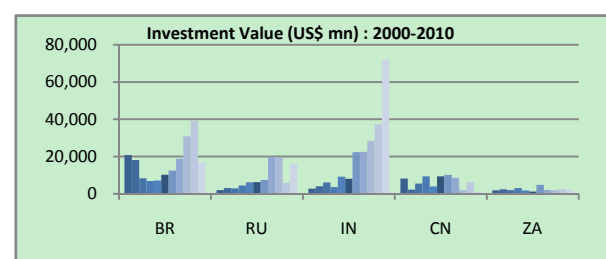


Fig. 2: Investment Value (PPI) : 2000-10



Fig. 3: Annual GDP Growth Rate

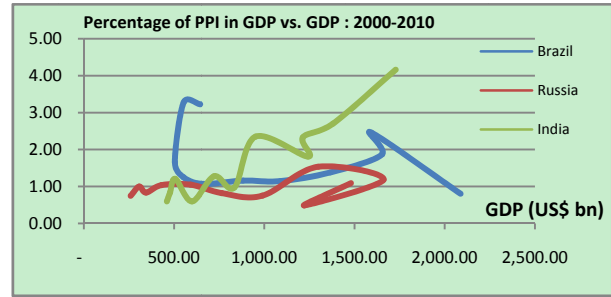


Fig. 4: Percentage of PPI in GDP vs GDP

These graphs (fig. 1,2) indicate the PPI trends in BRICS nations. In countries like Brazil and India, the increase in investment value of the PPIs has been sharp, whereas in other BRICS nations the increase has been gradual with little fluctuations owing to idiosyncratic factors. In the years 2009-10, other than India, all other BRICS nations have experienced a fall in the PPIs, owing to the global economic meltdown.

South Africa seems to be lagging behind other BRICS nations, but its investments in PPIs have been gradually increasing over the years.

The GDP growth rate of OECD (Organisation for Economic Co-operation and Development) and BRICS nations has gone down during the recent economic crisis. Among the BRICS, other than India and China, other countries had a negative GDP growth rate. The graph indicates that the percentage of PPI investments generally move in tandem with the GDP. During the recession period, the percentage fall in PPI investments was more than the fall in GDP. This was the trend in most BRIC nations except India, as India was not affected much due to the crisis.

2.6.1. Sectorial Classification

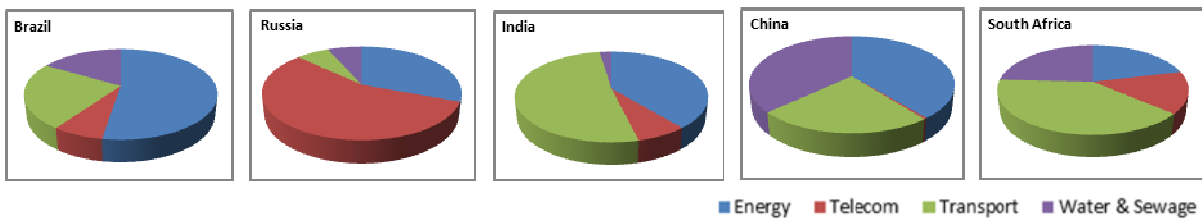


Fig. 5: Sectorial Classification (PPI)

The PPI investment among BRICS nations seems to be concentrated in energy and transport sector. This is due to the abundant unexploited natural resources in these emerging economies. E.g.: Recently, oil fields have been discovered in Brazil, which has led to more investments in the energy sector⁵. Telecom seems to attract the private players in South Africa and Russia. E.g.: Airtel's interest in South Africa and its recent acquisition of Zain Telecom seems to justify this.

