PPP

IDEAS TO FACILITATE PARTICIPATION OF MID-SIZED COMPANIES IN PUBLIC-PRIVATE PARTNERSHIPS

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[SUMMARY]

#1 [INTRODUCTION] 21

#2 [IMPORTANCE OF PPP FOR THE INFRASTRUCTURE LEAP] 24

#2.1 [Brazil: partnerships between the public and private sectors are critical to increase investments] ... 32

#3 [INVESTMENT NEEDS IN BRAZIL] 36

#3.1 [Overview of the Brazilian Infrastructure Sector] 36

#3.2 [Examples of bottlenecks] 40

#3.2.1 [Ports] 40

#3.2.2 [Airports] 42

#3.2.3 [Highways] 45

#3.2.4 [Sewage] 52

#4 [CONSTRAINTS TO PUBLIC INFRASTRUCTURE AND WORKS FINANCING] 58

#5 [RECENT EVOLUTION OF PPPS AND GRANTS IN BRAZIL AND THE WORLD] 62

#5.1 [The international experience] 62

#5.1.1 [Outcome from the international experience] 62

#5.1.2 [Public-private partnership funding structures] 72

#5.1.3 [Learnings from international experience] 74

#5.2 [The Brazilian experience] 76

#6 [PROPOSALS FOR ENCOURAGING PPPS AND GRANTS FOR MID-SIZED COMPANIES] 88

#6.1 [Hiring size formatting] 89

#6.1.1 [Project Modularization] 90

#6.1.2 [Simplification of the PPP formatting process] 91

#6.2 [Incentives for creating project-structuring companies and training for cities] 97

#6.2.1 [Case Study: EBP] 99

#6.3 [Rearragement of the risk matrix versus company size] 102

#6.3.1 [Benchmark Internal Return Rate Definition: covering other risks] 103

#6.4 [Incentives for attracting resources] 105

#6.4.1 [Fund Creation] 105

#6.4.2 [Financing through RPPS Funds] 109

#6.4.3 [Creation of holdings] 115

#6.4.4 [Infrastructure bonds] 116

#6.5 [Development of the "project rating" concept] 117

#6.5.1 [Specific risk-based models] 118
#6.6 [Public warranty enhancement] 124
#6.6.1 [Diffusion of existing public warranties] 125
#6.6.2 [Creating counterwarranties mechanisms to increase legal security to the Public-Private Partnership Warranty Fund] 132
#6.6.3 [Creation of state-owned warrant companies] 134
#6.7 [Dissemination of step-in rights operation] 135
#6.8 [Participation of state-owned banks as project's guarantor] 139
#7 [CONCLUSION: RECOMMENDATION FOR AUTHORITIES IN CHARGE] 142
#7.1 [Proposals to ensure good projects] 143
#7.2 [Proposals to reduce transaction costs and grant transparency to the process] 143
#7.3 [Proposals to reduce transaction costs and grant transparency to the process] 144
#7.4 [Proposals to relieve the issue of warranties, namely at a city level] 145
#7.5 [Proposals to bring new resources] 145
#7.6 [To provide security for the continuity of services] 147
#APPENDIX I [PROPOSAL FOR CHANGING THE PPP LAW] 150
#APPENDIX II [BRIEF DESCRIPTION OF THE CAPM MODEL] 151
#REFERENCES 155

[TABLE SUMMARY]

Chart 1: Public Investment Rates in Brazil 1990 to 2019 (GDP %) 25
Chart 2: International Comparison: 2015 Investment Total* (GDP %) 25
Chart 3: Regional Demand for Infrastructure - 2030 ($ Billion) 26
Chart 4: Average Global Spending in Infrastructure as % of GDP in Purchase Power Parity 2000-2010 ... 26
Chart 5: International Comparison: Investment in Infrastructure (GDP %) 28
Chart 6: Evolution On Investments in Infrastructure (R$ Billion In 2011) 28
Chart 7: Investment in Infrastructure Latin America 29
Chart 8: Global Investment in Infrastructure 2005, 2010 - $ Billion 29
Chart 9: Investment in Infrastructure Through PPPs - Developing Countries (2000-10) 31
Chart 10: PPPs in the World, Divided Into Sectors, 1984-2010 ($ Billion) * 31
Chart 11: Risks Associated to PPPs Formation 33
Chart 12: Infrastructure Quality Among Countries - 2014/2015 37
Chart 13: Quality of Logistics Infrastructure per Region 2011 37
Chart 14: Yearly Investment Level in Sanitation (R$ Billion As Of 2014) 39
Chart 15: Investment Needs in Brazil 2011-15 (R$ Billion) 39
Chart 16: Situation of Ports in Brazil 41
Chart 17: Bottlenecks and Investments in Ports 41
Chart 18: Airport Capacity Gap 43
Chart 19: Bottlenecks in Airports 43
Chart 20: Evidences of Saturation in Airports 44
Chart 21: Length of Brazilian Highway Grid 44
Chart 22: Paved Highway Grid Density per Country (Km/1,000 Km2) 46
Chart 23: Highway Quality in South America (2014) 46
Chart 24: Quality of Brazilian Highways (2014) 47
Chart 25: General Status Ranking - Public and Granted Management 47
Chart 26: Evolution of Federal Investments in Transportation Infrastructure (1975-2013) Investment / PIB (%) 49
Chart 27: Evolution of Pac Transportation Works - Brasil/2014 49
Chart 28: Investment in Granted Highways - Brazil / 2009-2014 (Current R$ Million) 51
Chart 29: Required Investment in Highway Infrastructure - Brasil/2014 51
Chart 30: Required Investment in Highway Infrastructure Per Region - Brasil/2014 51
Chart 31: Brazilian Sanitation Sector Indicators (2013) 53
Chart 32: Evolution of Sewage Indicators: Water (%) 53
Chart 33: Evolution of Sewage Indicators: Sewage (%) 53
Chart 34: Average Index of Water Supply in Cities (2013) 54
Chart 35: Average Index of Sewage Collection in Cities (2013) 55
Chart 36: Index of Losses at Distribution (2013) 55
Chart 37: Pattern of Investment Financing to Brazil's Industry and Infrastructure 59

Chart 38: Ppps: Global Investment in Infrastructure by Region 1990, 1995-2011 - $ Billion 63
Chart 39: Public-Private Partnerships in Execution in the United Kingdom 1992-2012..... 65
Chart 40: Deadline For Delivering Works with PPPs and Without PPPs in the United Kingdom 1992-2004..... 65
Chart 41: Public-Private Partnerships in Execution in India 1997-2012 67
Chart 42: Environment for Developing PPPs in Latin America and the Caribbean - 2012..... 68
Chart 43: Latin America and the Caribbean in the 2012 Infrascopio Ranking..... 71
Chart 44: Public-Private Partnerships and Grants Timeline in Brazil..... 77
Chart 45: Ordinary Grant 78
Chart 46: PPPs, Sponsored Grant 78
Chart 47: PPPs, Administrative Grants..... 78
Chart 48: PPPs in Execution and PPP Projects June 2014 to February 2015..... 80
Chart 49: Government Level Responsible for PPPs - June 2014 to February 2015 81
Chart 50 - PPPs in Execution and PPP Projects per Sector - 06/2014 To 02/2015..... 82
Chart 51: Investment in PPPs and Grants in São Paulo State (R$ Billion) 82
Chart 52: PPPs and Grants Status in the State of São Paulo 83
Chart 53: Ordinary Grants and PPPs per Sector 84
Chart 54: Steps for Approving the Alto Tietê PPP 96
Chart 55: Partnership Structure for Project Structuring Companies 96
Chart 56: phases in which the Brazilian Project Structuring company supports the government..... 100
Chart 57: Basic model to finance public-private partnerships 108
Chart 58: Interest Rates Projection 110
Chart 59: Breakdown of RPPS Investments in Brazil..... 111
Chart 60: Breakdown of Resourced by Entity Type..... 111
Chart 61: Evolution of the Real Interest Rates 113
Chart 62: Capital Flow Structure..... 114
Chart 63: Distribution of GDP yearly growth 120
Chart 64: Accumulated distribution of yearly growth (%)..... 120
Chart 65: Accumulated Likelihood (%) 121
Chart 66: Likelihood (%) 121
Chart 67: Monte-Carlo Simulation Technique 122
Chart 68: IRR Probability Distribution for the Project..... 122
Chart 69: How Warrant Execution Works 126
Chart 70: How to Calculate the Warrant Needs..... 128
Chart 71: Need for Warranties 129
Chart 72: Alternatives for Structuring Warranties in Public-Private Partnerships 133
Chart 73: Risk and Return Rate 153

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[TEAM]

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[PALAVRA DO PRESIDENTE]

José Carlos Martins

Presidente da Câmara Brasileira
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[PALAVRA DO PRESIDENTE]

O setor da construção é um dos que mais geram emprego e renda no nosso País. Atualmente, possui mais de três milhões de trabalhadores com carteira assinada e participa de 6,5% do Produto Interno Bruto brasileiro. É, portanto, a mola propulsora do desenvolvimento do Brasil.

A Câmara Brasileira da Indústria da Construção (CBIC) sempre priorizou o diálogo como forma primária de elaborar políticas públicas que possam contribuir para o crescimento do País, objetivando melhorar a qualidade de vida do cidadão brasileiro.

Em momentos de crise é necessário pensar em alternativas para fazer com que a economia do País volte a crescer. Nesse contexto, acreditamos que investimentos em infraestrutura são indispensáveis no cenário atual, por impactarem positivamente a produtividade da economia em todos os setores, inclusive no nosso, a construção.

Já estamos há quase três décadas com investimentos em infraestrutura entre 2% e 3% do PIB, ou seja, o Brasil, na melhor das hipóteses, tem conseguido repor o capital de infraestrutura que se deprecia. Com base na experiência internacional, o investimento deveria ser, no mínimo, de 3% do PIB para manter o estoque de capital existente.

Nesse contexto, o presente estudo – *PPPs: propostas para ampliar a participação das empresas* – busca contribuir com a sociedade brasileira no objetivo de fomentar a realização de Parcerias Público Privadas (PPPs) e Concessões. Isso porque acreditamos que as Parcerias e Concessões constituem instrumento fundamental para o desenvolvimento da infraestrutura e, consequentemente, para o crescimento sustentado do País. O amplo acesso a estes mecanismos pelo setor privado poderá contribuir decisivamente para o aumento do investimento e atenuação da atual recessão.

Como temos percebido que o Governo Federal deve ampliar o uso das concessões e de PPPs, como forma de manter o desenvolvimento da infraestrutura nacional num período de ajuste fiscal que implicará em retração dos investimentos com recursos exclusivamente públicos, saímos na frente com este estudo para contribuirmos, proativamente, com as três esferas de Governo nessa temática. Aliás, entendemos que é necessário que a inclinação do Governo Federal a favor das PPPs e Concessões passe a fazer parte do cotidiano do setor, tornando-se, de fato, uma política pública orgânica, perene e transparente.

Sabe-se que há diversos entraves à entrada de um número maior de empresas em PPPs e Concessões. Tais obstáculos se manifestam em diversas fases de formatação de uma parceria ou concessão: concepção do projeto, elaboração do arcabouço jurídico-legal, levantamento de formas recorrentes de funding e prestação de garantias públicas. Neste material, propomos formas de mitigar as dificuldades existentes e, com isso, esperamos que todos sejam beneficiados com os bons frutos que esse processo, temos certeza, vai gerar nos próximos anos.

José Carlos Martins

#1 [INTRODUCTION]

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Partnerships and grants are a critical tool for developing infrastructure and, thus, for the country's sustained growth. Broad access to these mechanisms for the private sector could decisively contribute for increasing investment levels.

The goal of this study, which was designed under the Brazilian Chamber for the Construction Industry (Câmara Brasileira da Indústria da Construção, CBIC) request, is to develop options for fostering PPPs for mid-sized companies . It is understood that in the current context, this is the segment presenting the largest potential for growth, but nothing shall prevent that the findings presented here can be extended to the entire construction industry, all things considered.

There are several barriers to entry of smaller companies in public-private partnerships (PPP) and grants. Such barriers appear at the many steps for formatting a partnership or grant: project conception, legal structure drafting, recurring funding alternatives surveying and public warranty delivery. All these steps pose significant barriers and competitive asymmetries to mid-sized companies.

This study is divided into six sections, this introduction included. Section 2 presents general data on the Brazilian infrastructure sector current situation and its position in relation to other countries. Also, it indicates how partnerships and grants are critical for leaps in infrastructure.

Section 3 draws attention to the gaps in the infrastructure sector. Such lack of investment in Brazil suggests the urge for mobilizing private capital, once there are no public funds enough to eliminate so many bottlenecks.

Section 4 discusses limitations to infrastructure and public works in Brazil. It aims to draw attention particularly to three aspects: i) the strong dependency on official financing mechanisms and the late development of funding in the private market; ii) the lack of project finance with excessive emphasis on corporate warranties related to credit rights; and iii) the concentration of partnerships among large companies.

Section 5 shows the recent evolution of partnerships and grants in Brazil. Albeit an increase has occurred recently, the pace is still behind the need for public works.

Section 6 contains proposals to overcome limitations as indicated on Section 4, emphasizing incentives for the participation of mid-sized companies in partnerships and grants. The analysis focus on financial-economic and legal aspects related to the study proposition.

A final section summarizes the Study main findings and lists suggestions for public policy.

This document was created based on sources public, own and/or provided by CBIC, which are duly mentioned along the text.

1 According to RAIS/MTE, the size of a company is defined by their number of employees, and a mid-sized company is one ranging from 100 to 499 employees.

#2 [IMPORTANCE OF PPP FOR THE INFRASTRUCTURE LEAP]

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This section aims to present general data on the Brazilian infrastructure sector current situation and its position in relation to other countries.

The rate of investment of a country is the key factor for growth and competitive gain. Without proper investment levels, the economy is unable to grow in a sustainable fashion.

Brazil has experienced high investment rates, in relation to the GDP, as in the middle of the 1970s, when the investment rate achieved almost 24 of the GDP. CHART 1 shows the path of investment rates in Brazil. In the last two decades, investment levels stood almost permanently below 20% of the GDP. In the 1990s, the average investment rate was 17.9% of GDP, with a slight decrease in the 2000s (16.9%). Projections for the next 20 years also show a relatively low average on 17.5% of the GDP.

In the Brazilian context, if investment levels remain close to 19% of the GDP, the economy growth rate would be limited in the short term as it would be incompatible with a sustained growth rate of 5 to 6% p.a. . Events as the economy expanding 7.5% in 2010 would be the result of a cyclical recovery of the economy after a year of stagnation, which 2009 was.

Growth rates between 5% and 6% p.a. would require investment levels around 25% of the GDP (an 8% growth per annum compared against last 10 years average). It is worth mentioning that Brazil lags behind emerging countries on what concerns investment rates when conceived in terms of Fixed Capital Gross Accumulation over GDP. Actually, the Brazilian investment rate projected to 2015 (17.2%) is quite below the average of 26 countries sampled (25.2%) as it can be seen in CHART 2.

Emerging countries shall undergo several demographic changes, such as increase of population and income, which shall intensify demand for services and impacting the investment rates of these countries a great deal. Infrastructure, among education and health, shall be the sector absorbing most investments (WORLD BANK, 2013).

In Latin America and the Caribbean, investments in infrastructure are expected to reach $117 billion in the next 15 years - still below investments demanded by South and East Asia. This amount is above those demanded by African, Eastern European and Central Asian nations. A graphic comparative can be found at CHART 3.

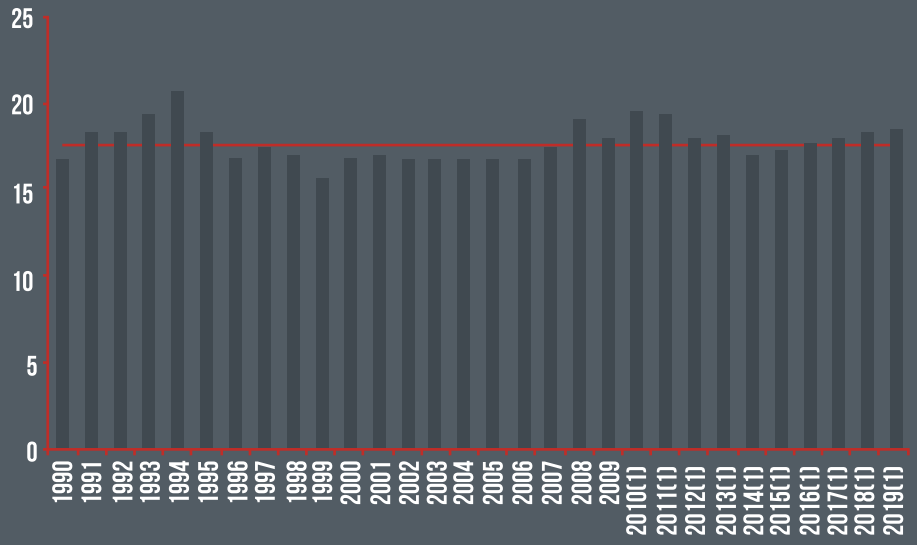
In the last years, the perception of the public management on the strong correlation between economy competitiveness and the quality of infrastructure was enhanced. However, between 2000 and 2010, global investment in infrastructure as a percentage of the GDP, in terms of purchase power parity, was approximately 3.3% (CHART 4), which is below the projected need for investments in this sector that is 4.5% (ADAIR et at., 2011).

Lack of infrastructure is one of the main barriers to growth. CHART 5 shows that infrastructure investments in Brazil are still comparatively low against other emerging economies, at some 2% of the GDP.

Such investments decreased in the period of 2001 to 2006 when compared against the pe-

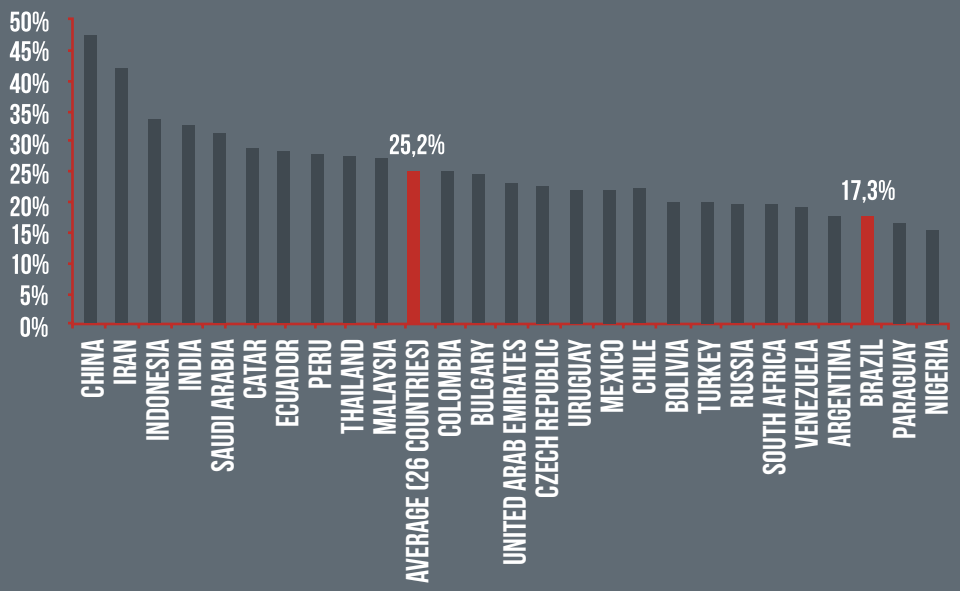
2 Para mais detalhes ver Pastore e Holland.

CHART 1: PUBLIC INVESTMENT RATES IN BRAZIL 1990 TO 2019 (GDP %)



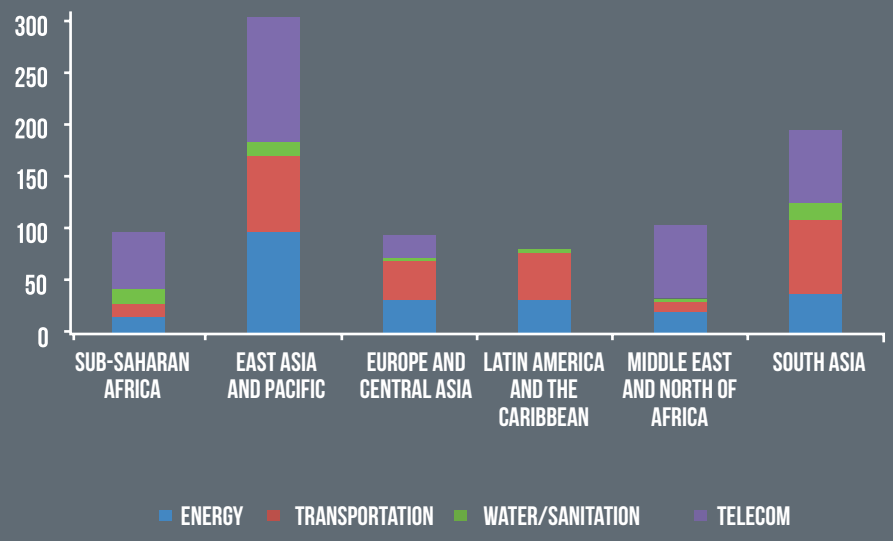
Source: IBGE and IMF; Elaboration: GO ASSOCIADOS; Note: (1) - For years 2010 and 2011, preliminary results were obtained from Brazil's Quarterly National Accounts. (2) - Project by the IMF

CHART 2: INTERNATIONAL COMPARISON: 2015 INVESTMENT TOTAL* (GDP %)



Source: IMF; Elaboration: GO ASSOCIADOS *Projection by the IMF

CHART 3: REGIONAL DEMAND FOR INFRASTRUCTURE - 2030 ($ BILLION)



Soucer: (WORLD BANK, 2013)

CHART 4: AVERAGE GLOBAL SPENDING IN INFRASTRUCTURE AS % OF GDP IN PURCHASE POWER PARITY 2000-2010

Sector	%
Highways	0,38
Airports	0,10
Ports	0,05
Railways	0,09
Telecom	1,14
Power Generation	0,27
Power Transmission and Distribution	0,22
Sewage	1,01
Total	3,26

Source: World Economic Forum; (FRISCHTAK, 2013)

riod of 1981 to 1986, to 2.11% of the GDP from 5.15% of the GDP, and reaching 2.05% of the GDP in 2011. As a counterpoint, the Chilean economy expanded investments in the sector to 5.21% from 3.44% in the same period, and kept the investment level at 5.1% in 2011, with large support from the private sector; Laos, between 1998 and 2003, raised investments in infrastructure to 4.7% of the GDP from 1.7% and Thailand leaped to 15.4% in the same period, from 5.3%. China increased the investment rate in infrastructure to 13.4% of the GDP in 2010 from 2.6% (WORLD BANK, 2005; CALDERÓN, SERVÉN, 2010; FRISCHTAK, 2013).

