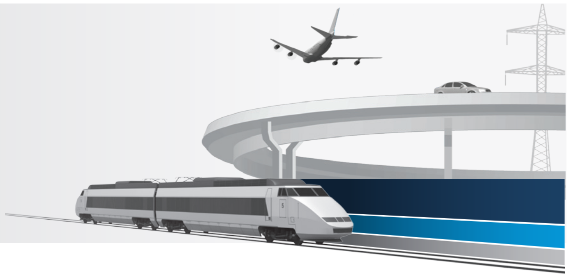
Brazil: Corajoso e bonito



Andrew Greenup, Deputy Head of Global Listed Infrastructure | August 2017

Brazil has many social, political and economic challenges. Infrastructure investment is viewed as part of the solution.

As Brazil slowly emerges from its economic depression, risks to traffic and earnings forecasts for infrastructure assets are to the upside.

New greenfield projects, privatizations and distressed asset sales are creating a large pipeline of investment opportunities for domestic and foreign players.

These significant growth opportunities do not come risk free: political scandals, 2018 elections, concession uncertainty and a slow legal system.

I have just spent a week in Brazil visiting infrastructure companies, assets, regulators and government in Curitiba, Brasilia and São Paulo. The following research provides an overview of Brazil's infrastructure and the listed companies involved; and looks at the future prospects for its toll road, airport and railway sectors.

State of play in Brazilian infrastructure

Everything is big in Brazil; the population, land mass, rivers, jungles, cities, political scandals, football, inflation - as well as its infrastructure needs. The World Economic Forum's (WEF) *2016-17* Global Competitiveness Report ranks Brazil's infrastructure 72nd out of 138 countries. Within Latin America, Brazil's infrastructure is slightly above average, but well behind Chile and Mexico.

Country	Infrastructure rank globally (out of 138)
Chile	44
Mexico	57
Ecuador	71
Brazil	**72**
Colombia	84
Argentina	85
Peru	89
Bolivia	102
Venezuela	121

According to the WEF, Brazil's telecommunications infrastructure is strong but its roads, airports, ports and railways are very poor. To be fair, Brazil's unique geography creates many infrastructure challenges.

Brazil's infrastructure ranking by category (out of 138)	
Quality of overall infrastructure	116
Quality of roads	111
Quality of rail infrastructure	93
Quality of port infrastructure	114
Quality of air transport infrastructure	95
Available airline seat kilometers	12
Quality of electricity supply	91
Mobile – cellular telephone subscriptions / 100 pop	54
Fixed – telephone lines / 100 pop	48

Source: WEF Global Competitiveness Report 2016-17.

Brazil has very large infrastructure needs which must be met to enable it to improve its productivity and prosperity. Importantly, within the country it is widely accepted that infrastructure development is part of the solution to the country's social, political and economic challenges.

Brazil's infrastructure sector suffers from high regulatory, political and legal risks. Opaque concession extension, renewal and re-auction processes have caused significant uncertainty for private sector operators. Contract rebalancing from demand risk-sharing mechanisms too frequently end up embroiled in long court cases. Offsetting these negatives are strong volume growth and high degrees of inflation protection.

Listed companies operating in Brazil

Brazilian listed infrastructure companies **CCR** (toll roads, airports & passenger rail), **Rumo** (freight rail) and **SABESP** (water utility) all have significant growth opportunities to deploy new capital. Many developed market infrastructure firms are exporting their skills to Brazil. These include **Abertis**, **Atlantia** and **SIAS** in toll roads; **Fraport**, **Vinci** and **Zurich Airport** in airports; **American Tower** and **SBA Communications** in mobile towers, **Vopak** in energy storage and **Iberdrola**, **ENEL**, **Engie** and **AES** in utilities. Brazil represents an important part of the growth strategies of many of these developed market companies.

Source: WEF Global Competitiveness Report 2016-17. For illustrative purposes only. Reference to the names of each company mentioned in this communication is merely for explaining the investment strategy, and should not be construed as investment advice or investment recommendation of those companies. Companies mentioned herein may or may not form part of the holdings of First State Investments.