Infrastructure Indicators (as % of Population)

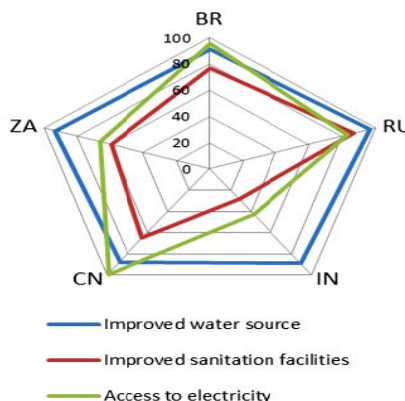


Fig. 6: Infrastructure indicators

2.6.2. Infrastructure Indicators

Among the infrastructure indicators, Brazil and Russia have scored high, followed by China and South Africa. In factors like access to electricity and sanitation facilities, India ranks the least among other BRICS nations. Hence, in countries like India and South Africa, there is lot of scope for private investments in these sectors.

Table 1: Infrastructure Indicators -<http://hdrstats.undp.org>, <http://ppi.worldbank.org>

Categories(2010)	Brazil	Russia	India	China	South Africa
Income Category	Upper middle	Upper middle	Lower middle	Lower middle	Upper middle
GNI per capita (US\$)	5,910	7,560	9,50	2,360	5,760
Projects reaching financial closure	485	332	513	949	33
Rankings: Ease of doing business	126	120	132	91	35
Rankings: HDI	75	71	134	92	129
Median Age (yrs)	28.9	38.5	25.9	35.2	24.7
Electric power consumption (kwh per capita)	2,008	5,785	480	1,781	4,847
Projects cancelled or distressed (% of total investment)	1%	0.9%	1%	4%	1%
Type of PPI with largest share in investment	Concession	Greenfield project	Greenfield project	Greenfield project	Greenfield project

Higher electric power consumption (table 1) indicates greater need of infrastructure projects in power. The demographic profile of Russia is not very favourable with a declining working population.

3. Risks involved

3.1. Country Risk:

South Africa encourages the participation of local players by pursuing its goals of black economic empowerment (BEE), an initiative to provide better opportunities to the indigenous black population in lieu of the long regime of apartheid. The effect of this is reflected in additional costs and time involved in the selection process. Companies are seen to circumvent the law by appointing ‘black’ directors with the management still in the hands of the ‘white’. The political environment is seen as stable. However, legal and regulatory frameworks need to be improvised. Poverty is a major deterrent with UNDP estimates of 42.9% population living under \$2/day. Instability in Zimbabwe has led to high influx of refugees into Africa creating added pressure on the strained resources. Moreover the HIV/AIDS statistics do not present a rosy picture. Both Brazil and Africa’s productivity is hampered by widespread unemployment, abundant piracy and high crime rates¹. The nation also faces an acute shortage of skilled workforces across sectors and widespread illiteracy.

3.2. Regulatory Risk:

In all these countries, regulatory manning done by government is not seen an impartial solution as government becomes both the hunter and the hunted. Russia presents limited foreign exchange legislation, discrepancy in tax structure and law implementation which makes it difficult for business. The law enforcement for infrastructure in China is also not in place and the government intervention leaves little opportunity for fair trade. Free market does not exist and regulatory bodies are not transparent in this non-competitive, monopolistic environment. Security law in China prohibits mortgage of future or after-acquired property in buildings, a problem for lenders. Few regulations provide the basis for future earnings security but they have not been adequately addressed.

3.3. Industry Risk:

In Africa, state-owned infrastructure players like Transnet, Prasa and Eskom have dominated the market for a long time. Brazil has a large hierarchical public sector and an over-regulated labor market¹. Also, there

is a large population of around 11mn engaged in informal businesses evading taxes and employing unregistered workers in the country. In India, risks associated with land acquisition affect project schedules⁷. Also, most road projects for construction and maintenance cover short length (less than 100km) discouraging foreign investors. There are acute constraints in cargo handling capacity of ships despite increase in investments due to excessive demand. Rapid urbanization and underinvestment has brought Indian cities under environmental hazards. In China, infrastructure is largely controlled by the government with the private players participation limited to few fields.