As summarized on CHART 6, in Brazil, despite the amount of investment in infrastructure underwent constant growth, possible reaching R$ 183.6 billion at the end of 2012, the investment rate in infrastructure (around 2% of the GDP) is below the average rate of 3% that is considered acceptable, based on the experience of emerging economies that achieved fast growth rates in the last years (FRISCHTAK, 2008).

That investment rate presented above would suffice only to keep the existing capital stock and follow up on the population growth and needs.

The update of infrastructure would require a higher investment rate. Investments at 5% of the GDP would put Brazil at par with industrialized economies in East Asia, such as Korea. Such rate would have to be sustained across several decades to allow for the required infrastructure modernization.

Investments in social and economic infrastructure are characterized by high, positive externalities, with the social return typically above the private one. As a result, private infrastructure service providers do not appropriate economic benefits in full, and their participation in the investment tends to be lower than desired by society. As CHART 5 shows, public investment in infrastructure is above private investment in most of the countries surveyed.

However, the trend in developing countries is to reduce the public sector role as main provider of

INVESTMENTS AT 5% OF THE GDP WOULD PUT BRAZIL AT PAR WITH INDUSTRIALIZED ECONOMIES IN EAST ASIA, SUCH AS KOREA.

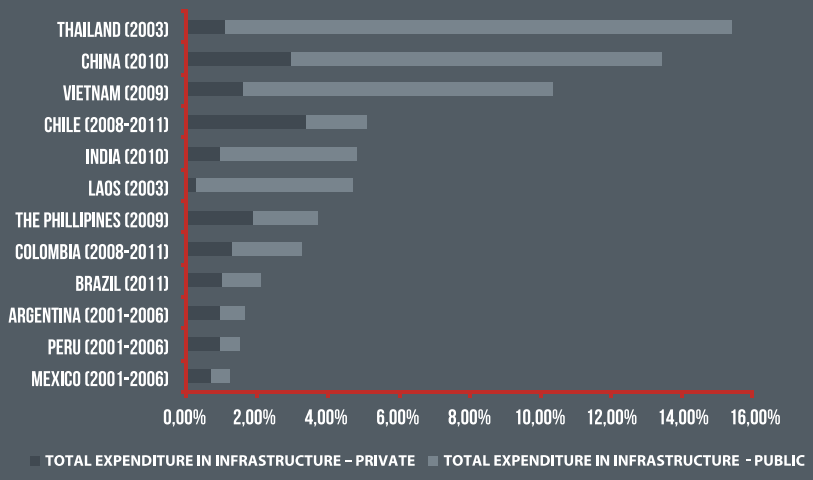
funds for works (CHART 7). More acceptances of foreign direct investment and improvement of income levels are some of the causes for this. However, the study highlights the growing importance of sovereign funds - investment funds managed by the State that aims to allocate part of the reserves accrued by a country - such funds may increase the State participation in infrastructure works both internally and externally in a context of growing interconnection between economies, thus providing relief to the retraction shown by the data. (WORLD BANK, 2013)

Smaller state participation may be advantageous for the progress of infrastructure works, as public investment is many times deficient in allocating resources efficiently. As the provision of services and goods by the public sector is frequently accompanied by poor project choices, high costs, slow execution and delays, selecting public-private partnerships allow for efficiency gains as these projects focus in a single contract for building and operating the assets. (ENGEL; FISCHER; GALETOVIC, 2009; WORLD BANK, 2013)

This context, along with the strengthening of budget pressures in the public sector, led governments to encourage a more active role for the private sector at developing, funding, and operating social and economic infrastructure projects. Although public-private partnerships are not the answer for all cases, they have been in the spotlight as an important alternative.

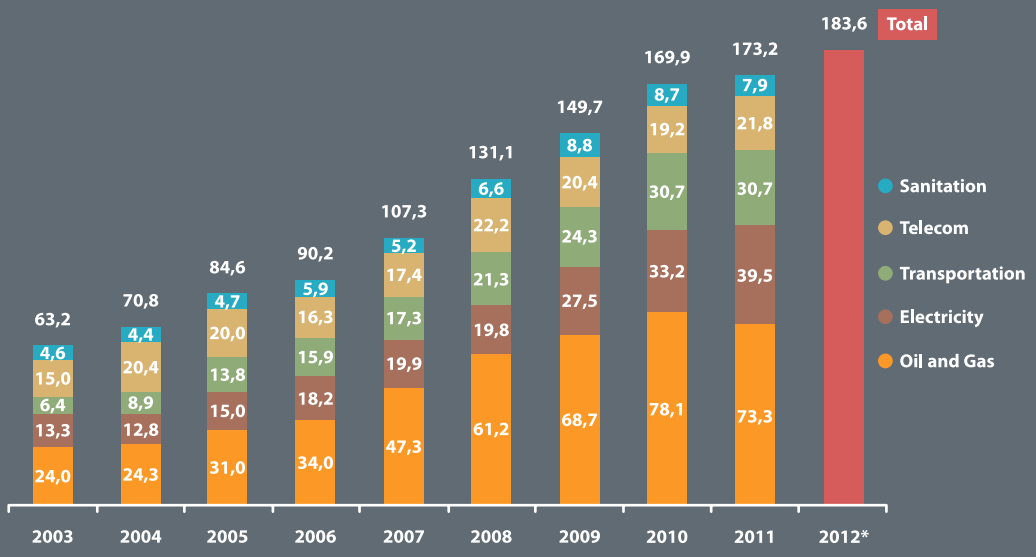
Thus, since the 1990s, the involvement of the private sector on the provision of infras-

CHART 5: INTERNATIONAL COMPARISON: INVESTMENT IN INFRASTRUCTURE (GDP %)



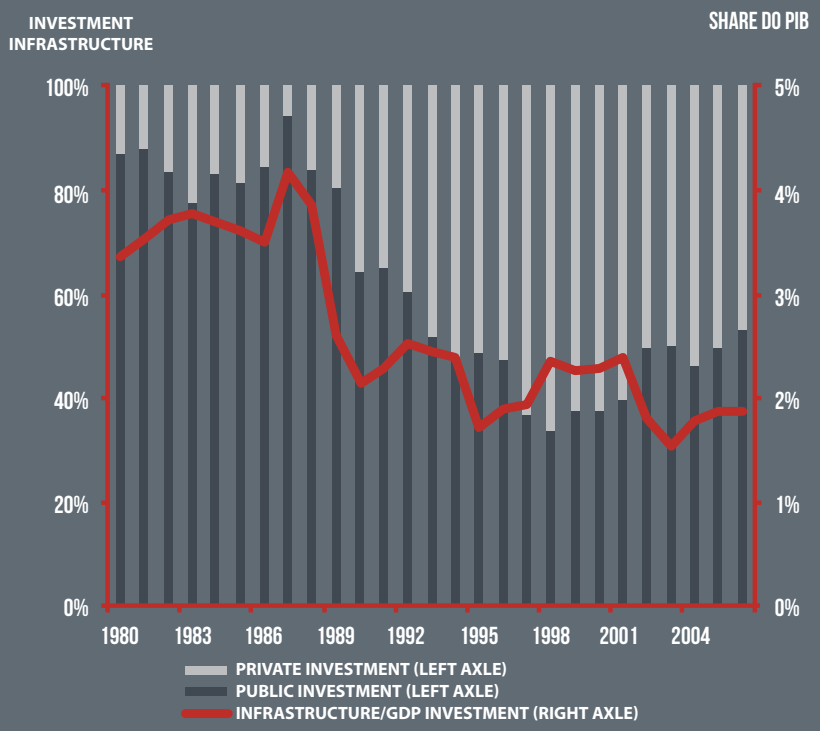
Source: (WORLD BANK, 2005; CALDERÓN; SERVÉN, 2010; FRISCHTAK, 2013), Elaborated by GO ASSOCIADOS

CHART 6: EVOLUTION ON INVESTMENTS IN INFRASTRUCTURE (R$ BILLION IN 2011)



Soucer: Abidb, 2011

CHART 7: INVESTMENT IN INFRASTRUCTURE LATIN AMERICA



Source: (WORLD BANK, 2013); Note: the chart covers Argentina, Brazil, Chile, Colombia, Mexico, and Peru.

CHART 8: GLOBAL INVESTMENT IN INFRASTRUCTURE 2005, 2010 - $ BILLION

	2005	2010
Global GDP by Purchase Power Parity	56.800	76.300
Investment in Infrastructure	1.826	2.442
Investment in PPP	95,3	179,7
Participation of PPP (%)	5,24	7,36

Source: World Bank; World Economic Forum; (FRISCHTAK, 2013)

tructure, especially by means of Public-Private Partnerships (PPPs) has proved to be an important tool to eliminate structural gaps for developing countries. These partnerships have been able to impose the discipline lacked in the public sector for developing large works, as per (WORLD BANK, 2013).

Attracting investments from the private sector has been important for modernizing the infrastructure of two Latin American countries that managed to increase their investments: Chile and Colombia. In these countries, higher investment levels were achieved by supplementing private investments with regulatory stability and reasonable regularity on public investments. (FRISCHTAK, 2008)

However, despite the execution of some public-private partnership projects is a better alternative when compared against the traditional execution by the public sector, data in the CHART 8 reveal the low PPP penetration in the total of investments in infrastructure.

However, this low participation level hides the fact that public-private partnerships have experienced a dramatic increase in the last years, especially in sub developed countries where there is a high deficit of investment in infrastructure and delivery of public services. Furthermore, since the success of this investment modality in the UK, more than forty countries developed PPP models for several sectors, such as education, health, safety, transportation and sanitation. (ADAIR et al., 2011)

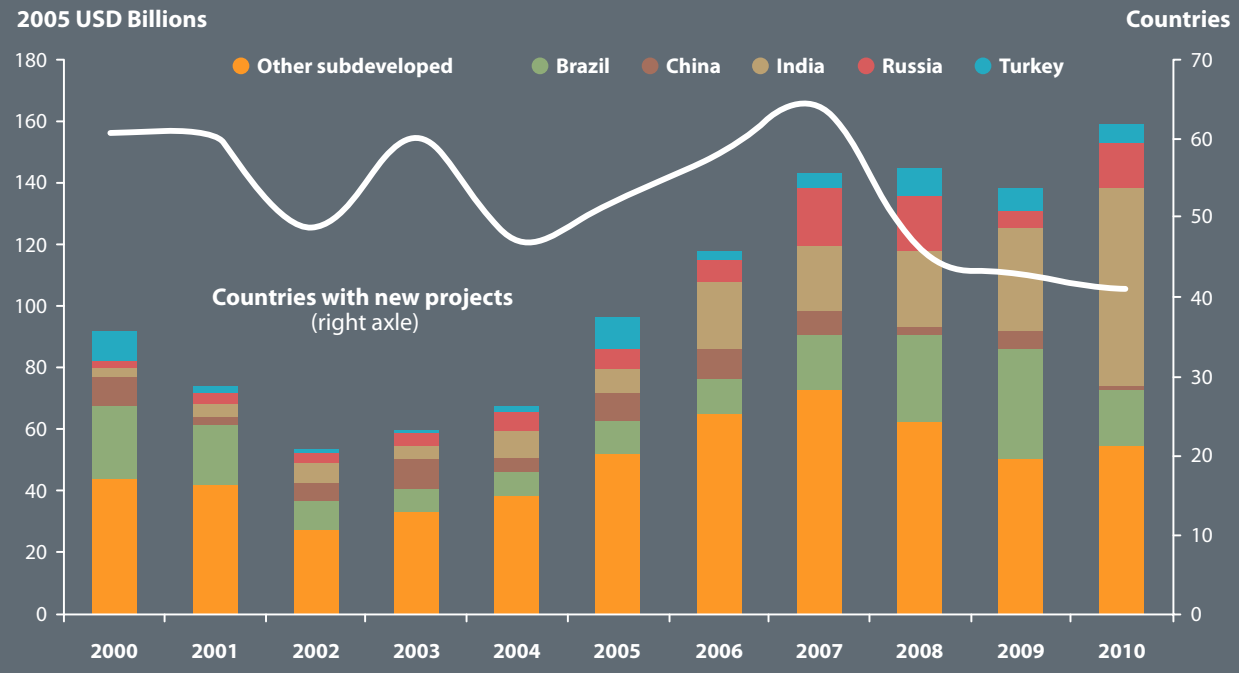
Global investment in infrastructure through public-private partnerships increased approximately 500% between 1990 and 1997. Despite a period of stagnation concurrently with Asian crisis, by 2002 investments resumed their expansion trend and even facing funding difficulties caused by the 2008 crisis, they totaled $ 180 billion in 2010.

As evidenced by CHART 9, Brazil took the lead in this investment model when compared against other emerging economies. Brazil ranked second in the infrastructure private investment list, behind India but ahead of China, Russia and Turkey. (WORLD BANK, 2013)

Private investments, however, have not been enough to offset the decline in public investments that countries in Latin America are facing. Rates have collapsed in the 1980s and the beginning of the 1990s, and are contracted since then (CHART 7). Both investment modalities are not replacing each other but supplementing instead (CALDERÓN; SERVÉN, 2010).

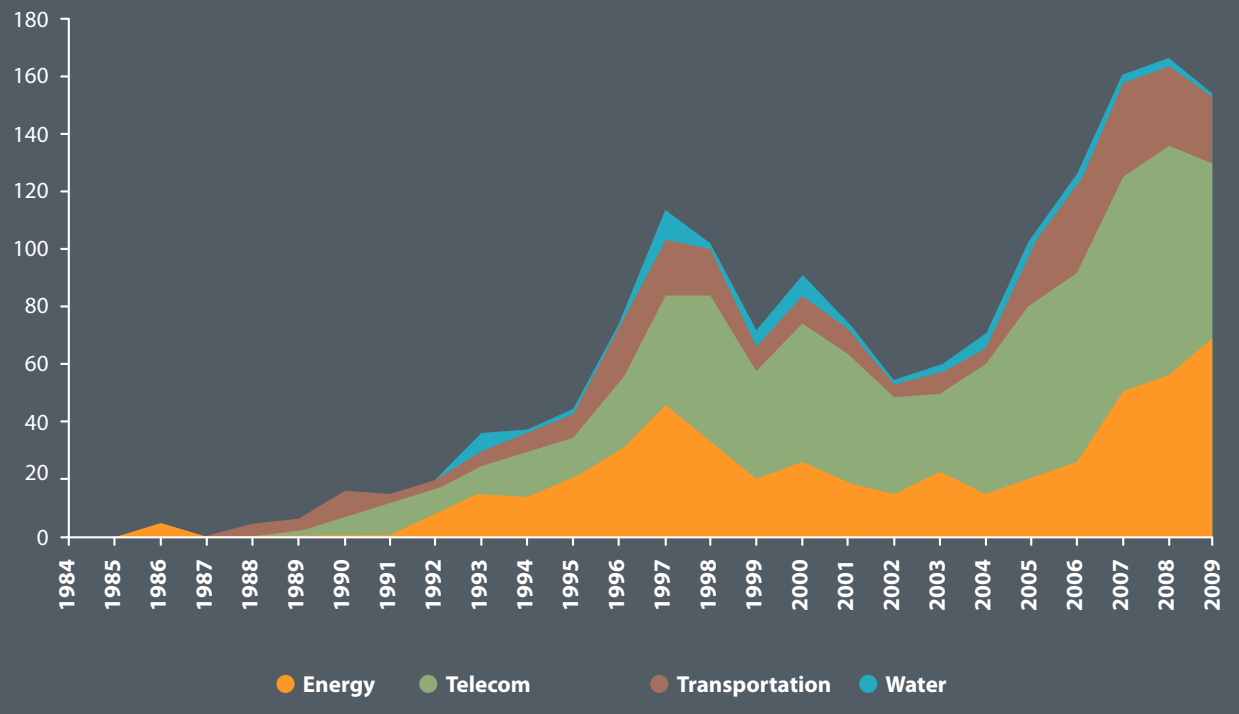
The public-private model is still insufficient to meet demand from all sectors. Most projects are strongly concentrated on the energy and telecommunication sectors (CHART 10) and such concentration is higher in developing countries. In sub developed countries, 75% of PPP contracts were signed for the telecommunication sector according to the WORLD BANK (2013).

CHART 9: INVESTMENT IN INFRASTRUCTURE THROUGH PPPS - DEVELOPING COUNTRIES (2000-10)



Source: (WORLD BANK, 2013)

CHART 10: PPPS IN THE WORLD DIVIDED INTO SECTORS, 1984-2010 ($BILLION) *



Source: (WORLD BANK, 2013), Note (*): Figures adjusted by the US Consumer Price Index in real dollars from 2005.

#2.1 [BRAZIL: PARTNERSHIPS BETWEEN THE PUBLIC AND PRIVATE SECTORS ARE CRITICAL TO INCREASE INVESTMENTS]

This section aims to show how the challenge of increasing investments in infrastructure goes through systematic incentives to public-private partnerships and grants.

Three reasons justify the strength of partnerships and grants in Brazil. Firstly, the need for increasing the amount of investments in infrastructure to 5% of GDP from 2%, as highlighted on Section 2.

Secondly, the Brazilian government is fiscally restricted to increase investments and it is not able to quadruple its participation on investments (leap from 1% of GDP to 4%). Such public investment leap at this size is not feasible due to the low saving capacity by the public sector and fiscal restriction capping public spending.

Finally, the third reason is that the PPPs and Grants present the following benefits when compared against the execution of investments directly by the public sector, beyond budget restrictions[3]:

i. **Establishing goals that allow for improvement of service delivery:** Contracts for PPPs or grants usually have defined goals for delivering services and also create an external regulation body. Thus, these are two advantages that typically take place in relation with the direct delivery by the public sector. In the latter, there is not a single contract that usually determines goals for service delivery. It is common that a PPP or grant contract determines a deadline for the universalization of the service. Furthermore, payments can be reduced if services do not reach the quality level specified. The same does not usually happen when the delivery is carried out directly by a public entity.

ii. **More transparency at public service delivery:** On grants and PPPs, there are contract-based tools for following up contract execution. The Government itself oversees the service delivery, as well as state accounting courts and potentially other entities, such as regulation bodies.

iii. **Technology and management innovation aspects provided by the private sector:** The interaction with the private sector adds management capabilities to the public sector. New management tools can be used not only during the contract lifecycle but can also be incorporated to the public management upon the contract end. Such aspect is particularly useful, given how productivity in the private sector has progressed in the last decades compared against that of the public sector.

iv. **Incentives for private partners to maximize investment's quality and efficiency:** In an arrangement in which the private sector is responsible for building and operating the infrastructure, incentives for increasing efficiency are larger than when the private sector is in charge solely for the work site. First, incentives for accelerating the work completion are larger. In the case of a PPP or grant, the private player's income depends on the completion of the work, so there are incentives to complete it faster. In the case of ordinary works, the payment takes place during the contract's lifecycle and delays are common. Second, concerns with efficiency at operation will be larger. The private partner will have incentives for build and operate as efficiently as possible. Infrastructure built more efficiently result in a cheaper service delivery for society over time.

v. **Risk allocation can be optimized among agents:** This is one among key advantages PPP bring against public works. Risks can be alloca-

3 These points are highlighted by Férnandez (2006)

ted to the agent holding better skills, information control, and knowledge on each specific risk. According to Akitoby, Hemming and Schwartz (2006), "the basic principle for managing risk is that each agent must manage the risk the agent is more able to bear". [4] Usually, building and operation risks are under private sector's responsibility. The private partner must bear the risk of specifying the required assets for providing the service. Institutional risks, as overseeing, regulating, and policies, are allocated to the public sector.

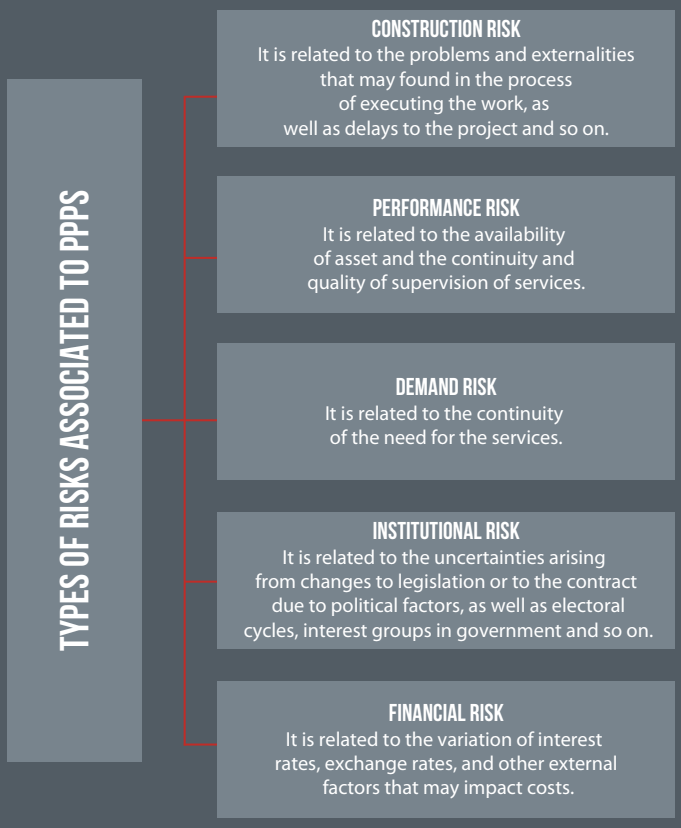
vi. Future obligations with PPPs do not compromise public debt levels. When government makes direct investments, these are usually funded by the government itself due to the natural dilemma posed by the Fiscal Liability Bill and minimum needs for spending in certain areas as health, education and so forth. Thus, usually the decision is for financing such investments by issuing bonds or getting loans from financial institutions. In the other hand, through Public--Private Partnerships, counter payments are not considered as debt as it comprises the operational line for each fiscal year. Consequently, it is possible to make efficient budget allocation decisions using PPPs, considering that such future commitments will naturally align to the tax base increase (economic activity level) with long term economic growth.