Toll roads

Brazil has a well-developed toll road sector with 56 concessions from federal and state governments. Concessions are usually around 30 years long, tolls are linked to inflation and traffic volumes have historically grown at 1.5x Gross Domestic Product (GDP). Many of Brazil's main toll roads link different cities or regions and hence have a high proportion of truck traffic (circa 50%). When greenfield concessions do not meet traffic forecasts they are 'rebalanced' to fairly compensate the concession company. New capital expenditure (capex) on existing concessions is typically compensated through concession extensions.

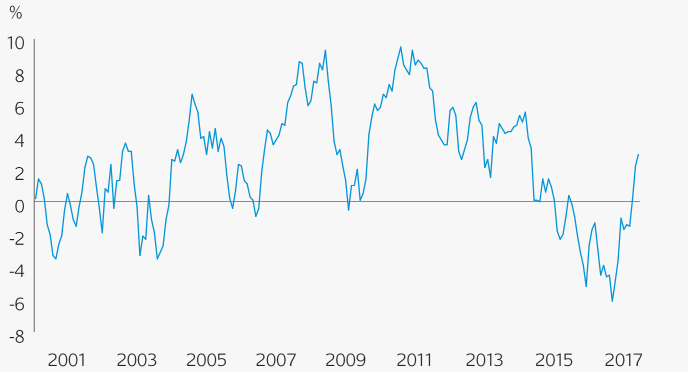
The table below outlines the largest players in the Brazilian toll road industry. The industry giant is **CCR**, a Brazilian listed infrastructure focused company with 35% market share including the main road linking São Paulo and Rio de Janeiro. Since making its first toll road investment in 1999, **CCR** has invested R6 billion into the sector. The other companies are subsidiaries of European toll road companies **Abertis**, **Atlantia** and Gavio Group (via its controlling shareholding in **Ecorodovias**). Beyond these major groups, a number of construction companies, including **Triunfo**, **Odebrecht** and **OAS** also own significant assets.

Brazilian toll road operators	CCR	Abertis/ Brookfield	Ecorodovias	Triunfo	Atlantia
Number of Concessions	9	9	7	5	4
Concession Kms	3,265	3,250	1,902	2,140	1,538
Market share (revenue)	35%	16%	12%	6%	6%
Revenue (R m)	6,113	2,753	2,133	1,100	1,028
EBITDA (R m)	4,060	1,392	1,521	673	694
EBITDA Margin	66%	51%	71%	61%	68%

Source: Company reports, FSI.

As a result of Brazil's two year economic depression, toll road traffic is now 5% below its 2014 peak. The first half of 2017 has seen a modest upturn in traffic volumes, with growth accelerating in Q3. This traffic uplift is been driven by both light and heavy vehicles. **I believe risks to traffic growth forecasts are now to the upside, given the depth of economic depression that Brazil has endured**.

Brazil toll road traffic growth



Source: ABCR, Bloomberg, FSI.

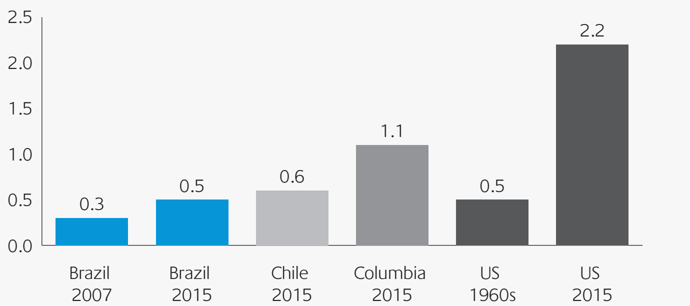
There is widespread acknowledgement from federal and state governments that new toll roads are needed to improve economic productivity and prosperity. In April 2017, **Abertis** won the tender offer of a 720km highway in the state of São Paulo that incorporates the current concession and additional new road investment. We expect six new roads (two federal, two in the State of São Paulo and two in the State of Minas Gerais) to be auctioned in late 2017 or 2018. In addition, we expect financially distressed construction companies to be forced sellers of toll road assets over the next year or two. However, I note that **Brookfield** and **Blackstone** are becoming aggressive bidders for assets.

In conclusion, I believe CCR, Abertis and Atlantia are very well placed to expand their respective market positions, as the sector looks to enjoy volume recovery from a low base.