3.4. Population Demographics Risk:

Brazil has a relatively young population with median age of 28.9 years (table 1). Birth rate is expected to fall and in the next 10 years, Brazil will for the first time have a substantial number of elderly and older middle-aged consumers. Proliferation of the Amazon forests in the Northern and central areas leaves particularly north east where substantial growth has been observed¹. However, the emergence of the middle class in Africa and Brazil has improved purchasing power and created demand opportunities for products and services.

3.5. Economic Risk:

Projects in Brazil have been delayed due to liquidity crunch. Local capital market is weak and there is high reliability on the foreign markets. With Brazil's sovereign debt upgraded to investment grade by S&P in 2008, the condition is improving⁸. Long term foreign capital is difficult to obtain due to inherent risks as well as exchange risks involved. The Russian economy is highly dependent on the oil structure making itself vulnerable to fluctuations in the market. In China, there are uncertainties related to currency risk, market sentiments and tariffs paid that need to be dealt with better to see the PPI model grow.

In India, various states are debt-ridden and may not be in a position to sponsor projects with the private sector. International commercial banks have low participation in sponsoring these projects due to mismatch in the debt requirement period (15-20 years) and the international bank payback period (7-10 years)⁹. There have been proposals on utilizing bond financing, forex reserves and Qualified Institutional Placements (QIPs). Project approval window may extend from few days to few years. Also, sector specific policies and regulations may pose hindrance and cause slowdown.

The ability to reduce foreign exchange risk will determine a countries attractiveness of private foreign currency funding for infrastructure. Large exchange rate volatility in countries like Africa has been a deterrent to foreign loans. Strengthening of rouble has decreased capital outflows and is positive for domestic investments in Russia. However, exchange rate risks persist.

4. Opportunities

BRICS nations are keen to capitalize on renewable energy. The World Bank's Clean Technology Fund was planning to invest US\$85mn in renewable energy (esp. wind energy) and co-generation projects in South Africa¹⁰. With increase in oil exports from 2010, Brazil is likely to become a major oil power in Latin America. Being one of the leading producers of hydropower, the country presents prospects for infrastructure growth in the power sector¹. However, capacity of the power plants must rise by more than 40% during the next 10 years to cater to the industrial and domestic needs. 'Growth accelerating programme' in Brazil, has reached in 2nd phase (PAC 2), whereby the investment plan for the country has been laid out. It is believed that some US\$ 588 billion will be spent on energy projects¹¹. There is also emphasis on improved housing and water essential for human development. FIFA World Cup 2010 was a major driving force for infrastructure growth in Africa. FIFA World Cup 2014 and Olympics 2016 in Brazil is expected to bring ample infrastructure investments to the country. In India, the wide disparity between demand and supply of power brings out opportunities for selling power generated through long-term contracts directly to large consumers. In Russia, opportunities lie in aiming at modern federal and regional legislation to stimulate investments from foreign and domestic players. Russia's large base of natural resources will provide a strong foundation for foreign investments and export growth over the long term. The government has brought into effect reforms to tackle red-tape, restructure banking system and develop competencies apart from oil. China

presents one of the largest avenues for infrastructure growth. It would be facilitated by Chinese banks are cash rich and have the appetite to lend. They are expected to be major players in these upcoming projects in China.

Investment in infrastructure though the Government Employees Pension Fund will see an increment in infrastructure investment in all these countries. In order to wean away corruption, countries should ensure strict adherence to 'Integrity Pact' where all bidding and implementation procedures would be transparent and free of bribery. Post-recession, there has been a significant reduction in corporate taxes in Brazil and Russia attracting foreign investors¹². This needs to be reinforced in all sectors which need better FDI. Government should encourage PPP in sectors like water, solid waste management and housing infrastructure. These PPPs would provide proper structure to the projects and create effective financial models for the system working towards achieving goals of the nation.

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