However, it is possible to indicate some risks associated to PPP and grant projects that are exhibited in CHART 11.

Proper dimensioning of risks associated is one of the largest bottlenecks for formatting PPPs and grants. As will be mentioned on Section 6, the best risk allocation is suggested to be according the type of project and parties involved.

4 Quoted in Fernandez and Carraro (2011).

CHART 11: RISKS ASSOCIATED TO PPPS FORMATION



Source: Adapted from Fernandez and Carraro (2011) based on IMF (2004), Montoro Filho (2004) and Menezes (2005).

#3 [INVESTMENT NEEDS IN BRAZIL]

#3 [INVESTMENT NEEDS IN BRAZIL]

The previous section showed how current investment rates are not enough to ensure a sustained growth path. The goal of this section is to evidence how lack of investments generates deficit in infrastructure, raising systemic costs and eliminating competitiveness from the economy.

#3.1 [OVERVIEW OF THE BRAZILIAN INFRASTRUCTURE SECTOR]

Research by the World Economic Forum on infrastructure quality indicated that Brazil scored 3.1 points in a scale from 0 to 7. Brazil infrastructure in roads, railroads and ports is behind those delivered by other Latin American countries, such as Chile and Uruguay. CHART 12 ranks the top 10 countries and 5 Latin American countries ahead of Brazil; Brazil is still ranked well below among 144 countries surveyed (SCHWAB, 2014).

Data on CHART 13 shows the result of a survey conducted among logistics professionals on the quality of transportation infrastructure. The quality of all modalities is considered below than Latin America and the Caribbean's average and it is well behind than that reported by developed economies. This situation is caused by three factors above all: expansion of demand for using modalities was not matched by supply expansion, the age of existing facilities and the low investment in the sector (PINHEIRO, 2013).

CHART 12: INFRASTRUCTURE QUALITY AMONG COUNTRIES - 2014/2015

Ranking	Country	Score
1	Switzerland	6.60
2	Hong Kong	6.50
3	United Arab Emirates	6.40
4	Finland	6.40
5	Singapore	6.30
6	The Netherlands	6.30
7	Austria	6.20
8	Iceland	6.12
9	Japan	6.20
10	France	6.1
39	Panama	5.00
45	Puerto Rico	4.90
50	Chile	4.70
69	Mexico	4.20
80	Uruguay	4.00
99	Bolivia	3.60
108	Colombia	3.40
120	Brazil	3.10

Source: (SCHWAB, 2014)

CHART 13: QUALITY OF LOGISTICS INFRASTRUCTURE PER REGION 2011

	% of respondents declaring "poor" or "very poor"		
	Brazil	Latin America and the Caribbean	High average income countries
Ports	75,0	33,8	24,8
Airports	40,9	25,3	22,9
Highways	52,0	50,4	17,8
Railways	90,0	85,9	11,1
Storage and moving facilities	24,0	20,4	29,9
Telecom and information technology	17,4	14,8	17,9

Source: World Bank (2011), apud Giambiagi and Pinheiro (2012)

The current situation is in contrast with the large investment carried out during the 1950s and the 1970s. Furthermore, the total of cargo moved at ports and railroads increased 5.9% and 6.7% between 2002 and 2012, respectively. The number of passengers embarked in Brazilian airports grew 11.8 in average between 2003 and 2012.

To solve the problems in Brazilian highways, railroads, ports, and airports would imply in a reduction up to R$ 30 million per year on logistics costs borne by local companies. These figures were calculated by the Supply Chain Brazilian Institute (Instituto Brasileiro de Supply Chain, Inbrasc), that showed that 72% out of the 200 business groups surveys, all connected to the supply chain, would save until R$ 2 million per year if the local infrastructure improved. According to the survey, 28% of respondents would save up to R$ 400,000 every year if gaps in Brazilian logistics were eliminated. For 6% of businesses, savings would be even larger, reaching between R$ 10 million and R$ 30 million[5].

Bottlenecks in infrastructure can even remove incentives for investing, more than exchange rate oscillations or interest rate raises. These directly reflect in less production competitiveness, remove incentives for private investments and render the region less attractive for foreign investors. As the Brazilian economy overheating in 2010 did not occurred concurrently with the expansion of the production capacity and establishing an efficient logistics, it has contributed to a smaller economic growth as reflected in the GDP braking from 7.5% in 2010 to less than 1% in 2012[6].

In 2007, the Federal Government launched the Growth Acceleration Program (Programa de Aceleração do Crescimento, PAC), aiming to foster public and private investments. Sectors receiving priority status were transportation, energy generation and sanitation. According to the PAC 2 11th Balance, 2014, investments executed by the program will reach R$ 1,066 trillion in the period between 2011-2014.

From this figure, the government has completed works worth R$ 796.4 billion. On Transportation, works worth R$ 66.9 billion were completed throughout the country. Totaling 5,188 km in highways; on railroads, 1,088 km are already completed and 845 km of North-South Railroad and 247 km of Ferronorte have become operational. On ports, PAC 2 completed 30 works as expansion, building and dredging sea terminals. Granted to the private sector the airports of Guarulhos (São Paulo), Viracopos (São Paulo), Juscelino Kubitschek (Brasilia), São Gonçalo do Amarante (Rio Grande do Norte), Galeão (Rio de Janeiro), and Confins (Minas Gerais); renovated the Passenger Wing 2 at Galeão airport (Rio de Janeiro); recovered lanes and parking areas in the airports of Foz do Iguaçu (Paraná) and Campo Grande (Mato Grosso do Sul); and completed works on Wing 4 in Guarulhos (São Paulo).

However, Brazil still faces a large bottleneck, as CHART 15 shows investment needs in Brazil and Abdib 2011 estimates investment needs at R$ 804 billion in infrastructure for the period 2011-15, broken down into the sectors below:

I) OIL AND GAS:
R$ 376,5 BI (46,8%);

II) ELECTRICITY:
R$ 141,5 BI (17,59%);

III) TRANSPORTATION AND LOGISTICS:
R$120,5 BI (14,98%);

IV) TELECOM:
R$ 98,5 BI (12,24%);

V) SANITATION:
R$ 67,5 BI (8,39%).

The investment level proposed by ABDIB would more than double the total of investments in infrastructure, to almost 4% of GDP from around 2%[7].

For sanitation, especially, such proposal would also mean a yearly average (R$ 13.5 billion) above to the average obtained in the last 8 years (R$ 8.9 billion) as shown on Chart 14.

Note, however, that a quantitative change is not enough. The challenge of infrastructure demands a qualitative change. As an example, doubling investments in water provision and sewage would not be able to, alone, promote universalization of services in an acceptable timetable. Concurrently to an investment increase, it would be necessary increasing efficiency and a noticeable improvement on productivity of services delivered, showing the importance for infrastructure of improving management and planning.

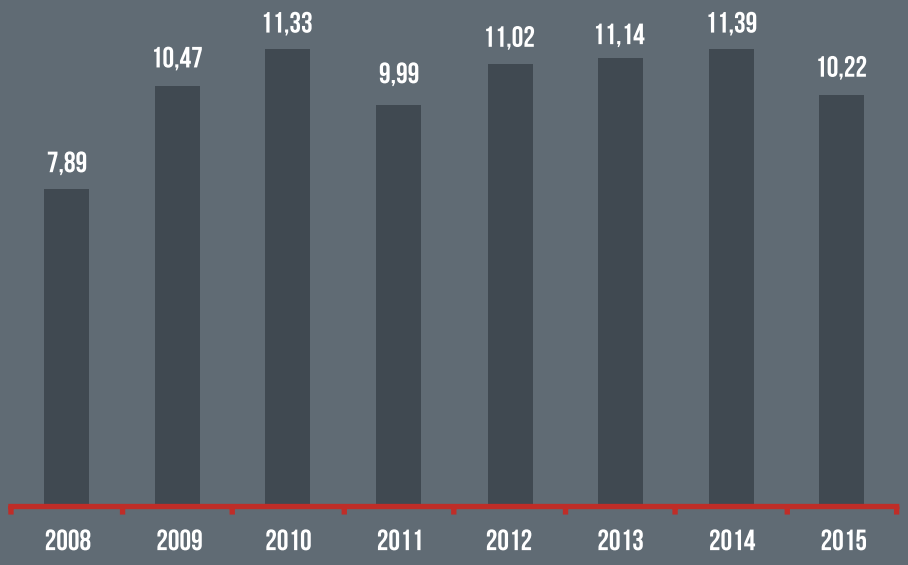
5 fetcemg.org.br/site/?p=3377.

6 Part of such braking is also related to the crisis in Europe and the slower expansion of the Chinese economy.

7 Such estimate was based on the GDP at 2010 (R$ 3,675 billion) and on the average investment in infrastructure, that is R$ 804 billion over five years or R$ 160.8 billion.

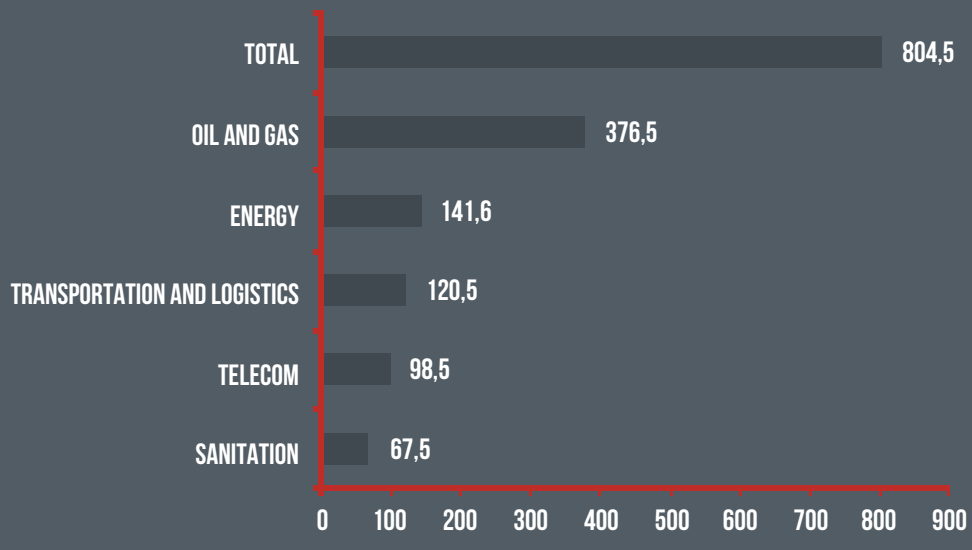
8 Oliveira, Scazufca and Marcato (2010). In this work, the authors argue that at the current pace of investments, sanitation universalization would be achieved in Brazil only by 2060. By doubling investment levels and increasing productivity by 30%, universalization would take place in 2024.

CHART 14: YEARLY INVESTMENT LEVEL IN SANITATION (R$ BILLION AS OF 2014)



Source: SNIS 1995-2013. Elaboration: GO ASSOCIADOS

CHART 15: INVESTMENT NEEDS IN BRAZIL 2011-15 (R$ BILLION)



Source: (Abidib, 2011)

#3.2 [EXAMPLES OF BOTTLENECKS]

The next subsections illustrate some of the most obvious bottlenecks in infrastructure in Brazil. This list does not intend to be exhaustive.

#3.2.1 [PORTS]

The Brazilian port system comprises 166 ports, of which 129 are specialized terminals or privately owned and used port complexes, whilst 37 ports are public - 3 of which are on rivers. Out of 34 public sea ports, 18 are directly run by the State (through the Companhias Docas - companies where the main shareholder is the State) and the remaining 16 are delegated, granted or had their management transferred to third parties, state governors namely (BRITO, 2013).

CHART 16 indicates that 10 of the largest Brazilian ports are in acceptable (6) or poor (4) conditions. Brazil is ranked 61 in the World Bank list for the time required to clear entry and departure of ships at ports, averaging 5.8 days - while in China, this time is 0.4 day, in Germany is 0.7 day and in the United States, it is 1.1 day. Brazil was ranked 122 in a World Economic Forum listing 144 countries according to quality of ports (SCHWAB, 2014).

Sea access to most Brazilian ports are in poor shape due to the channel silting, requiring permanent, serious investment in dredging (BRITO, 2013).

Aiming to eliminate such bottlenecks, investments in the area of R$ 7.5 billion will made to ports. For PAC 1, Federal Administration invested R$ 1.88 billion. R$ 745 million were budgeted to the Dredging National Program and R$ 1.14 billion to works for improving port infrastructure. For PAC 2, forecast investments for the period from 2011 to 2011 are approximately R$ 160 million for the Dredging National Program, R$ 1.5 billion for port infrastructure and R$ 350 million for logistics intelligence. From 2015 on, it is expected that investments in Brazilian ports reach R$ 2.8 billion. R$ 1.5 billion will be destined for dredging works and R$ 1.3 billion for infrastructure works (SECRETARIAT OF PORTS, 2014).

BRAZIL WAS RANKED 122 IN A WORLD ECONOMIC FORUM LISTING 144 COUNTRIES ACCORDING TO QUALITY OF PORTS

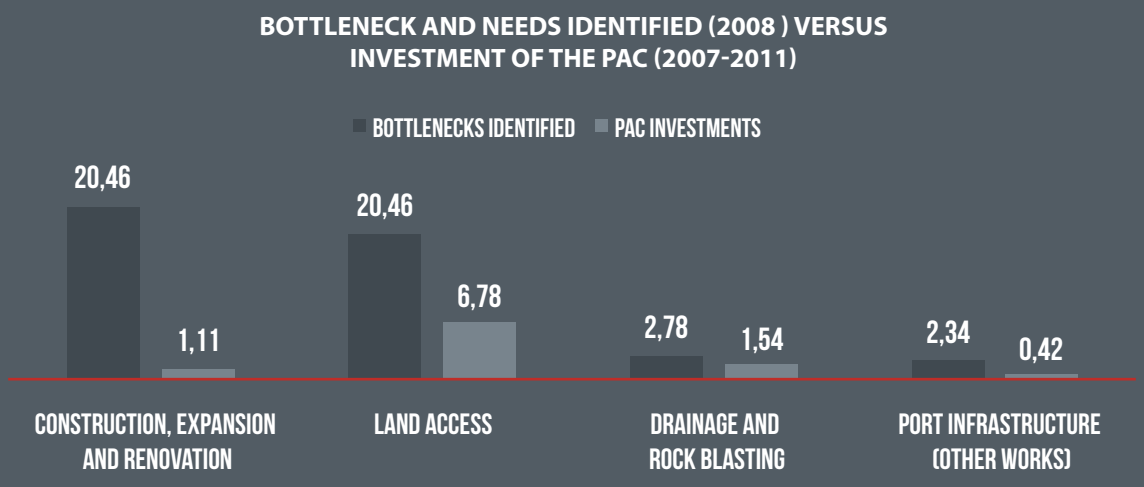
However, for Brito, 2013, the national dredging emergency plan for 2007-2012 completed just 52% of works, so that silting persists limiting the access of large-size ships to ports or forcing transshipments that increase the ship's stay and raise operational costs.

CHART 17 shows that out of 265 works labeled as essential to end bottlenecks in ports, only 51 were scheduled in the government's main infrastructure program (PAC) (NETO et al., 2009).

CHART 16: SITUATION OF PORTS IN BRAZIL

Drafted by GO ASSOCIADOS.

CHART 17: BOTTLENECKS AND INVESTMENTS IN PORTS



Source: (NETO et al., 2009)

#3.2.2 [AIRPORTS]

A survey conducted among 144 countries by the World Economic Forum on the quality of air transportation, Brazil was ranked 113th (SCHWAB, 2014). CHART 18 highlights the capacity gap of airports in Brazil on 10 of surveyed airports; all suffer from lack of capacity when landing and taking off requests and maximum capacity are compared.

Such figures become more worrying when a FIESP study (FIESP-IDT, 2013), found that the average number per hour of landings and take-offs in Brazil is 38, only 43% of the international average (88).

CHART 19 shows that in 2009, 19 out of the 20 main airports in Brazil suffered from bottlenecks, based on lane, parking and passenger terminals (TPS).

Almost all passenger terminals in Brazil were exhausted of capacity by 2009. At the same line, several parking areas saw demand way above supply and Congonhas airport had lane limitation for landings and take-offs. By the same time, Guarulhos was expected to experience the same limitation for some specific time slots.

More specifically, CHART 20 details some airport saturation evidences by 2009, as well as forecasts the maximum date when such saturation would occur. It is clear the most severe bottlenecks presented by Brazilian airports are in the ground side where passengers are processed. However, the study also found indication of saturation in the air side.

In August 2011, ANAC carried out the first auction for granting rights for building, maintaining and exploring airports. The São Gonçalo do Amarante Airport, in Rio Grande do Norte, was auctioned for R$ 170 million for a 28-year grant. It is estimated that the winning consortium invests R$ 650 million in the construction of terminals and the operation of the airport9.

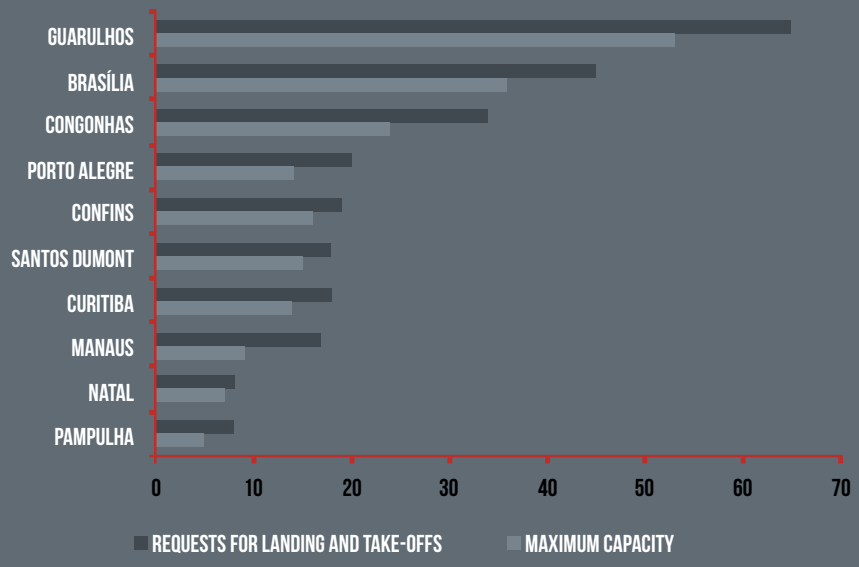
Also, it was granted to the private sector the airports of Guarulhos (São Paulo), Viracopos (São Paulo), Juscelino Kubitschek (Brasilia), São Gonçalo do Amarante (Rio Grande do Norte), Galeão (Rio de Janeiro), and Confins (Minas Gerais); there are 11 airports that the government aims to grant to the private sector. The next round of grants may include airports in Curitiba, Recife, and Cuiabá. These airports were included in an explanatory note sent by the Executive to Congress about the forecast of revenues from grants and permits for 2015. These airports have national relevance. Combined, these airports received approximately 16.5 million passengers in 2013. The Recife Airport received 6.8 million, Curitiba Airport, 6.7 million and Cuiabá Airport, 3 million.

Additionally, Brasília aims to implement a regional aviation program that is included to the Federal Administration's Logistics Investment Program. The program aims to place some 32 million people living in mid-sized cities at a maximum distance of 100 kilometers from airports serving commercial flights. The program will invest R$ 8.7 billion for renovating and expanding 270 airports across the country. Smaller airports usually cause big losses to states and cities in charge of administering them. For these cases, the PPP model has proved ideal, as by sharing risks with the public sector potential private partners are attracted to carry out the required investments. Also, improving management and operation of these airports.

Bottlenecks in the air transportation sector are clear in Brazil. This, added to the increase in demand seen in the last years, makes a huge increase in investments critical, in order to get rid of the main constraints.