Airports

Like most emerging markets, Brazil enjoys strong structural growth in its air travel market. Since 2000, passenger volumes have grown at a Compound Average Growth Rate (CAGR) of 6.9%, with growth from domestic passengers being even higher at 7.2%. This growth rate has been 3x domestic GDP. As the chart below illustrates, air travel penetration in Brazil remains modest with the potential for notable structural growth ahead.

Domestic flights per capita



Source: Azul

Until 2012, Brazil's airports were wholly owned by the federal government. Given the rundown state of these airports and large amounts of capital needed to upgrade and expand them, the government started a privatization program. It has now sold 51% stakes in nine airports over the past five years. These airports are regulated on a dual till basis, meaning returns on aeronautical assets are regulated but commercial activities (retail, property and car parking) are unregulated.

The first two rounds of bidding in 2012 and 2013 were dominated by Brazilian construction companies who aggressively overpaid for these assets. High prices paid, combined with substantial amounts of financial leverage and an economic depression (making traffic growth forecasts very wrong), has made these airports very poor investments. Viracopos Airport in Campinas has been handed back to the federal government by its shareholders with 2016 passenger numbers 49% below forecasts, and cargo volumes 60% below projections! The most recent round of privatizations (May 2017) was dominated by European airport operators **Vinci**, **Fraport** and **Zurich Airport**.

Brazilian airport privatisations	Airport	City	Owners	Pax
2012	Guaruhos	Sao Paulo	Invepar	37m
2012	Viracopos	Campinas	Triunfo	10m
2012	Brasilia	Brasilia	Engevix	18m
2013	Galeao	Rio de Janerio	Odebrecht/ Changi Airport	17m
2013	Confins	Belo Horizonte	CCR/Zurich Airport	11m
2017	Salvador	Salvador	Vinci	9m
2017	Fortaleza	Fortaleza	Fraport	6m
2017	Florianopolis	Florianopolis	Zurich Airport	4m
2017	Porto Alegre	Porto Alegre	Fraport	8m

Source: Company reports, FSI.

Since 2013 **CCR** and **Zurich Airport** have invested R900 million on the expansion of Belo Horizonte airport including building a second terminal. The airport now has a 60% larger footprint, with capacity increased to 22 million passengers per year. While this expansion has taken longer than forecast (that's what happens in Brazil), it will reap the benefits over the coming decade.

Belo Horizonte airport, post expansion

Source: CCR

Two years of contracting GDP has seen a large decline in passenger numbers in Brazil. As the economy begins to stabilize, we expect Brazil's airports to return to growth again in 2018. Opportunities for new acquisitions remain high with the federal government looking to auction many more airports (including the remaining 49% minority shareholdings in the nine already privatized airports), as well as the likelihood of distressed sellers from the over-leveraged 2012-13 airport auctions.

From a customer and airline perspective, the airport privatization and investment program has been a great success that improves productivity while enabling future structural growth in the sector. I am very bullish about the future of the Brazilian airport sector but need to remember what one Brazilian CFO said to me: "Optimists go broke in Brazil".

Freight railways

For such a large country, Brazil has a very underdeveloped freight railway infrastructure sector. The country has three freight railway operators spread across nine concessions. Two of these operators, **Vale** and **MRS Logistica**, are essentially vertically integrated mining and rail operations. That leaves **Rumo** as the country's only independent freight rail company. **Rumo** was formed in 2015 from the merger of América Latina Logistica (ALL) and the logistics arm of sugar giant, **Cosan**. All but one of these nine concessions are due to expire between 2026 and 2028. Railways are currently negotiating renewals with the government.

Brazilian freight railway industry	Concessions	Concession Expires	Track Length	Locomotives	Wagons	Main Cargo
Rumo	Malha Norte	2079	754 km	1,000	25,000	Grains
Rumo	Malha Paulista	2028	1,989 km			Grains
Rumo	Malha Sul	2027	7,265 km			Sugar
Rumo	Malha Oeste	2026	1,945 km			Grains
Vale	Vitoria a Minas railroad (EFVM)	2027	905 km	325	19,135	Iron Ore
Vale	Carajas railroad (EFC)	2027	997 km	289	18,135	Iron Ore
Vale, FI-FGTS, Mitsui & Brookfield	VLI (FCA & FNS)	2026	7,935 km	186		Iron Ore
MRS Logistica *	SFRN	2026	1,643 km	557		Iron Ore

*48% owned by Vale. Source: Company records, FSI.