9 Data extracted from the ANAC website - www.anac.gov.br. Accessed in March 02, 2015.

CHART 18: AIRPORT CAPACITY GAP



Source: Aviões (2009)

CHART 19: BOTTLENECKS IN AIRPORTS

	Airport	Bottlenecks		
		Pista	Pátio	TPS
SP	Garulhos		✓	✓
	Cogonhas	✓ Limitada	✓	✓
	Viracopos			
RJ	Galeão			✓
	Santos Dumont		✓	✓
BH	Confins			✓
	Pampulha			✓
Others	Brasilia		✓	✓
	Porto Alegre			✓
	Curitiba			✓
	Recife			✓
	Salvador		✓	✓
	Fortaleza			✓
	Manaus			✓
	Cuiabá		✓	✓
	Natal		✓	✓
	Florianópolis		✓	✓
	Vitória		✓	✓
	Belém			✓
	Goiânia		✓	✓

Source: BNDES (2009)

CHART 20: EVIDENCES OF SATURATION IN AIRPORTS

Accelerated growth brought challenges to the infrastructure capacity in 2009

		Air side[1]			Ground side
	Airport	Lane DECEA	Lane ITA	Parking area[2]	TPS
SP	Guarulhos	(2030)	(2030)	Saturated	Saturated
SP	Congonhas	Limited	(2014)	Saturated	Saturated
SP	Viracopos	(2020)	(2020)	(2014)	(2014)
RJ	Galeão				(2030)
RJ	Santos Dumont	(2030)	(2030)	Saturated	(2030)
BH	Confins			(2020)	Saturated
BH	Pampulha	(2030)		(2014)	(2014)
Others	Brasília	(2030)	(2030)	Saturated	Saturated
Others	Portfólio Alegre	(2030)	(2030)	(2030)	Saturated
Others	Curitiba			(2030)	(2020)
Others	Recife	(2030)		(2030)	(2020)
Others	Salvador	(2020)	(2030)	Saturated	(2014)
Others	Fortaleza			(2030)	Saturated
Others	Manaus			(2020)	(2030)
Others	Cuiabá	(2030)		Saturated	Saturated
Others	Natal			Saturated	(2014)
Others	Florianópolis			Saturated	Saturated
Others	Vitória	(2030)		Saturated	Saturated
Others	Belém			(2014)	(2030)
Others	Goiânia	(2030)		Saturated	Saturated

With restrictions today

Need to invest until 2030

Current capacity sufficient until 2030

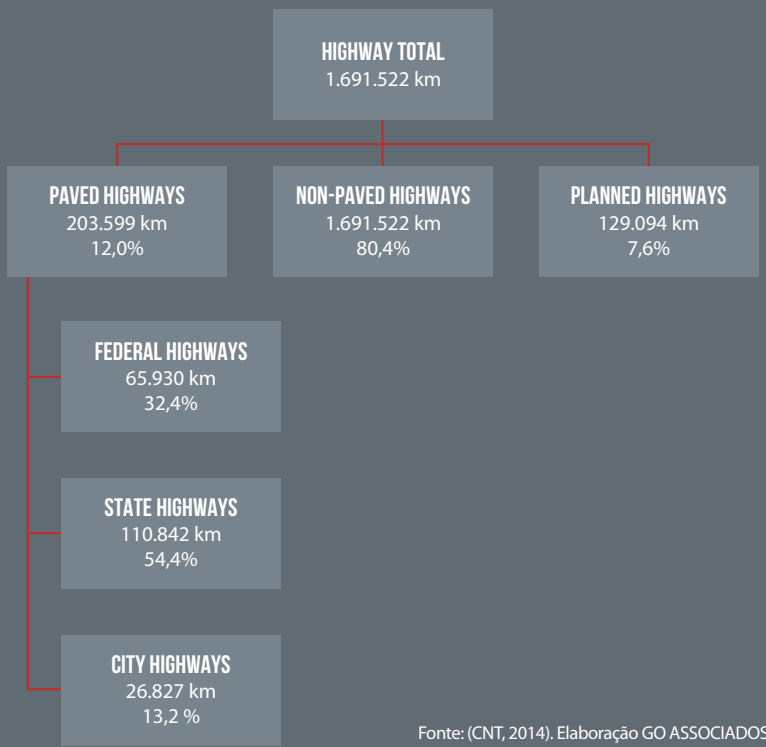
( ) Year limit for saturation

1 Considering same growth level both for general aviation and regular aviation

2 Does not consider equipment for moving passengers (such as buses, stairs) which may affect the service level as perceived by the passenger

Source: ITA; DECEA; team's analysis

CHART 21: LENGTH OF BRAZILIAN HIGHWAY GRID



Fonte: (CNT, 2014). Elaboração GO ASSOCIADOS

#3.2.3 [HIGHWAYS]

The next subsection is based in a survey carried out by the National Transportation Confederation (Confederação Nacional do Transporte, CNT) in 2014. According to CNT's survey, the highway grid was laid out over Brazil as shown by CHART 21. The chart reveals a very low percentage of paved highways, indicating that progress has to be made in this area.

When compared against countries with similar size of Brazil, one can see that Brazil has the smaller paved highway density with 23.9 kilometers of infrastructure for every 1,000 kilometers2 of area, as shown in CHART 22.

In addition to the short dimension of the highway grid, other problems can be seen in relation to the quality of existing paved ways. According to the World Economic Forum's Global Competitiveness Index, released in September 2014, the quality of Brazilian highways was ranked 122th among 144 countries surveyed, behind Chile (31th), Suriname (70th), Uruguay (90th), Bolivia (95th), Peru (102th) and Argentina (110th), all located in South America.

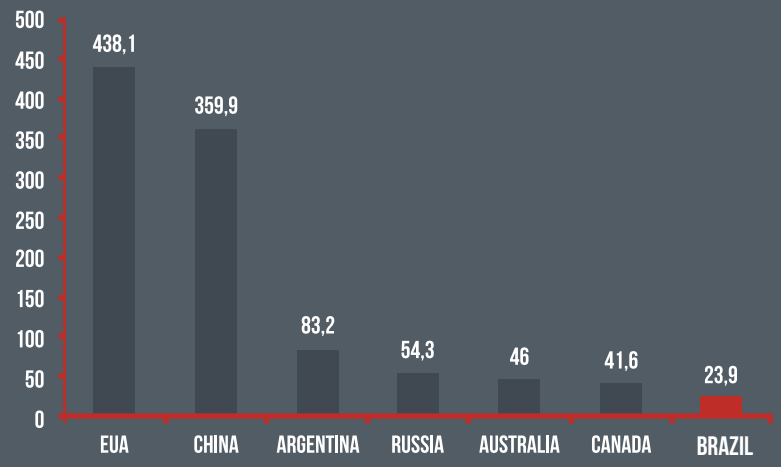
Highway infrastructure was assessed by a scale from 1 (extremely underdeveloped - among the worst in the world) to 7 (broad and efficient - among the world's best) during the period from 2013 to 2014. In the Global Competitiveness Index, Brazil scored 2.8 as per CHART 23.

The figures obtained by CNT are also worrying. According to the survey carried out by the institution and summarized in CHART 24, 62% of highways have acceptable, bad or poor conditions (CNT, 2014).

ACCORDING TO THE WORLD ECONOMIC FORUM'S GLOBAL COMPETITIVENESS INDEX, RELEASED IN SEPTEMBER 2014, THE QUALITY OF BRAZILIAN HIGHWAYS WAS RANKED 122TH AMONG 144 COUNTRIES SURVEYED

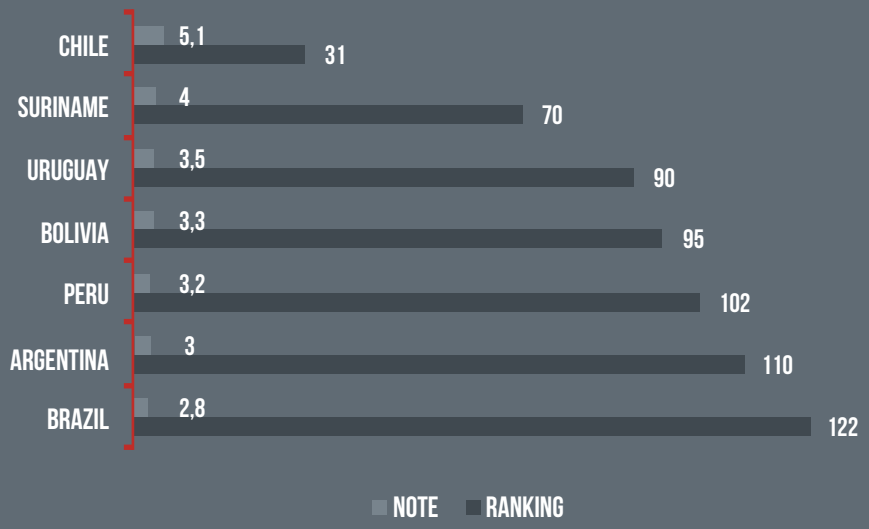
Relevant findings emerge when data from public highways is segregated from data on highways under private management. First, the public sector manages a higher number of highways (80.7%) than private managers. Secondly, it is possible to see that private managers have more efficiency in providing infrastructure of better quality; as computed by (CNT, 2014) only 29.3% of government-managed highways were ranked as Excellent or Good. The remaining 70.7% have some sort of deficiency and are ranked as Acceptable (42.1%), Bad (20.2%) and Poor (8.4%). In the other hand, 74.1% of granted highways were ranked as either Excellent or Good. 25.9% are ranked as Acceptable, Bad or Poor. (CHART 25)

CHART 22: PAVED HIGHWAY GRID DENSITY PER COUNTRY (KM/1,000 KM²)



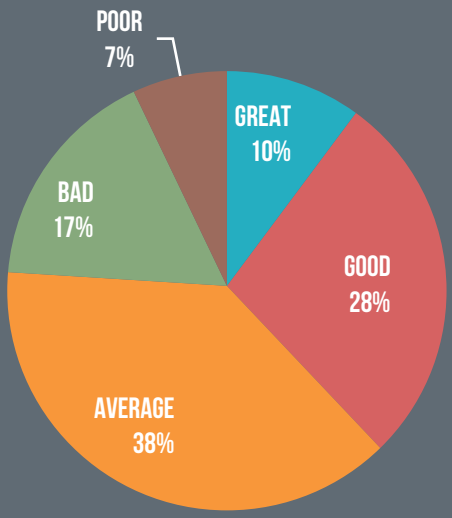
Source: (CNT, 2014), Drafted by GO ASSOCIADOS

CHART 23: HIGHWAY QUALITY IN SOUTH AMERICA (2014)



Source: (CNT, 2014), Drafted by GO ASSOCIADOS

CHART 24: QUALITY OF BRAZILIAN HIGHWAYS (2014)



Source: (CNT, 2014)

CHART 25: GENERAL STATUS RANKING - PUBLIC AND GRANTED MANAGEMENT

General Status	Granted Management		Public Management	
	Km	%	Km	%
Great	7.099	37,4	2.879	2,6
Good	6.962	36,7	20.421	25,7
Average	4.125	21,8	33.483	42,1
Bad	657	3,5	16.052	20,2
Poor	117	0,6	6.680	8,4
TOTAL	18.960	100,0	79.515	100,0

Source: (CNT, 2014)

As for highway quality per region, the South and Southeast regions show the highest percentages of highways ranked as Excellent or Good - 51.8% and 39.6% respectively. In the other hand, the North region has the highest proportion of highways ranked as Acceptable, Bad or Poor (82.3%), followed by Mid-West and Northeast regions with 69.3% and 65.4%, respectively. It is worth noting that the improvement on the overall ranking, as seen at the total of highways surveyed, affected the results for the North, Mid-West and Northeast regions, indicating a slight improvement of highways in these regions when compared against results of the 2013 edition of this survey.

The deficiency level of Brazilian highways is a direct consequence of the historically low investment levels in infrastructure. Albeit the absolute amount of investments have increased by 2007, the figures are still behind the necessary for reducing gaps that compromise transportation performance.

An analysis of the resources invested in the sector in relation to the country's GDP shows an expressive decreasing trajectory as can be seen in CHART 26. The proportion of resources from the Federal Administration in transportation infrastructure, in relation to the GDP, which was 1.8% in 1976, was only 0.3% in 2013. Furthermore, it is possible to realize that the amounts invested in the last years were not translated into significant improvements or in efficiency and productivity gains for the transportation sector.

Improper investments in transportation infrastructure derail the sector's development and maintain the system inefficiency for moving cargo and passengers. Rising costs caused by the improper infrastructure poses barriers to the country's growth. Thus, it is critical that the national transportation system's improvement and extension are goals pursued by the Federal Administration.

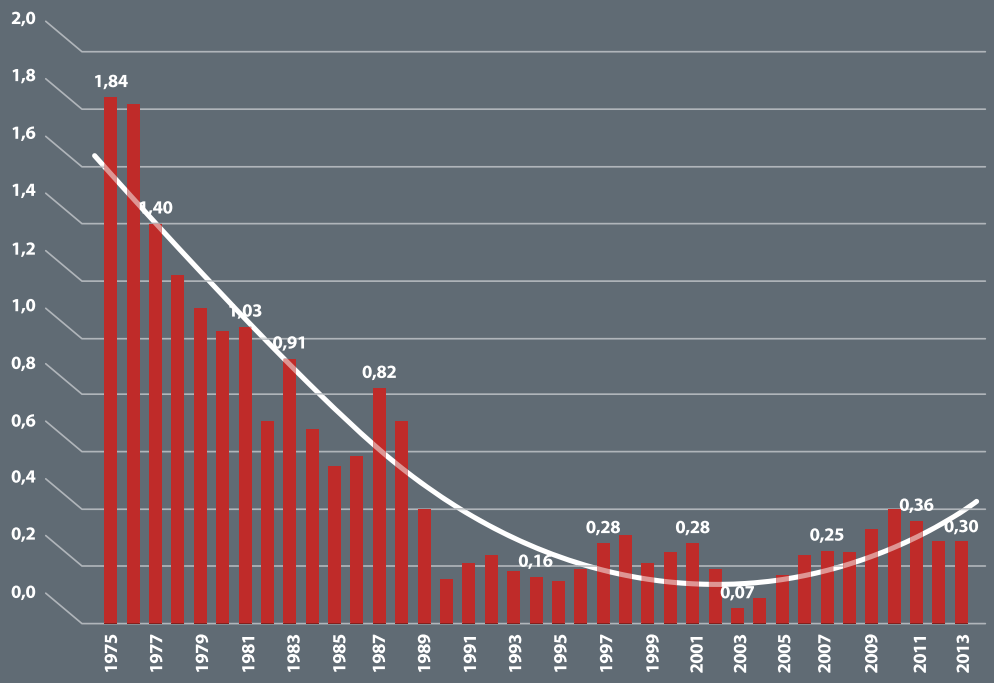
PAC, conceived as a strategic plan for resuming investment in Brazil's structuring sectors, aims to eliminate barriers to the country's economic growth. In 2014, R$ 14.36 billion - 85.3% of the R$ 16.84 billion budgeted for transportation in the Yearly Budgetary Bill - will be invested in the Transportation section of the PAC. From this amount, R$ 10.50 billion are earmarked for highways, with R$ 6.5 billion already paid until August. Comparing the budget execution as described above, it is possible to infer that all investments paid in 2014 for highway infrastructure was made through PAC, which means that this program is the government's only active investment tool for highway infrastructure.

Despite being the mechanism adopted by the Federal Administration, PAC is not effective. According to CHART 27, only 22.2% of all works scheduled for highways were completed, with the remaining 77.8% still being executed or awaiting permission to start. The largest share of works in initial stages are found in the Northeast region, with 32.2% of works still not executed, followed by the South region with 23.7% Thus, results presented in the PAC Transportation 10th Balance make clear how difficult it is to launch projects under this program.

Face to the hardship that the government deals with to implement the required improvement works to the transportation sector, strategic alliances with the private sector arise as the best alternative. The participation of the private sector, that in Brazil takes place mainly by grant contracts, adds higher operational efficiency and agility to management of investment projects in highways. Less paperwork, added to private sector's contract procedures, allows that works receive the required resources faster.

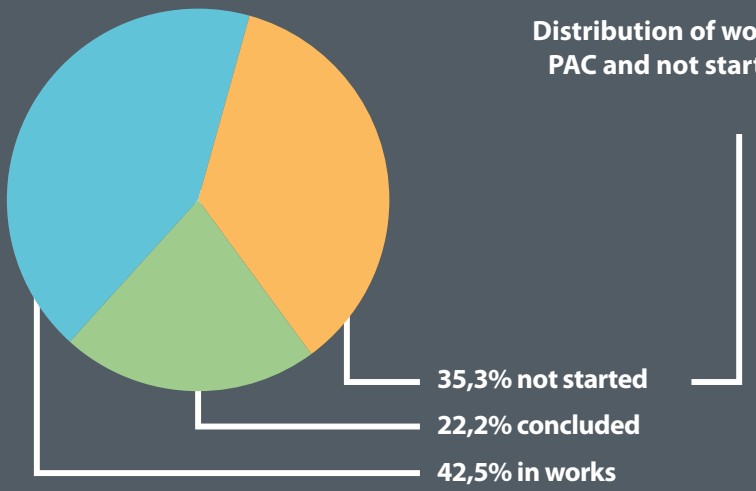
Between 2009 and 2013, private investments in highways increased by almost 125%, which inflation adjusted for the period, equal to 31.5%. Investments accumulated until June 2014 in suitability and expansion of the private highway grid reached R$ 3.4 billion, an increase of 9.4% against 2009 when investments totaled R$ 3.1 billion. When compared with the total of investments performed until June 2013, that is R$ 2.8 billion, there is an increase of 21.3% in the first half of 2014. This data is graphically displayed in CHART 28.

CHART 26: EVOLUTION OF FEDERAL INVESTMENTS IN TRANSPORTATION INFRASTRUCTURE (1975-2013) INVESTMENT / PIB (%)



Source: (CNT, 2014)

CHART 27: EVOLUTION OF PAC TRANSPORTATION WORKS - BRASIL/2014



Distribution of works included in PAC and not started per region

Note: interventions classified as preparatory, in tender and hired in the 10th PAC Balance were considered as not started.

Source: (CNT, 2014)

Due to clear difficulties on maintaining and expanding the highway grid, the Federal Administration created the Logistics Investment Program, aiming to input the required investments on transportation infrastructure through private operators. The LIP is a new granting model with the following aspects:

1. It is mandatory to duplicate part or the whole highway segment that is granted as per the highway needs defined in the contract
2. Toll charges are permitted only after 12 months of grant and by completing 10% of the duplication works
3. The winning bidder is defined by the lower fee per kilometer charged from users.

According to data released by the Empresa de Planejamento e Logística (EPL), LIP may encourage investments of R$ 46 billion in highway transportation at its first phase, which is equal to 18.2% of the R$ 252.3 billion destined to the national transportation system. At its first phase, the program aimed to grant more than 7,000 kilometers of highways to the private sector.

However, only 4,248 kilometers were granted up to now. LIP failed to launch the tenders within schedule and also failed to transfer to the private sector all the segments proposed. Among the reason for delaying tenders and signing contracts, there are the poor quality of technical projects and the high capital investment required that generated uncertainties among private investors.

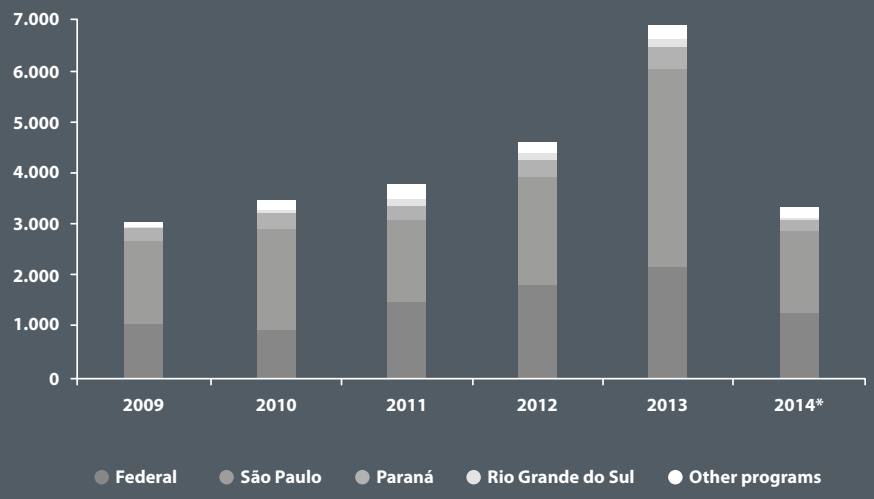
AThus, it is possible to say that the program reinforces the participation of the private sector in logistics and transportation infrastructure projects. However, the method through which its actions were implemented requires adjustments to make it stronger and to ensure trust is given by the private sector to the grants promoted by the Federal Administration.

Due to the population increase, expansion of production away from the coast and the perspective of resuming economic growth at mid-term, it is possible to conclude that the highway grid is not adequate, both quantitatively as qualitatively. Despite combined efforts on grants and public investment, the highway transportation system still suffers from structural problems.

According to CNT's 2014 Logistics and Transportation Plan, 618 mandatory works were identified for improving highway transportation, all requiring investment estimated at R$ 293.88 billion - which represents 29.77% of total investment estimated for the Brazilian logistics and transportation sector. The required works are classified as renovation, duplication, recovery, construction and paving highways (CHART 29).

The region where most required works were identified is southwest, demanding R$ 101.36 billion for 233 work projects. Next is the Northeast region, with 230 projects requiring R$ 88.71 billion. The South region comes third, with 183 projects requiring R$ 67.77 billion. Lastly, 125 projects were identified for the North region and 92 projects for the Mid-West, demanding R$ 55.08 billion and R$ 48.77 billion, respectively. CHART 30 shows a breakdown of investments in highway infrastructure in regions.

CHART 28: INVESTMENT IN GRANTED HIGHWAYS - BRAZIL / 2009-2014 (CURRENT R$ MILLION)



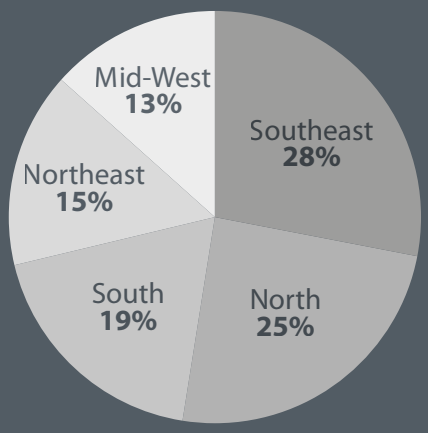
Source: (CNT, 2014); Drafted by GO ASSOCIADOS * Data accumulated until June 2014.

CHART 29: REQUIRED INVESTMENT IN HIGHWAY INFRASTRUCTURE - BRASIL/2014

Category	# of projects	Extension/Quantity/Volume	R$ (billion)
Highway renovation	187	14.605 km	10,17
Highway duplication	74	14.663 km	137,13
Pavement recovery	175	26.841 km	48,25
Highway construction	85	8.691 km	47,33
Highway paving	97	12,374 km	51
Total	618	-	283,88

Source: (CNT, 2014)

CHART 30: REQUIRED INVESTMENT IN HIGHWAY INFRASTRUCTURE PER REGION - BRASIL/2014



Fonte: (CNT, 2014)

#3.2.4 [SEWAGE]

Sanitation in Brazil presents severe gaps. As opposed to other sectors where regulation is centralized, in the sanitation sector troubled, unequal and fragmented institutions are found.

CHART 31 shows that only 82.5% of the Brazilian population is served by treated water or that some 33 million are lacking this service. The problem is acute in the North region, where it serves barely half of the population (52.4%) whilst the Southeast region serves 91.7% of its population.

Data on sewage shows an even more severe situation, as only 48.6% of the overall population is served by this service. This means that approximately 99 million people do not have their sewage treated. Again, the North and Southwest regions show the worst and the best performances, respectively. At the first, only 6.5% of total population has access to the sewage network; but in the Southeast region, 77.3% of total population is serviced.

Of all sewage generated, just 39% is treated. Thus, some 6 billion cubic meters of untreated sewage is poured into the environment every year. The North region treats just 14.7% of residues, whereas the Mid-West region has the best performance by treating 45.9% of the sewage produced.

As for efficiency, distribution loses approximately 37% of water, which represents some 5.7 billion cubic meters. The North region loses

ONLY 48.6% OF THE OVERALL POPULATION IS SERVED BY THIS SERVICE. THIS MEANS THAT APPROXIMATELY 99 MILLION PEOPLE DO NOT HAVE THEIR SEWAGE TREATED.

50.7% of the water distributed, while the Southeast loses 33.3% of water - the best performance in the country.

The evolution of the main indicators mentioned is shown at CHART 32 and CHART 33.

Although it is possible to see improvements both at the water treatment and sewage treatment levels, progress at the sewage coverage has been very slow. A slight decrease of 0.2 pp can be seen when compared against water supply levels at 2012-2013. However, for the period 2004-2012, despite relatively low total levels, results are positive: the water treatment network improved by 6.3 pp; losses from distribution were also mitigated, with an 8.7% gain against the amount of water wasted in 2004. On what concerns sewage collection, an improvement of almost 15 pp was obtained at the 2004-2013 period, but total of treated sewage progress slower, improving by 5.3 pp.

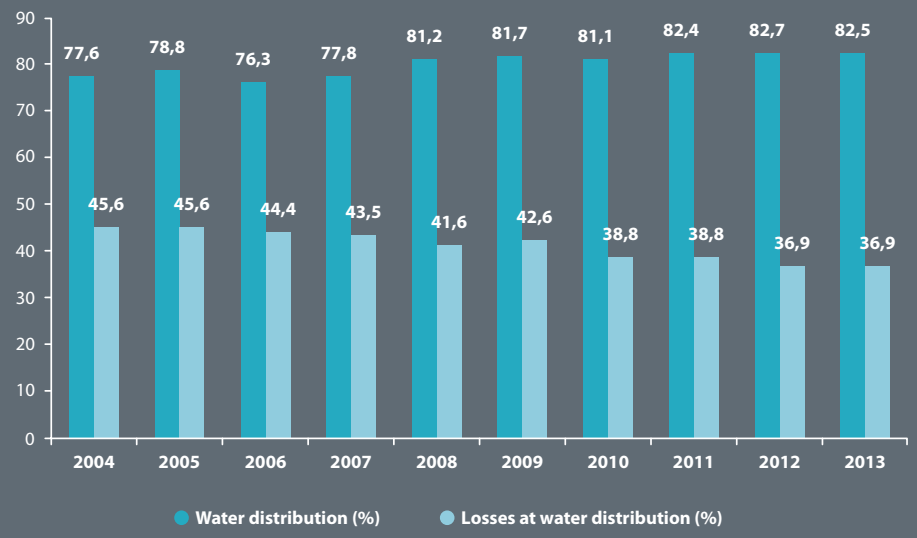
By breaking the data into regions, a large asymmetry on sanitation infrastructure emer-

CHART 31: BRAZILIAN SANITATION SECTOR INDICATORS (2013)

Region	Rate of network service (%)		Rate of sewage treatment (%)		Loss rates on distribution (%)		
	Water		Sewage collection		Generated sewage	Collected sewage	Losses
	Total	**Urban**	**Total**	**Urban**	**Total**	**Total**	**Total**
North	52,4	62,4	6,5	8,2	14,7	85,3	50,8
Northeast	72,1	89,8	22,1	29,3	28,8	78,1	45,0
Southeast	91,7	96,8	77,3	82,2	43,9	64,3	33,4
South	87,4	97,4	38,0	44,2	35,1	78,9	35,1
Mid-West	88,2	96,3	42,2	48,6	45,9	91,6	33,4
Brazil	**88,2**	**93,0**	**48,6**	**56,3**	**39,0**	**69,4**	**37,0**

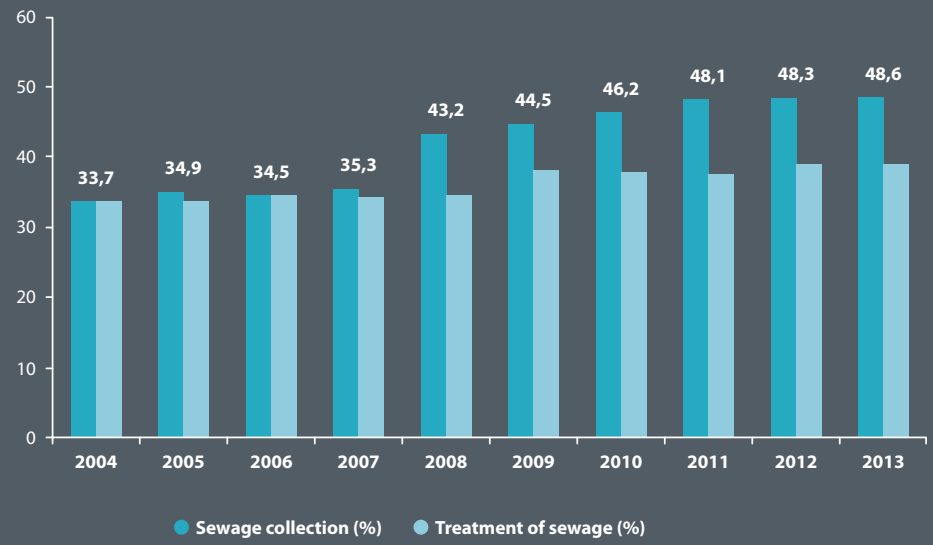
Source: (SNSA/MCIDADES, 2014

CHART 32: EVOLUTION OF SEWAGE INDICATORS: WATER (%)



Source: (SNSA/MCIDADES, 2014), Drafted by GO Associados

CHART 33: EVOLUTION OF SEWAGE INDICATORS: SEWAGE (%)



Source: (SNSA/MCIDADES, 2014), Drafted by GO Associados

ges among Brazilian states. Eight Brazilian states are unable to distribute water for 90% of their urban population: Ceará (88.6%), Pernambuco (84.6%), Amazonas (81.7%), Maranhão (75.7%), Acre (57.4%), Pará (53.6%), Rondônia (51.2%), and Amapá (39%) as shown in CHART 34.

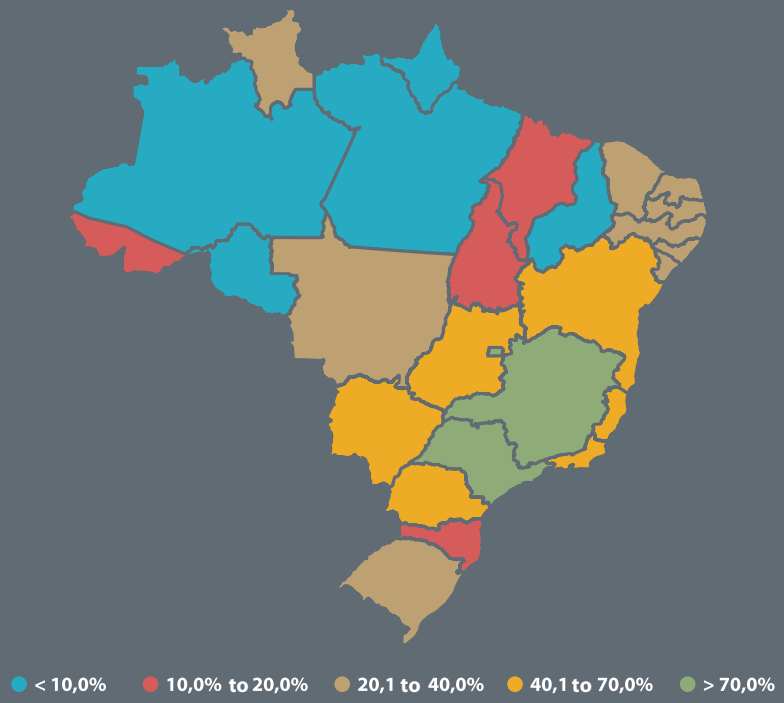
According to CHART 35, only two states collect more than 70% of urban sewage: São Paulo (90.3%) and Minas Gerais (84.8%). And five states treat less than 10% of sewage: Piauí (9.53%), Amazonas (7.44%), Pará (5.04%), Rondônia (4.83%), and Amapá (4.6%)

CAs shown on CHART 36, distribution losses are also high: 13 Brazilian states lose more than 40% of their distribution, and only Goiás and the Brasilia shown losses between 20% and 30%, and the latter has the lowest ratio of losses (27.2%).

CHART 34: AVERAGE INDEX OF WATER SUPPLY IN CITIES (2013)

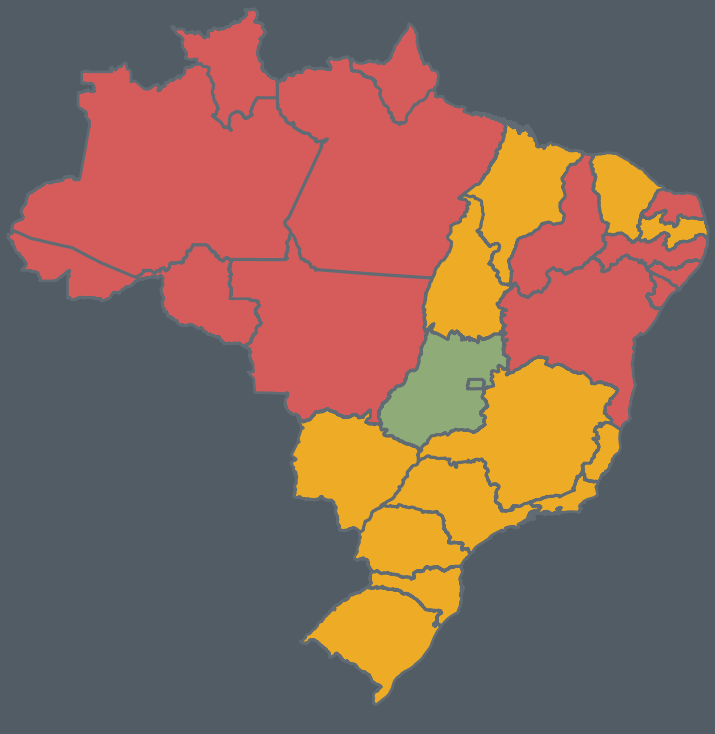
Source: (SNSA/MCIDADES, 2014) Drafted by: GO ASSOCIADOS

CHART 35: AVERAGE INDEX OF SEWAGE COLLECTION IN CITIES (2013)



Source: (SNSA/MCIDADES, 2014) Drafted by: GO ASSOCIADOS

CHART 36: INDEX OF LOSSES AT DISTRIBUTION (2013)



Source: (SNSA/MCIDADES, 2014) Drafted by: GO ASSOCIADOS

#4 [CONSTRAINTS TO PUBLIC INFRASTRUCTURE AND WORKS FINANCING]

#4 [CONSTRAINTS TO PUBLIC INFRASTRUCTURE AND WORKS FINANCING]

This section aims to discuss some of the key barriers to financing public infrastructure and works.

Rates charged on financing long term projects still represent a high opportunity cost for using resources to grant financing or purchasing long maturing debt bonds. Such fact shall be maximized at the current context of the Brazilian economy, where benchmark interest rate increases and a tighter spending control are lurking. In this regard, investors are attracted for short term investments referenced by the Selic rate.

CHART 37 shows the pattern of investment financing in Brazil, with projections until 2015. It is clear that local industry finances their investments mainly by retaining profits and loans from BNDES. Such situation is partly due to the lack of private credit, as existing loans are usually not so long (among 5 and 6 years) and indexed to interbank deposits.

The role of BNDES as financing source is expected to decrease as the market grows. This might be due to the capacity of the state-owned bank to serve all demands for financing by the industry and long term projects become more complex financially. This way, the development of capital markets is crucial for the Brazilian economy.

Currently, almost half of the investments in infrastructure in Brazil are made by the public sector, and the other half is carried out by the private sector. Raising investment in infrastructure in infrastructure rate will depend on efforts from

CURRENTLY, ALMOST HALF OF THE INVESTMENTS IN INFRASTRUCTURE IN BRAZIL ARE MADE BY THE PUBLIC SECTOR, AND THE OTHER HALF IS CARRIED OUT BY THE PRIVATE SECTOR.

both sectors. However, taking into account public sector's fiscal constraints and the willingness and capacity of investment by the private sector, it is reasonable to suppose that raising the investment rates requires increasing the participation of private sectors on overall investment and in infrastructure, particularly.

One of the main challenges related to PPP funding is adjusting the need for warranties along with the need for securitizing part of the receivable flow for grantees (Specific Purpose Vehicles, SPV) that allow for issuing bonds or taking loans from development banks such as BNDES.

Also, given the current economic context, which requires a fiscal adjustment to public accounts, where the Federal Treasury was the main conduit of resources that allowed for a large amount of loans by BNDES, one can expect many subsidized funding lines and investing programs to be reconsidered.

So, by placing the warranty issue facing to the less availability of traditional project funding schemes in Brazil, structuring capital has become a huge challenge. It should be noted that capital markets tend to be even stricter to-

wards the need for solid warranties than traditional development banks.

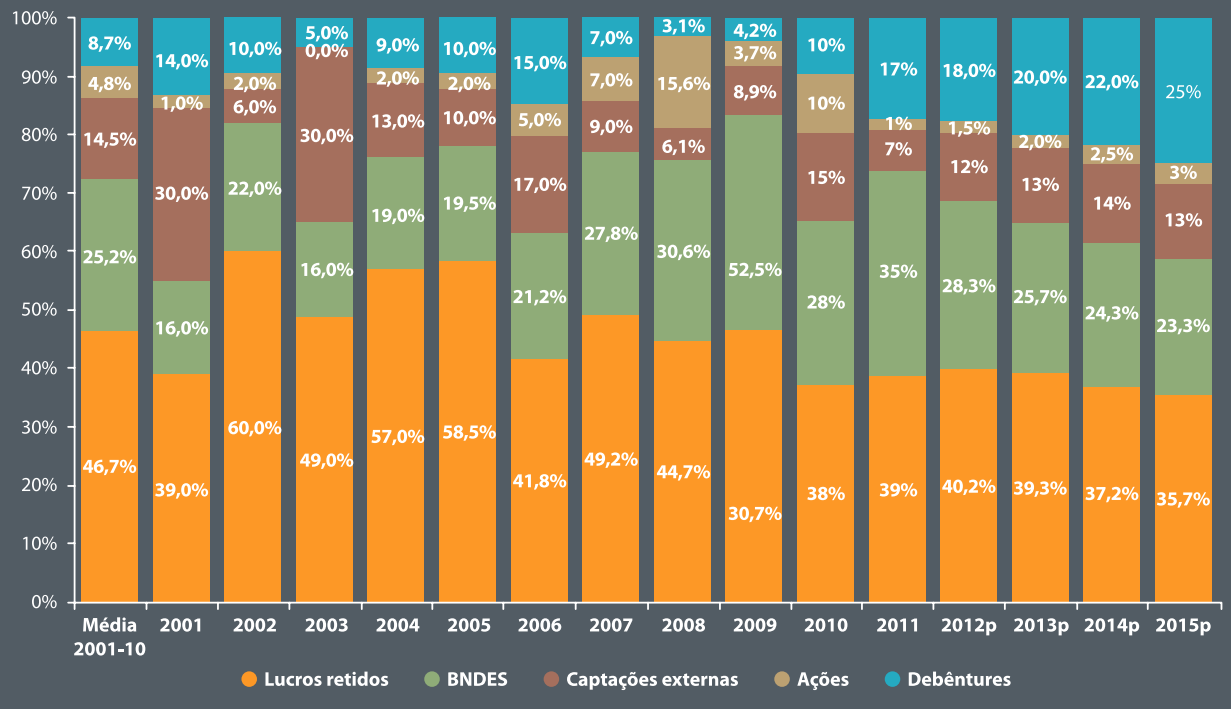
Considering all issues above, public entities face great difficulties to go on with the current warranty structure, as warranty needs occurs naturally upon a receivable flow[10] and not upon a stock of capital - so today's solution is very expensive, in terms of new public investment opportunities. Currently, for every R$ 1 of obligations from the public sector towards the private sector, it is demanded another R$ 1 in receivable flow as warranty, until minimum coverage levels demanded by banks lending the money are met.

Also, there is the question of minimum remuneration required by projects, so to fulfill private partner's minimum rate of attractiveness.

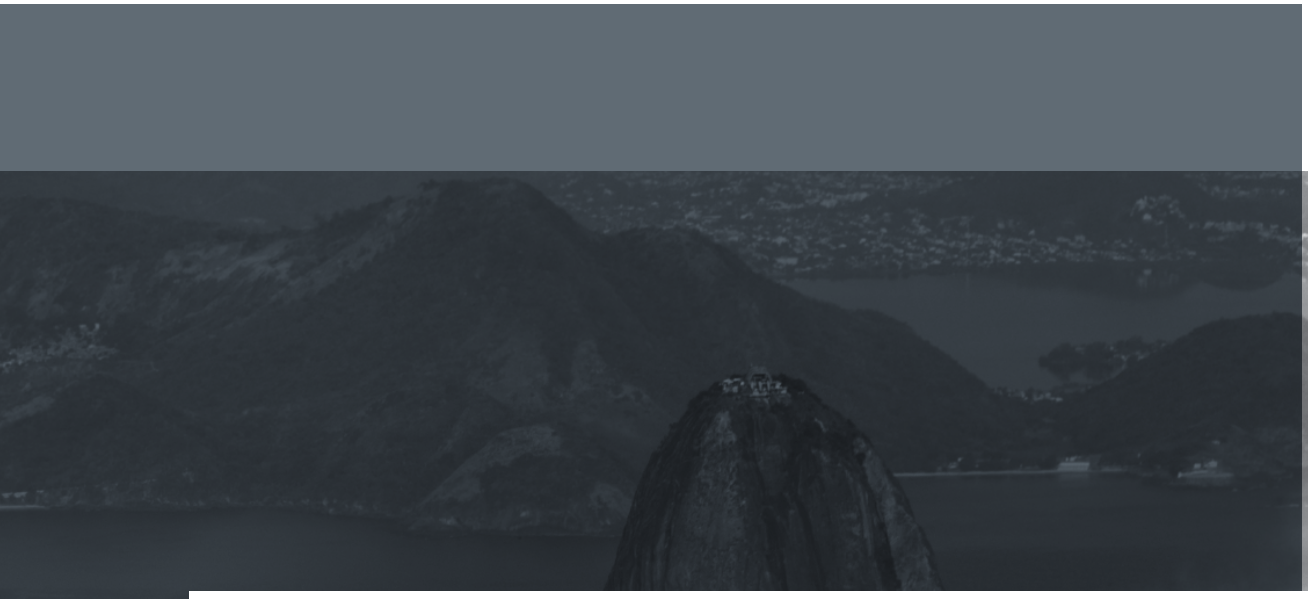
A great deal of discussion about project feasibility is around defining benchmark internal return rates for the project-base. If the benchmark rate is not suitable, a tender is more likely to not have bidders.

10 Government-linked income with mandatory provision or receivables coming from state-owned companies or active debt.

CHART 37: PATTERN OF INVESTMENT FINANCING TO BRAZIL'S INDUSTRY AND INFRASTRUCTURE



Source: (BNDES, 2011).



#5 [RECENT EVOLUTION OF PPPS AND GRANTS IN BRAZIL AND THE WORLD]

#5 [RECENT EVOLUTION OF PPPS AND GRANTS IN BRAZIL AND THE WORLD]

This section aims to highlight some of key aspects of international and Brazilian experiences with developing public-private partnerships. For the former, we will go through public-private partnerships in England, Australia and India, as well as results achieved by Latin American and the Caribbean countries, where PPPs were mostly deployed, above all due to the high investment deficits in economic and social infrastructure.

The Brazilian experience covers from the bottlenecks the country needs to overcome to the PPP legal framework, sectors and states where PPP projects are being considered.

#5.1 [THE INTERNATIONAL EXPERIENCE]

This subsection aims to highlight the key aspects and learnings from the international experience with public-private partnerships. For this, experiences from England, Australia, India, Latin America and the Caribbean will be reviewed.

#5.1.1 [OUTCOME FROM THE INTERNATIONAL EXPERIENCE]

There is no single definition for public-private partnerships, although most of them mentions executing a project by sharing risks related to the work and the operation in the contract between the public administration and the private partner. (ENGEL et al., 2009)

A typical definition for PPP, compared against the traditional execution by the public sector, is the temporary control of assets by the private partner and gathering investment and delivering services in a single contract.