In Brazil the rail tracks and right of way are owned by the government. Concessions are granted to different operators, usually for a period of 30 years. The freight railway companies own the locomotives and wagons. The vast majority of cargo hauled on Brazil's freight railways is iron ore and grain, to feed the country's export markets. These three freight railways do not compete against each other; rather they compete against trucks, with pricing being market based. Although not a true open access regime, freight railways must allow competitors onto their concession tracks if they have spare capacity.

Rumo is two years into a five-year turnaround strategy. So far the company has reduced operating costs and redesigned work processes, leading to higher productivity; improved service levels; changed pricing to more take-or-pay contracts; and invested R4 billion in newer locomotives and wagons (which have 30% better fuel efficiency, plus lower operating and maintenance costs). This has seen the company take significant grain haulage market share from trucks. Rumo is now investing capex in order to reduce bottlenecks and improve the rail track network, as well as seeking to secure an early renewal of its Paulista concession.

The company is now on a virtuous cycle of growing volumes (both crop size and market share) while reducing variable costs and spreading fixed costs across more tonnes. This in turn will make the railway even more competitive against truck competition.

Rumo's locomotive maintenance facility, Curitiba

Source: FSI.

The government is looking to auction two railway concessions in 2018 involving over R15 billion in capex, as well as exploring the possibility of expanding an existing line. Given the difficult economics of these new lines I would not expect any listed companies to be involved. Best to leave Chinese state owned companies to destroy economic value building these lines.

For Brazil, improving the freight railway industry (with productivity improvements recycled into lower logistics costs for major export industries) is of material national significance. Hence I expect strong political support for the important concession renewal process.

Passenger railways

As in most countries, passenger railways in Brazil are government owned and operated. As congestion in the large cities has grown, Brazilian governments have increasingly turned to the private sector to fund new urban mobility projects (subways, light rails, monorails, ferries). In 2006 Brazil used a Public Private Partnership (PPP) for the first time with a **CCR**-led consortium for the operation and maintenance of São Paulo's Subway Line 4. Today the country has five large passenger railway PPPs in various degrees of operation. These projects are typically 25-30 year concessions with demand risk shared between the public and private sector. **CCR** is involved in three of these PPPs (ViaQuatro in São Paulo, CCR Metro Bahia in Salvador and VLT in Rio de Janeiro) with Brazilian construction firms **Odebrecht** and **CR Almeida** currently building two new subway lines in São Paulo.

ViaQuatro passenger railyard in São Paulo

Source: FSI.

Going forward we view **CCR** as being very well positioned to win more urban mobility projects in Brazil. The strong need for mass public transit solutions for Brazil's car-clogged mega cities helps to greatly reduce the demand risk of these greenfield projects. São Paulo is seeking bids for subway Lines 5 and 17 in later 2017. CCR see more medium term growth opportunities in urban mobility projects than in the toll road or airports sectors.

In conclusion, we view these passenger rail PPPs as relatively low risk, offering the potential for reasonable return on investment projects, but caution that government-related project delays mean that rebalancing will need to occur which is never without political risk.

Conclusion

Brazil is a big, geographically unique, country with many social, political and economic challenges. However there is widespread acknowledgement within the country that greater investment in infrastructure is part of the solution to overcome these challenges.

For existing Brazilian infrastructure assets, as the country slowly emerges from its two-year economic depression, I now believe the risks to traffic and earnings forecasts for Brazilian infrastructure assets are to the upside.

Brazil's politicians are strongly committed to building new infrastructure using private capital under its widely utilized concession model. This, combined with an aggressive privatization program and distressed asset sales from multiple construction companies, creates a large pipeline of investment opportunities for domestic and foreign players.

These significant growth opportunities do not come risk-free; a scandal-plagued, lame duck federal government, a Presidential election in the second half of 2018, uncertainty surrounding concession rebalancing, amendments and renewals as well as a legal system that operates very slowly.

For listed companies, I would describe Brazil's infrastructure as a trade-off between the potential for strong growth prospects (both organic and inorganic) with higher than average risks.

Andrew Greenup

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