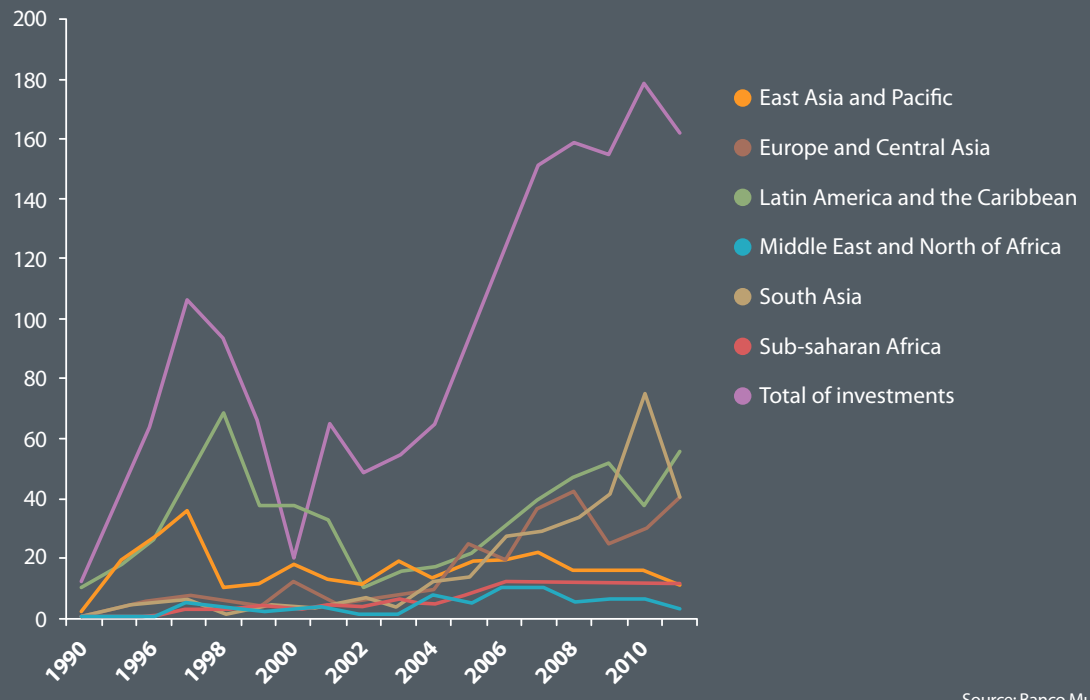
The use of the expression public-private partnership has to be made with caution internationally. In many cases, this concept covers grants in general, which may or may not include input off public resources, mixed controlled societies, joint ventures, franchises, outsourcing and even privatization. Some authors refer to projects that may be funded solely by charging fees, as grants, and save the expression public-private partners for projects that cannot be funded without governmental transfers.

Carrying out civil works and delivering public services through public-private partnerships, as determined by the administrative grant model established by Law # 11.079/2004, started in Australia by the end of the 1980s. However, the most ambitious initiative was launched by John Major in 1992, at the United Kingdom. His program, christened Private Finance Initiative, created opportunities for the participation of the private sector in delivering and modernizing public services, namely social infrastructure. It becomes an efficient alternative for dealing with the lack of public resources for executing high cost projects, due to the constraints posed by the Maastricht Treaty.[11]

Investments broken down by regions, as presented in CHART 38, shows that PPPs have not disseminated readily through Europe despite UK's pioneering, exceptions made to Spain, Portugal and some Eastern European countries. PPPs found a warmer home in Latin America and the Caribbean, especially through Chile's leadership, considered as the country who established the most robust legal framework for developing PPPs in the region. Recently, South Asia is catching up due mostly by India expanding investments by means of more than 800 projects in execution. Expanding investments in this region by PPPs is in contrast with stagnation in East Asia and the Pacific. This is caused by the 1997 crisis, that forced renegotiations and eventually in a partial or whole nationalization of partnerships. (ECONOMIST INTELLIGENCE UNIT, 2013; FRISCHTAK, 2013)

11 The European Central Bank's independence and credibility would be jeopardized by accruing excessive deficits by countries member of the European Union.

CHART 38: PPPS: GLOBAL INVESTMENT IN INFRASTRUCTURE BY REGION 1990, 1995-2011 - $ BILLIONV



Source: Banco Mundial.

#5.1.1.1 [UNITED KINGDOM]

The United Kingdom pioneered the development of public-private partnerships and has a mature market for this segment. Projects are developed and promoted by governmental secretariats and entities that also publish guidelines and standards for contracts to approve a project. Despite there is no specific public entity for the promotion and nurture PPPs, Central Government entities provide information and support to develop partnerships. (CMS, 2009).

In 2000, public and private sectors founded Partnerships UK together, aiming to support public-private partnerships in all stages, to contribute for developing policies and oversee the fulfillment of mandatory contract provisions. Partnerships UK, along with sub nacional governments, created Local Partnerships, aiming to guide and support these government levels on developing public-private partnership projects. Local Partnerships post standard rules for executing PPPs in several sectors, which is extremely important as compliance with the standard document is a pre-requisite for approving a project.

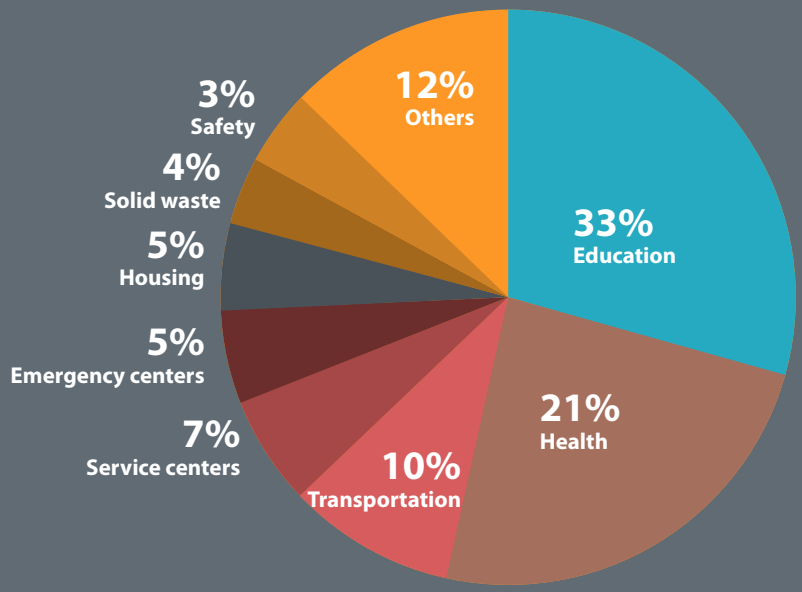
Since the start of Private Finance Initiative, in 1992, more than 700 projects have been executed, mostly in social infrastructure as education, health and security (CHART 39).

The methodology for assessing public-private partnerships is value for money, analyzing quantitative and qualitative benefits from executing a given project and delivering services through a PPP. Criteria assessed are:

- If services can be provided on long term contracts
- If it is possible to develop clear, objective indicators so to assess objectively the quality of service
- If the private sector is able to better manage project risks
- If there are evidences that the private sector can provide services with the expected quality

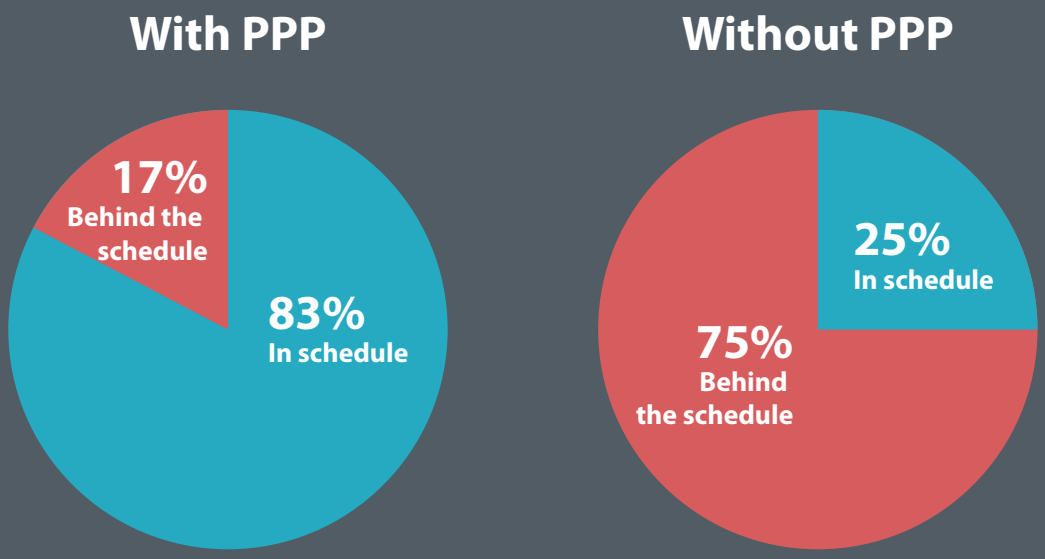
Studies suggest that PPP efficiency gains rise from delivering a project faster, along with fulfilling budgetary requirements, when compared against the traditional execution by the public sector. From 1992 to 2004, 83% of projects developed through PPPs were delivered in time, and only 22% had their contracts altered, whereas for other methods of physical asset delivery, the proportions are 25% and 75%, respectively (CHART 40).

CHART 39: PUBLIC-PRIVATE PARTNERSHIPS IN EXECUTION IN THE UNITED KINGDOM 1992-2012[12]



Source: HM Treasury

CHART 40: DEADLINE FOR DELIVERING WORKS WITH PPPS AND WITHOUT PPPS IN THE UNITED KINGDOM 1992-2004



Fonte: HM Treasury

12 The chart includes projects signed off until March 31, 2012. Projects terminated or concluded were not included.

#5.1.1.2 [AUSTRALIA]

Australia is another leader on developing public-partner partnerships, and it is considered a more mature market for developing such projects, by the Organization for the Economic and Co-operation Development (OECD). (OECD, 2007)

Executing PPPs is critical for developing the country's economic and social infrastructure, and is directly supported by government's secretariats and entities. When compared against other countries, the role of the Australian government in hiring these projects is less intense, given that states control the provision of infrastructure and service delivery in several segments such as health, education, justice and transportation.

The state of Victoria is the pioneer in executing PPPs. Since 2000, 22 projects were developed totaling more than $ 10 billion[13], mainly in education, health, security and sanitation. Partnership Victoria is linked to the Department of Treasury and Finance and provides support and guidelines for developing projects. Their guidelines help that tenders are conducted more transparently and consistently, maximizing opportunities for the private sector to submit efficient, innovative solutions.

By the end of 2012, by means of the Future Direction for Victorian Public-Private Partnerships document, the government signaled to the market the changes to be made to future PPP projects. As the State faces fiscal challenges along with limitations posed to financial institutions due to the growing demand for investments in infrastructure, the Victoria Government proposed some changes that later were adopted on the new guidelines for the State public-private partnerships:

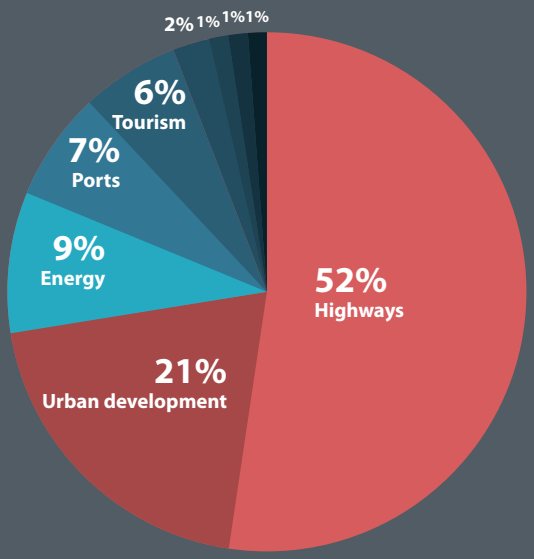
- To reinforce the value for money analysis
- To adopt funding alternatives such as partial resource inputs during the construction phase
- To reinforce inclusion of services directly connected to the end purpose of public sector in future projects (not only supplemental services or end-purpose supporting services)
- To develop PPP models for smaller projects
- To partially reimburse proposal costs for losing bidders, aiming to expand the tender competition level and attract better quality proposals.

13 As interest rates of May 24, 2014, $A10 billion is worth $ 9,615 billion.

#5.1.1.3 [INDIA]

India is a successful case with public-private partnerships among developing countries. Aiming to match high economic growth rates to the infrastructure provision, the government launched a strategy to encourage private investment through executing PPPs. More than 800 projects are underway in India, namely in highways and urban development (CHART 41). Key learnings from the Indian experience are the importance of project feasibility studies, support from government in several partnership stages, complying with simple, robust criteria for tender, and attention to environmental issues.

CHART 41: PUBLIC-PRIVATE PARTNERSHIPS IN EXECUTION IN INDIA 1997-2012



Fonte: Ministry of Finance, Government of India.

CHART 42: ENVIRONMENT FOR DEVELOPING PPPS IN LATIN AMERICA AND THE CARIBBEAN - 2012

Score	Country	Emerging 30-60	Developed 60-80	Mature 80-100
Latin America and the Caribbean	Argentina	Colombia	Brazil	
	Dominican Republic	Costa Rica	México	
	Ecuador	El Salvador	Peru	
	Nicaragua	Guatemala		
	Paraguay	Honduras		
	Venezuela	Jamaica		
		Panamá		
		Trinidad y Tobago		
		Uruguay		

Source: (ECONOMIST INTELLIGENCE UNIT, 2013)

#5.1.1.4 [LATIN AMERICA AND THE CARIBBEAN]

According to the ECONOMIST INTELLIGENCE UNIT (2013), investments in infrastructure are still leading Latin American and the Caribbean government priorities, ranging from infrastructure gaps in Costa Rica to sport events hosted by Brazil.[14] **In recent years, there has been an increase in the number of PPP Units and entities focused on developing projects, which has contributed for progress on legal and institutional frameworks in the region.**

Demand for infrastructure encourages countries to double efforts to attract more private investments and, consequently, developing public-private partnership projects has become more sophisticated. In the 1990s, the role of private sector at delivering public services has increased mainly through privatizations. This changed from 2000 to 2009, when 80% of private investments in Latin America and the Caribbean were made through Greenfield[15] projects and grants. Investments carried out by PPPs from 2005 to 2009 grew in the region, especially when compared against other regions that were severely hit by the 2008 crisis.[16]

As can be seen on CHART 42, the ECONOMIST INTELLIGENCE UNIT (2013) ranks countries in four categories for long term development of these projects: nascent, emerging, developed and mature. The total index ranges from 0 to 100 and is comprised of a weighted average of six items:

1. Legal framework
   - Regulation quality and consistency
   - Effective project selection and decision making
   - Transparent, competitive tender processes
   - Conflict resolution mechanisms
2. Institutional framework
   - Quality of institutions
   - PPP Contract and expropriation risks
3. Operational maturity
   - Public capacity to plan and oversee PPPs
   - Methods and criteria for granting projects
   - Risk allocation logging
   - Experience of grants on transportation and water sectors
   - Quality of grants on transportation and water sectors
4. Environment for investments
   - Political distortion
   - Business environment
   - Political support
5. Funding structures
   - Risk of default
   - Capital markets: infrastructure project funding
   - Marketable debt
   - Government support for low income users[17]
6. Development of partnerships in the context of sub national governments

14 The largest number of public-private partnerships in execution in Brazil is stadiums renovation - five projects in all.

15 Best Practices for Funding Public-Private Partnerships in Latin America and the Caribbean. World Bank (2011).

16 Greenfield investments are those involving incipient projects. Instead of investing in a joint venture or purchasing a company in a sector, the investor places their resources on constructing the required structure for the operation. Brownfield invesments are the opposite of greenfield invesments, as resources are destined to a company ready to operate and that, most often, will be renovated or demolished.

17 In this case, it is assessed subsidies granted by part of the government for low income users on electricity, water and transportation.

THE SUCCESS OF SOME PROJECTS DEVELOPED BY COUNTRIES WITH A SMALL NUMBER OF PUBLIC-PRIVATE PARTNERSHIPS IS DIRECTLY RELATED TO THE PERSPECTIVES WITH THIS ASSET BUILDING AND OPERATION MODEL IN THE REGION.

Although none of these countries can be classified as mature, most of them have presented improvement on indicators from 2010, and almost half of the sample is already categorized as emerging. The success of some projects developed by countries with a small number of public-private partnerships is directly related to the perspectives with this asset building and operation model in the region. **For instance, ports in Honduras, El Salvador, and Ecuador, along with railroads in Costa Rica and Dominican Republic are some of the projects that will gauge the weather for the future of public-private partnerships in Latin America and the Caribbean.**

> A pillar for building a favorable environment for private investment is the support of governments in charge of public works and public service delivery. In Peru, although social opposition has interrupted execution of some projects, government support remains strong and that, together with a positive climate for investing and the development of legal and institutional frameworks, ensured that the country was categorized as developed at the Infrascópio.

Chile is the best ranked country: 76.4 points out of 100. (CHART 43). According to Infrascópio, Chile achieved this result due to favorable environment for investments, a solid structure for funding and strong legal and institutional frameworks. The government operates in a proactive fashion and encourages the development of public-private partnerships. However, in relation to 2010, the country saw a reduction in the index due to lower investments in electric power caused by an increase in environmental barriers. Although the PPP Unit has built a high knowledge level, it faces issues with high turnover in staff and the technical team, resulting in delays for implementing projects.

Brazil's second place in the ranking is due to improvements in the legal framework, favorable environment to investments and development of partnerships on state and city levels. However, the lack of technical capacity for structuring projects is a large issue to be solved. Also, the position of Brazil in the funding structures category has decreased mostly due to infrastructure project funding by the BNDES and not developing alternative funding structures. BNDES funding at real interest rates near zero remove incentives for the participation of the private sector on funding infrastructure projects.

Colombia leads the group categorized as emerging, in which the total index lies between 30 and 60 points. In the last two years, the country was able to improve the environment for private investments, develop stronger funding structures and the legal framework benefited from a new PPP bill, which enhanced tender mechanisms and limited contract renegotiation. Uruguay, driven by a broader political support and new legislation, improved all indicators.

In the opposite way from most Latin American and the Caribbean countries improving their indicators, Argentina and Venezuela still resist to increase the private sector role on infrastructure development.

CHART 43: LATIN AMERICA AND THE CARIBBEAN IN THE 2012 INFRASCOPIO RANKING

	Overall	Legal framework	Institutional framework	Operational maturity	Environment for investments	Funding structures	Local development
1	Chile	79.4	75.0	75.0	87.6	91.7	50.0
2	Brazil	71.9	65.6	75.0	76.8	61.1	75.0
3	Peru	68.1	75.0	75.0	80.0	72.2	50.0
4	Mexico	58.1	65.6	58.3	60.0	72.2	75.0
5	Colombia	55.3	62.5	50.0	78.1	61.1	50.0
6	Uruguai	34.8	56.3	50.0	64.1	41.7	25.0
7	Guatemala	40.9	53.1	50.0	54.9	33.3	25.0
8	Costa Rica	32.6	40.6	33.3	61.3	41.7	0.0
9	El Salvador	30.7	37.5	33.3	58.5	47.2	25.0
11	Trinidad y Tobago	32.2	25.0	25.0	59.3	55.6	25.0
11	Panama	36.4	40.6	8.3	65.0	63.9	0.0
12	Honduras	24.2	25.0	50.0	51.7	16.7	25.0
13	Jamaica	26.6	25.0	25.0	56.0	22.2	25.0
14	Paraguai	24.7	31.3	25.0	49.8	25.0	25.0
15	Dominican Republic	24.0	25.0	8.3	52.1	25.0	25.0
16	Nicaragua	17.1	21.9	25.0	36.2	8.3	0.0
17	Ecuador	12.4	21.9	0.0	38.3	22.2	25.0
18	Argentina	30.3	9.4	16.7	20.8	16.7	25.0
19	Venezuela	5.3	0.0	0.0	11.0	16.7	0.0

Source: (ECONOMIST INTELLIGENCE UNIT, 2013)

#5.1.2 [PUBLIC-PRIVATE PARTNERSHIP FUNDING STRUCTURES]

Transferring to the private sector the responsibility of deploy funding for infrastructure investments is one of the largest differences between public-private partnerships and the traditional execution by the public sector (WORLD BANK & PPIAF, 2012).

The private sector funds projects by combining own capital and debt, which by its turn may involve loans from banks, bond issuance or other financial instruments. In developing countries, PPP creditors are usually commercial banks, development banks, financial institutions and institutional investors like pension funds.

> Aiming to relieve the lack of liquidity in the financial markets, the United Kingdom created in 2009 their own infrastructure funding unit, the Treasury Infrastructure Finance Unit (TIFU), to make loans to projects, Private Finance Initiative, that had trouble finding resources from other sources. TIFU was later replaced by the Infrastructure UK (IUK), aiming to provide a new strategic focus to a broad range of infrastructure sectors on planning, funding and execution.

Even if the funding responsibility lies with the private sector, the grantor shall be aware that the contract elaboration and the risk allocation is under their responsibility and shall provide legal security for the private partner and their backers. This enables a lower cost for investing and granting funding, directly impacting the counter payment that must be paid.

Overall, given that one of the targets is to reduce funding costs, projects tend to be funded with a high debt and own capital ratio. Such situation is caused by the fact that risks incurred by investing own capital are higher, once this is "first in, last out" capital - any losses fall upon these investors first. Consequently, own capital cost tend to be higher than debt, so that more debt is used to fund the project. However, projects that are very leveraged are prone to default or bankruptcy. As governments may consider introducing own capital as minimum, in the other hand the investor restricted ability to choose the funding structure may increase capital costs.

Another commonly used structure to reduce costs with public-private partnerships is developing a model called forfeiting model. According to this structure, the private player sells part of receivables generated by the PPP contract to a creditor bank. If the work is completed with acceptable quality, the government is in charge of servicing debt to creditors. This structure has two relevant implications: the government's risk allocation increases and as servicing debt is no longer linked to the project's performance, the creditor has no interest on monitoring its performance, which broadens credit access to private players.

The government can also fund public-private partnerships directly, reducing the amount of resources to be acquired by the private player as well as the amount of risk allocated to this sector. Although it is easier for the private player to evade consequences if the project fails, there are some reasons for the public sector to fund PPP projects:

- To avoid excessive risk premiums

- To mitigate risks: linking grantor's income to the counter payments by the public sector creates a risk for the public sector that is directly reflected on the project cost. Due to such uncertainty, financing part of the project helps to improve its bankability and to reduce its cost.
- To improve availability of loans in the long run: in some countries, private banking structure may not be so developed as to provide long term loans.

The consequences of the 2008 crisis, such as lack of liquidity in financial markets, high interest rates and rigorous conditions for loans from banks have resulted in a more active role for governments and multilateral institutions on financing public-private partnerships. As occurred in the rest of the world, a dramatic shift on capital structure took place in Latin America, represented by a decrease of highly leveraged investments. Until the 2008 crisis, the majority of investments were financed by bond issuance or loans. (WORLD BANK, 2011)

> According to the Reference Guide on Public-Private Partnerships, half of PPPs implemented in Germany from 2002 to 2006 was structured as forfeiting model.

However, after the crisis, leverage levels of projects have been reduced. The capital and investment ratio rose to 28% in 2010 from 18% in 2008. At the same time, financing by loans and bond issuance fell to 64% from 79%. In addition to changing financing structure, some countries introduced changes to legislation and PPP contracts, aiming to improve project bankability. In the other hand, PPP warranty funds, that were created to warrant counter payment obligations in full or partly, from the government to the private partner, were not fully used - probably due to lack of incentives.

Recently, as governments in Latin America prioritize fiscal sustainability, investments in infrastructure may become limited. In this context, aiming to fix the deficit related to building public works and delivering public services, it is necessary to ensure more participation by investment funds in financing PPP. Thus, among key challenges to overcome, there are developing regulatory frameworks that ensure political commitment with PPPs long term[18] stability and the simplification of procedures for obtaining environmental permits, for instance.The need for long term investing in infrastructure projects fits with pension funds goal for investing in long term assets and diversifying their investments. But there are some factors preventing a larger participation of pension funds; some of them are the lack of rigorous analysis of project costs and the offering of more attractive investments.

> According to OECD economist Rafaelle Della Croce, institutional investment in infrastructure is not significant. First funds for financing infrastructure projects were created in Australia. Actually, pension funds from Australia and Canada are those who invested more in infrastructure. Recently, public pension funds from the Republic of orea are investing heavily in other countries. However, in Europe and the United States, investing in infrastructure assets have been limited.

The profile of investment fund investors in infrastructure, as for instance, to pursue for long term assets, risk diversification and higher profitability is in tandem with government's goal to increase investment in this sector by using private resources. In this context, it is critical to develop structures that encourage such investments, as tax exemption, development of a legal framework that allow for long term contracts and the formation of structures that ensure contract correct execution.

18 Assets are "resources controlled by the entity as the result of past events and from which future economic benefits are expected to flow to the entity")International Accounting Standards Board, 1989, pag.A40). By future economic benefits it is understood to be "the potential to contribute, directly or indirectly, to the cashflow or cash equivalents to the entity" (IASB, 1989, p A41).

#5.1.3 [LEARNINGS FROM INTERNATIONAL EXPERIENCE]

It is expected that PPPs expand in the next decade, as most countries still need to eliminate infrastructure deficits amidst budgetary constraints and the need for austerity measures (ADAIR et al., 2011).

The maturity of PPP programs is measured as higher the capacity of execution and management of innovative models, as well as the development of strong structures for its financing.Admitting that hiring public-private partnerships is not something trivial resulted in that many countries created public-private partnership units external to ministries or industry agencies. **In general, the role of these units is to disseminate this public work and service hiring model at the same time in that also disseminates best practices and procedures. Furthermore, in some jurisdictions, these units are also in charge of filter projects in their several stages, overall paying particular attention to tax costs and contingencies, and to ensure that the wiggle room for private opportunism is restricted.**

> Although the execution of public-private partnerships in the United States is recent, the country has been able to quickly absorb international experiences and to combine with their legal and financial knowledge, as to create solutions that fit to complex infrastructure projects. However, one of the main barriers for developing PPPs is the legal framework's lack of consistency.

The role of government is still fundamental, albeit public-private partnerships are a method to channel private resources for developing projects of public interest. It is improbable that the private sector changes their business model for developing PPPs, if there is lack of political support and regulation in the industry. **This way, it is the government's duty to develop a regulatory framework that supports and eases project development.**

As public-private partnerships rely on public resources, shall undergo a cost-benefit analysis in comparison to other projects (FRISCHTAK, 2013). More technical support for structuring a project may imply in a more thorough analysis of the economic-financial impact and thus, avoid the waste of public resources. However, by allowing the investment to spread over time, so to the public sector are able to provide essential goods and services to the population in a shorter period of time, the cost of public-private partnerships only becomes apparent in the long run, when probably politicians that hired them have already left their jobs. **Thus, a PPP shall only be hired if their cost is clear and all contingencies are identified.**

> The Value for Money argument is quite used in the United Kingdom and Australia. Studies carried out by these countries suggest that public-private partnership efficiency gains arise from the delivery of the project in shorter time and by complying with budgetary requirements, when compared against traditional execution.

On what concerns to public-private partnership contract elaboration, although these tend to be incomplete - as it is hard to foresee all possible scenarios that would change their equilibrium- it is necessary to make clear circumstances that would disrupt their equilibrium. For instance, changes to the macroeconomic situation, the need for additional investments or any other event that is external to the private sector action. **This way, contracts shall allocate risks to the parties which can best manage them,**

as well as make obligations taken by the State clear, define the expected results and to structure the grantor's remuneration, considering different scenarios.

Although risk allocation has improved, there are evidences that the public sector carries disproportional risk levels compared to the private sector. **Contracts shall be drafted as to avoid opportunistic behavior from both parties:** while the public sector requires additional investments irrespective of the future capacity to fulfill them, the private sector wishes fee adjustments or counter payment increases when faced with less demand than the expected or by having assumed an obligation even knowing it was not feasible. Aware of the incentives the public sector has to accommodate their demands due to the high cost to replace the service provider and the risk of temporary interruption or deterioration, the private partner offers more risk of opportunistic behavior.

Joining construction, operation and maintenance together may result in efficiency gains since the quality standard is properly specified in the contract and that services are effectively overseen. It is exactly such higher efficiency that is inherent to the private sector that offset possible higher costs incurred in the tender, construction and operation of assets by means of public-private partnerships compared against the public sector's traditional execution.

In this context, aiming to prevent potential conflicts of interest and opportunistic behavior from both the public and private sectors, **it is important to institutionally segregate definition, selection, elaboration, and hiring of projects from their monitoring, overseeing and eventual renegotiation** (ENGEL et al., 2009; FRISCHTAK, 2013).

It is also worth to mention the importance of a detailed, thorough planning of the required phases to bid the project. This gives more transparency to the project, reduces transaction costs and contributes for increasing competition by letting more companies to join the tender. Some of the new guidelines on public-private partnerships issued by State of Victoria in Australia are moving towards this direction: partial reimbursement to losing bidders for costs incurred in the preparation of their proposals, which allows both for increasing tender's competition levels and attracting best prepared proposals.

As general rule, establishing a competitive process is possible the most effective way to ensure equilibrium in the negotiation between the parties and to minimize transparency issues and ensure lower costs.

Finally, although public-private partnerships are a means to transfer execution and funding responsibilities for public interest projects to the private sector, the role of government is critical. This envelopes special attention from the economic-financial feasibility studies and contract elaboration up to planning required steps to bid the project. A thorough planning of all phases, among other benefits, reduces transaction costs, gives more transparency to the process, and supports the elaboration of solid contracts, reducing the likelihood of renegotiation and the possible interruption of service delivery.

According to a study by the Royal Institution of Chartered Surveyors, tender processes in the United Kingdom are long and complex, causing high costs when compared against traditional execution. Such costs, in addition to impact Value for Money assessment, remove incentives for the participation of the private sector in tenders, which contributes to their credibility loss. In the UK, the tender process lasts 34 months in average, while in Canada, where this process is one of the simplest in the world, this duration is around 16 to 18 months.

#5.2 [THE BRAZILIAN EXPERIENCE]

This subsection aims to discuss the legal framework evolution to pursue the overcome key bottlenecks in infrastructure Brazil faces, by increasing the participation of the private sector in the development and funding of public works and service delivery by means of public-private partnerships and grants.

Attempts to overcome the infrastructure gap by deploying private resources started in the 1980s. The end of the military regime, the economic crisis, the lack of public resources and the Brazilian state bankruptcy released privatizations in the country. In the 1990s, this model was incorporated into the government policy. More than 120 federal and state companies were transferred to the private sector, and some of key privatizations are: Usiminas (1991), CSN (1993), Embraer (1994), Companhia Vale do Rio Doce (1997) and Telebrás System (1998).

In 1995, Law # 8.987 created the legal framework for grants and in 2004, Law # 11.079 created the federal PPP legal framework. At the same time, several states passed PPP laws, attracting the participation of private sector in projects that were not attractive to private players until then. In the last two decades, there has been a strong growth in grants for several sectors, such as highways, railroads, and telecom and currently there are 20 PPPs being executed under state governments. CHART 44 shows the evolution of federal and state legal framework for public--private partnerships and grants.

Whereas Law # 8.987/1995 created the so-called ordinary grants, i.e., granting public services and the grant of public serviced preceded by public works, Law # 11.079/2004 established two new granting models: sponsored and administrative. A sponsored grant is the grant of public services and works as per Law # 8.987/1997 when it involves, in addition to the fee charged from users, payment of counter payments in cash from the public partner to the private one. The administrative grant contract involves public service delivery directly or indirectly to the public sector, which may also include works and the provision and deployment of goods. In this case, the grantor's remuneration occurs only by means of counter payment in cash. CHART 45, CHART 46 AND CHART 47 explain the three grant models.

For some specific projects, the grantor's remuneration only by fees charged from users is attractive and allows for remunerating the investment made, so that grants similar to ones established by Law # 8.987/1995 are the best option to transfer service delivery to the private sector. In the other hand, some projects offer lower returns to the private sector than the social return, thus it is the State role to encourage private sector participation by providing proper compensation structures. In this case, the development of public-private partnerships according to Law # 11.079/2004 may be the best option.

In relation to PPPs determined by Law # 11.079/04, there are projects of this nature being organized directly by the distinct government levels. The Datacenter Building Complex in Brasilia is the PPP being executed under the Federal Government. It consists in building a building complex to house the information technology structure for the banks Caixa Econômica Federal and Banco do Brasil. There are other projects in analysis in the areas of infrastructure, defense, irrigation, and education.

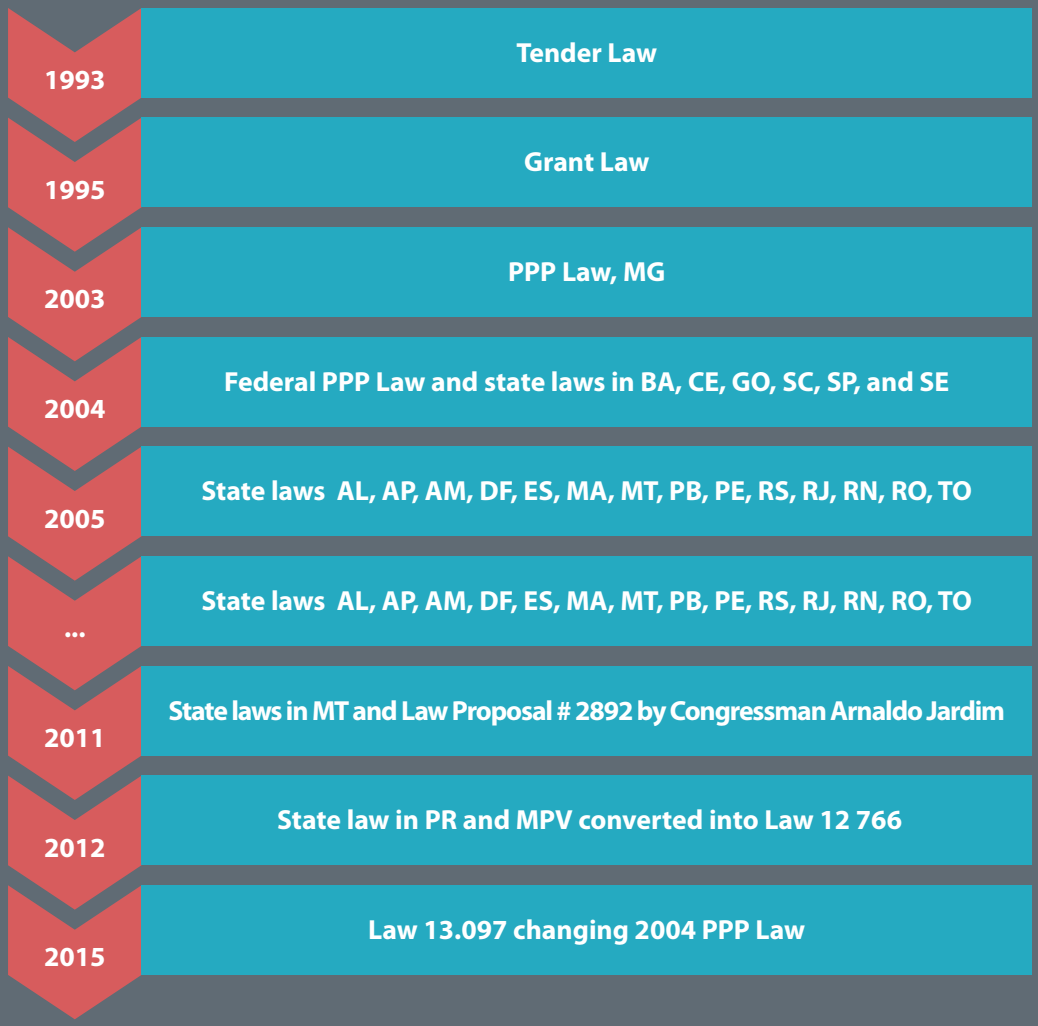
CHART 48 provides an overview of grants and PPPs by each state, broken down by contracts in progress and PPPs in the design stage. As the first covers contracts being executed and projects already bid and signed[19], the second involves projects ready for tender, projects under study - legal and economic-financial modeling stage - and projects being discussed.[20]

19 Em fase de constituição da SPE, por exemplo.

20 Projetos que estão na pauta da administração pública para possivelmente serem executados através de parcerias público-privadas.

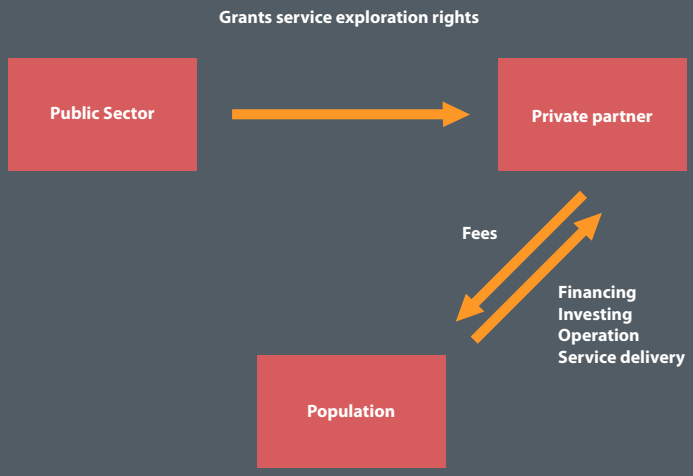
21 O quadro também apresenta os números de PPPs até 2010.

CHART 44: PUBLIC-PRIVATE PARTNERSHIPS AND GRANTS TIMELINE IN BRAZIL



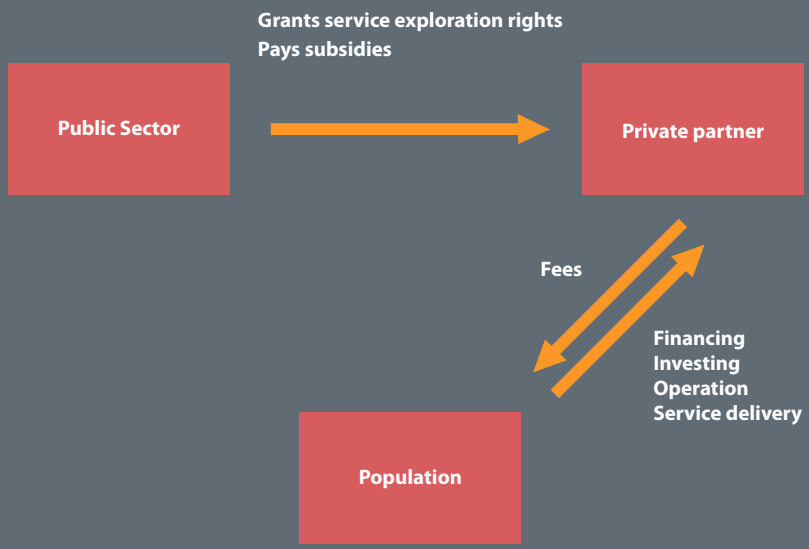
Drafted by GO ASSOCIADOS

CHART 45: ORDINARY GRANT



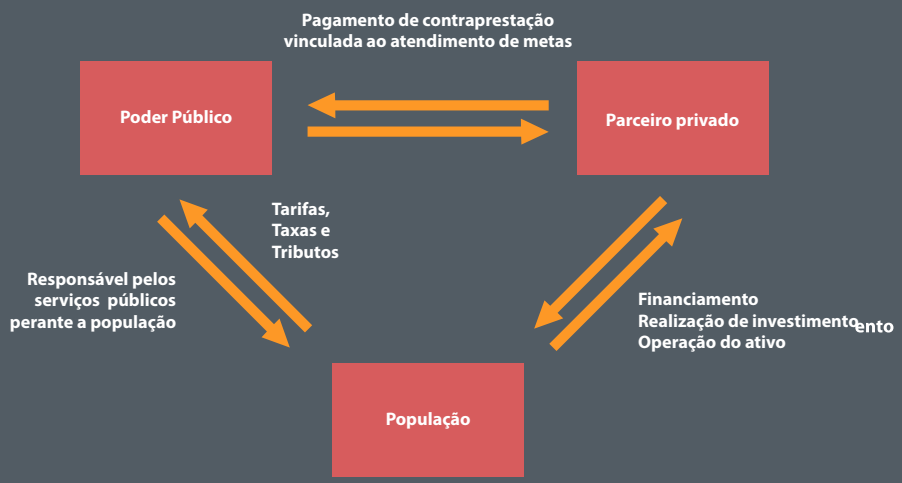
Drafted by GO ASSOCIADOS

CHART 46: PPPS, SPONSORED GRANT



Drafted by GO ASSOCIADOS

CHART 47: PPPS, ADMINISTRATIVE GRANTS



Drafted by GO ASSOCIADOS

The CHART 50 compiles projects by government level. CHART 50 segregated PPPs in execution from PPP projects per sector.

The survey suggests the following:

i. The learning period for applying the legislation was relatively long; after one decade of passing Law # 11.079/04, the number of projects under discussion (little more than 90) is relatively small, and only 17 stets have PPP under execution while the Federal Government has executed only two;

ii. Given the small number of PPPs in execution, it is still not possible to detect an industry pattern; recently, the sanitation, transportation, solid waste and public lightning sectors were those with more projects, but when the grand total is considered, it is possible to see some diversification by sector;

iii. There is a stock of PPP projects that may indicate that this model can grow faster in the coming years; this scenario is likely to happen if bottlenecks detected in Section 3 are solved.

One can see that more than 70% of projects in the last months are related to cities, so that São Paulo, Belo Horizonte, Rio de Janeiro, Vitória, Porto Alegre, Curitiba, Natal and Palmas are some cities that passed public-private partnership laws. There are PPP projects in progress or being formatted in several segments, such as sanitation, education, health, housing, and urban cleaning.

Large cities are those mainly developing PPPs, as they have more institutional capacity and technical ability to conduct complex studies involving modeling these projects. In the other hand, small and mid-sized cities are not equipped with theoretical and practical knowledge about this topic, showing the need for creating structures that help these cities on implementing PPPs. By training these cities, PPPs could be carried out by Urban Operation Consortiums and Intercity Consortiums, for instance.

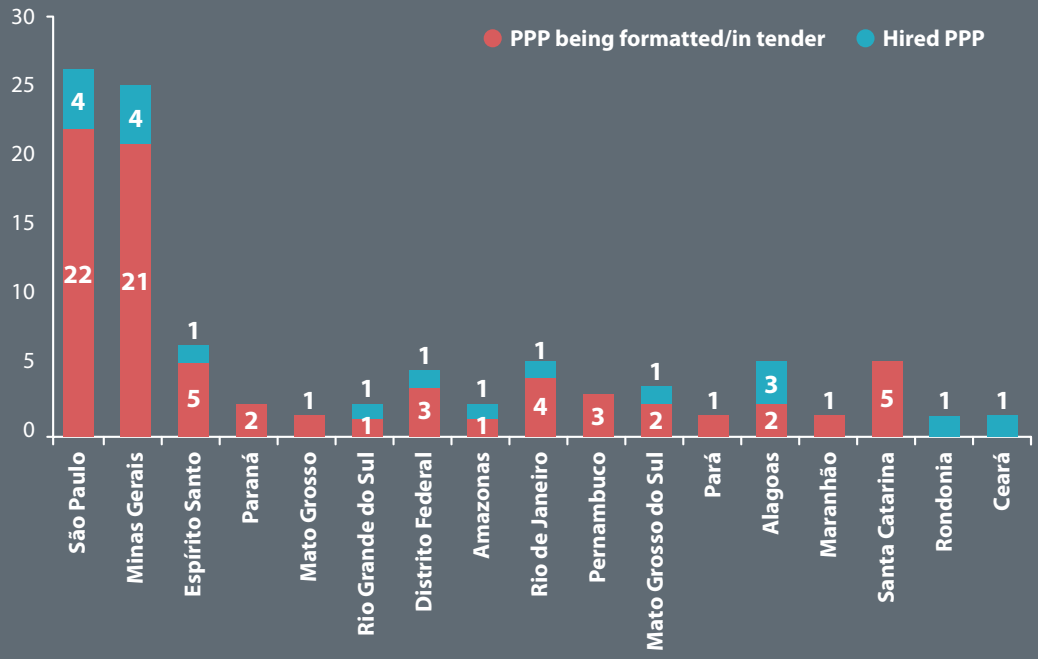
As for states, São Paulo and Minas Gerais are those discussing most projects. According to São Paulo State CGPPP Executive Secretariat, R$ 67.44 billion will be invested in infrastructure by means of public-private partnerships and grants, totaling 21 projects. From this figure, hired projects total R$ 23.9 billion, projects in tender process total R$ 10 billion and preliminary proposals total R$ 33.3 billion.

In the state of São Paulo, urban mobility projects represent most items to be contemplated (77% of resources): totaling more than R$ 52 billion in subways (Lines 4, 6, and 20) and train (Lines 8, 10, 18, city of Santos tram and Intercity Train lines). Other investments contemplate Transportation (Tamoios highway and Guarulhos Airport Highway), totaling R$ 4.8 billion, Housing (R$ 3.5 billion), Sanitation (Alto Tiete Producing System, São Lourenço Producing System and Sanitation in the Juqueri Valley) totaling R$ 3.3 billion, Public Services (R$ 2.2 billion), Hospitals (R$ 0.7 billion) and Medication (R$ 0.5 billion). Data is summarized on Chart 51 and Chart 51.

Such increase in the investment volume in São Paulo may be explained by the strong spending capabilities of the state, around R$ 25 billion per year, and the fast approval of funding. Projects for the state shall offer internal return rates above the Federal Government's. This reflects the concept that rates shall be equivalent to international ones, considering the complexity of projects and the goal to attract high quality grantors.

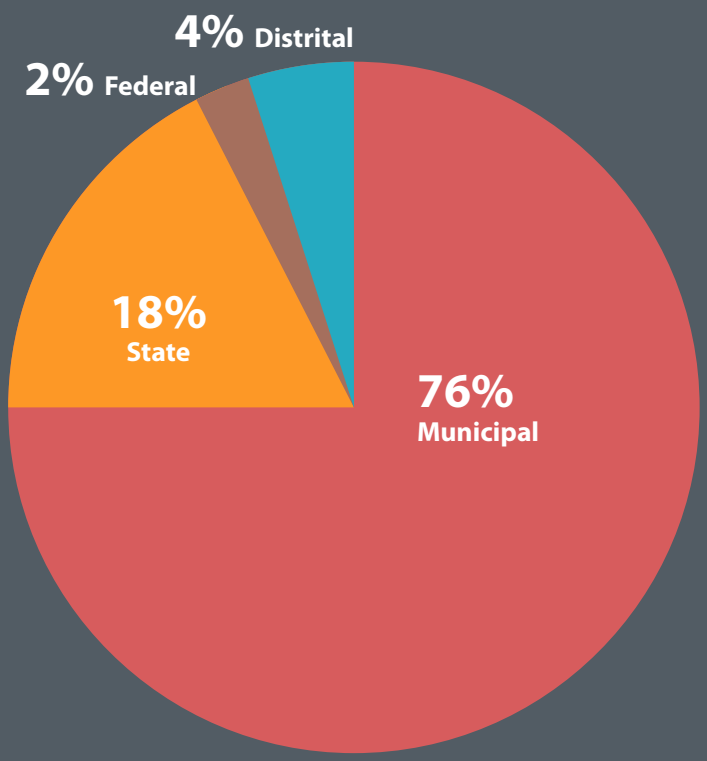
Compared to ordinary grants as regulated by Law 8.987/95, one can note that PPP evolution was slower. The number of ordinary grants in some sectors (such as highways and energy) is quite expressive in the country, as this model has been developing for some time. The reasons for such difference, however, may lie in the economic and political context in which each law was passed. For ordinary grants, there is a clear prevalence of the energy sector seconded by highways, as per CHART 53[21].

CHART 48: PPPS IN EXECUTION AND PPP PROJECTS JUNE 2014 TO FEBRUARY 2015



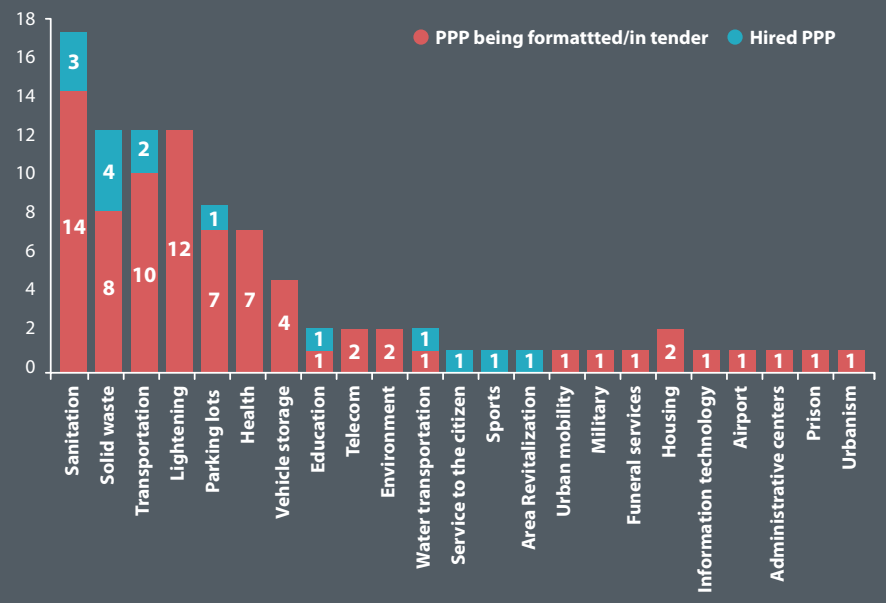
Source: Federal Official Gazette. Drafted by GO Associados.

CHART 49: GOVERNMENT LEVEL RESPONSIBLE FOR PPPS - JUNE 2014 TO FEBRUARY 2015



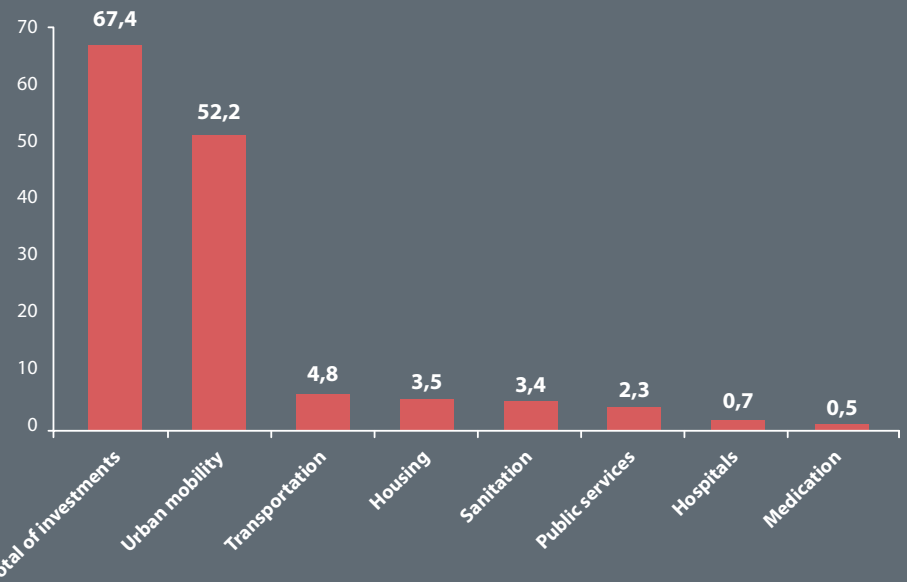
Fonte: Diário Oficial da União. Elaboração GO Associados.

CHART 50 - PPPS IN EXECUTION AND PPP PROJECTS PER SECTOR - 06/2014 TO 02/2015



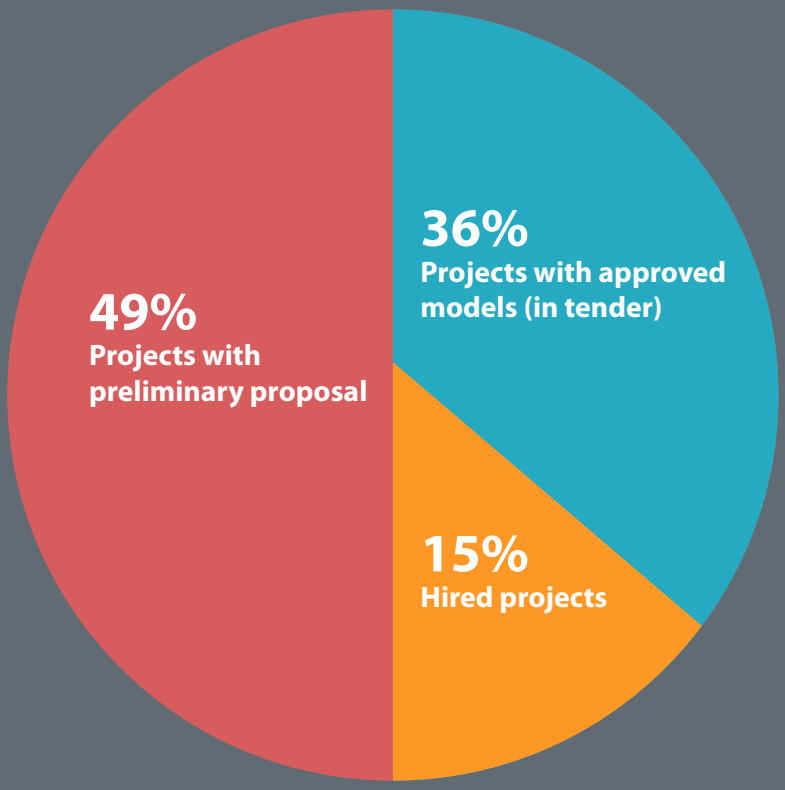
Source: CGPPP Executive Secretariat. Elaboration: GO ASSOCIADOS.

CHART 51: INVESTMENT IN PPPS AND GRANTS IN SÃO PAULO STATE (R$ BILLION)



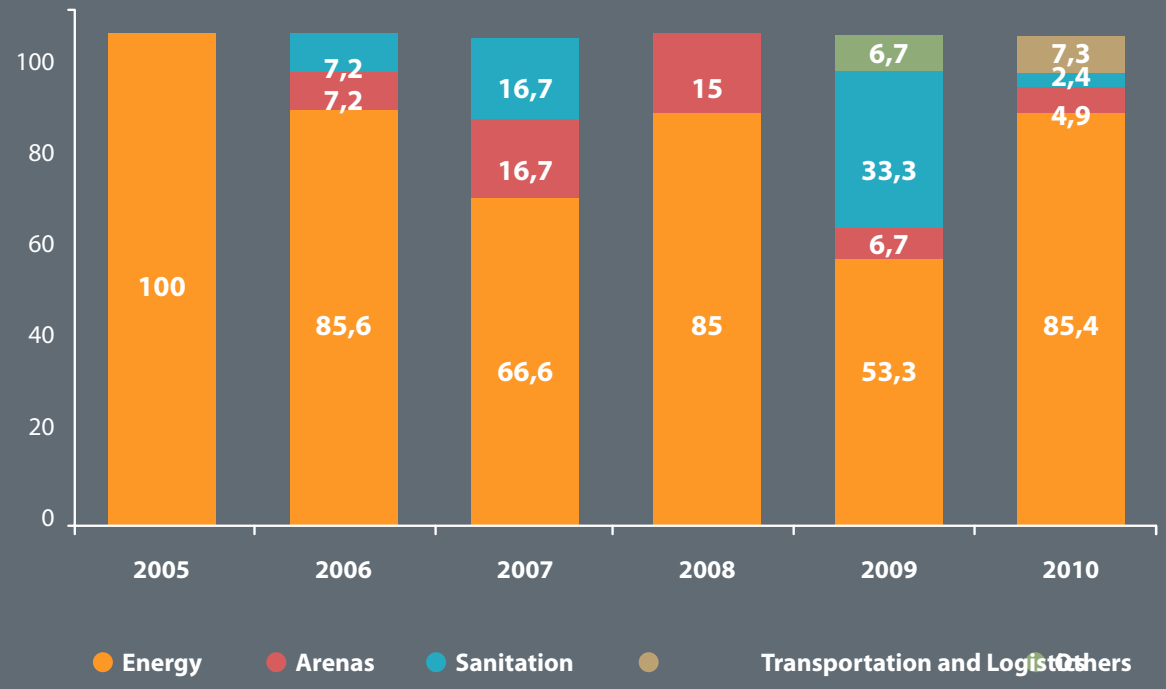
Source: CGPPP Executive Secretariat. Elaboration: GO ASSOCIADOS.

CHART 52: PPPS AND GRANTS STATUS IN THE STATE OF SÃO PAULO



Source: CGPPP Executive Secretariat. Elaboration: GO ASSOCIADOS.

CHART 53: ORDINARY GRANTS AND PPPS PER SECTOR



Source: Anbima (2010)

PPP do Sistema Produtor do Alto Tietê

Em 2007, a Sabesp defrontava-se com um cenário em que a capacidade de tratamento de água da Região Metropolitana de São Paulo era de 67,7m^3/s e a demanda já alcançava 66,3 m^3/s. Como o programa de redução de perdas não era capaz de resolver a escassez da oferta de água no curto prazo, a Sabesp realizou a sua primeira parceria público-privada. A realização da PPP do Alto Tietê mobilizou investimentos da ordem de R$ 300 milhões, culminando com o aumento da vazão da estação de tratamento de água (ETA) do reservatório de Taiaçupeba de 10m3/s para 15m3/s.

Caso a Sabesp optasse por realizar a ampliação da ETA, como toda empresa pública estaria sujeita à Lei 8.666, o que poderia implicar prazo longo para a conclusão das obras, afetando a oferta de água na RMSP. Tendo em vista a necessidade de agilizar os investimentos, de diferi-los ao longo do tempo e a importância de trazer a expertise do setor privado, optou-se pela parceria público-privada: a remuneração do parceiro privado atrelada ao seu desempenho incentivou o desenvolvimento de soluções inovadoras.

A Sabesp permaneceu como delegatária dos serviços públicos e da relação direta com o usuário, bem como também mantém a responsabilidade pela operação da estação de tratamento de esgoto. O parceiro privado ficou responsável pela realização de obras, o que inclui a ampliação da estação de tratamento de água, construção de adutoras, reservatórios, realização de obras acessórias, manutenção de barragens e serviços gerais.

Também coube ao setor privado a obtenção dos recursos financeiros para a execução do projeto, pela cobertura dos seguros e pela licença de instalação das obras. Foi de responsabilidade da Sabesp a liberação das áreas onde a obra foi construída, formalização do termo de permissão de uso de ativos da Companhia e obtenção das licenças prévias ambientais. Estas, diferentemente dos projetos que envolvem realização de grandes obras, não constituíram um entrave para a realização do empreendimento pelas próprias características peculiares do projeto. Isso porque o escopo principal era a ampliação, e não construção, da estação de tratamento de água. Ou seja, já havia área disponível para ampliação da obra e, consequentemente, toda complexidade por trás da obtenção de licenças prévias foi significativamente reduzida.

O contrato de concessão administrativa estabelecido tem duração de 15 anos. A estrutura de remuneração mensal do concessionário está sujeita aos indicadores de desempenho e contempla a disponibilização da capacidade instalada na estação de tratamento de água nas duas fases do projeto. A proporção do pagamento atrelado aos indicadores é baixa quando comparada àquela que remunera os investimentos em bens de capital. Entretanto, é importante para incentivar manutenções adequadas e prestação

#6 [PROPOSALS FOR ENCOURAGING PPPS AND GRANTS FOR MID-SIZED COMPANIES]

#6 [PROPOSALS FOR ENCOURAGING PPPS AND GRANTS FOR MID-SIZED COMPANIES]

This section aims to present a set of proposals to ease the participation of mid-sized companies in Public-Private Partnerships and Grants. The proposals are organized in six sets that will be discussed in the next subsections.

There are several barriers to mid-sized companies' participation in grants and PPPs. These are obstacles of several kinds, involving structural, legal, institutional, financial and even cultural issues.

Difficulties can be set apart in three categories. The first category is associated to infrastructure project formatting. The second category is the need to attract more resources to grants and PPPs. The third category involves project risk formatting aiming a pure Project finance - without shareholders warrant. The third category includes discussions on public warranties on PPPs, rights for the financial backer to take control of the project and other items discussed below.

The first gap identified is that most of cases only large companies are able to qualify for joining PPPs and grants. There are multiple reasons for which mid-sized companies are not able to qualify. Many times, even before qualification, some projects are not feasible for this company size.

One of the obvious ways to make the PPP and grant mechanisms more effective is to eliminate obstacles to entry of a larger number of companies, making the process more competitive.

PROJECT FINANCE IS A FINANCIAL ENGINEERING THAT AIMS TO MAKE A GIVEN INVESTMENT FEASIBLE.

Another gap is related to the attraction of financial resources. As seen above, in the current scenario in which project funding is basically performed by state-owned banks, it is critical to find other feasible alternatives to source resources for these projects, such as access to funds

The third one is related to improving project structuring, specially focused on risk allocation.

Taking into account the long term of contracts and the own business structure, structured funding operations or project finance are applicable to PPPs and grants.

Project Finance is a financial engineering that aims to make a given investment feasible. A Specific Purpose Vehicle is usually created in order to isolate shareholders from the risk related to the success of the project, and this entity is in charge of applying directly their knowledge in the service provision.

This structure has been used abroad mainly in infrastructure projects, due to the existence of a income flow that is typically foreseeable, and in many times, due to the restrained demand, when it is properly dimensioned, hardly the project does not met the minimum income projected.

The rationale for making a project feasible through Project Finance is to obtain higher financial leverage and thus exempting the investor from committing large chunks of capital. This allows for providing a high quality service due to the know-how the investor has, transferring large part of the investment success risk to financial backers so to allow for a systematic infrastructure expansion, with operators having reputed technical qualification.

In this structure, creditors (who are incurring in more risks) need that investors have most risks mitigated, aiming to ensure a proper profitability in relation to the minimum attractiveness rate, like the protection from large variations in prices of offered energy (which is made by means of derivatives), traffic warranty (which is carried out by establishing a contract risk matrix along with the public sector) or even instruments to protect from the exchange rate variation (for imported components).

So, in order to ensure peace of mind for the investor and the creditor, one of the Project Finance key ideas is the ready availability of project receivables to ensure that the loan will be paid.

In order to the receivable flow warrant the payment of loan interests and amortizations, a trustee bank hosts an escrow account, through which the project income is accrued for paying the financial obligations (protecting the creditor) and only then resources are released to the investor to bear operational costs.

Mainly due to poor formatting, poor allocation or even due to existing risks that cannot be efficiently mitigated, in Brazil the project finance is fundamentally based in corporate warranties from the shareholder, at least at the construction phase, as it is common in the energy sector. Thus, although the main idea of project finance is the investment real warranties, such as their receivables, in Brazil, pure project financing is rare.

Detailed proposals below aim to create conditions to provide more resources and a solution for the warranty issue, so to reduce the need for shareholder corporate warranties, making the process more accessible to mid-sized companies.

#6.1 [HIRING SIZE FORMATTING]

A bottleneck lies in the PPP and grants tender notices, usually formatted for large companies. Whether by the size of hiring or by tender restrictions, the access of smaller companies is not satisfactory yet. The proposals below aim to eliminate this gap.

#6.1.1 [PROJECT MODULARIZATION]

The first proposal to attract more companies to PPPs and grants is to make the process more competitive. This can be achieved by means of smaller projects and tender requirements allowing expanding access for mid-sized players.

There are several factors that shall be considered by the public sector in relation to the possibility of "dividing" the project in order to make it modular, or to consider the creation of consortiums among mid-sized companies that allow for adding previous experiences from every member to meet minimum requirements demanded for participating in grants and PPPs.

Firstly, it is necessary to analyze the feasibility of dividing the project in stages/modules, in terms of physical, economic and finance engineering. The first item to be carefully considered is the financial engineering, considering that it might be a bottleneck for the other factors. From the financial standpoint, the result shall be aligned to the public sector budgetary restrictions, considering that many times, even the if the project can be expedited due to modularization, payments shall occur according to the State's other financial obligations and priorities. However, the project modularization result will depend on scale savings and scope inherent to the investment execution and operation, according to the project's physical and economic engineering aspects.

Secondly, the competition requires analysis as well. An important dimension is to assess how a large number of players translate into a best price/quality ratio for the project, due to more competition among the tender participants. A smaller number of participants may also have more likelihood of tacit agreements or not, leading to a result that is less favorable the public hiring party.

In some circumstances, it might be a good idea to not pursue scale gains and allowing for more participants to increase competitiveness.

What needs to be analyzed is the project's physical engineering feasibility. For instance, depending on the nature of a tunnel, the work can be conducted in two fronts maximum, due to geological constraints. Furthermore, construction techniques required to build a tunnel of a certain length may significantly different for a much longer tunnel. Building a 2km-tunnel is way different from opening 10 tunnels with 200 meters each. Thus, modularizing the project does not make much sense in this case and also would not be reasonable to accept smaller companies combined past experiences.

For this reason, the division of risks/technical competencies and its consequential impact on the occurrence of critical events on the project shall be analyzed.

There is a broad range of large projects that can be divided and also allowing for combining technical capabilities from each consortium member. In this case, mid-sized companies can form a consortium to add their different competencies and experiences.

Lastly, it is worth mentioning that modularization and allowing for technical capability combination are two distinct approaches. The first allows for a broader risk diversification, and it is recommended for projects covering a certain region or a set of actions (like social housing and infrastructure projects).

The other becomes more interesting in situations where the public sector aims to increase competition among participants, namely mid-sized companies against large companies (such as in highways, hydropower and others).

The possibility for a grantee in a shared project take over the work of another member going through technical difficulties is something that deserves more study. This is a sort of technical takeover right - a technical step-in.

If technical difficulties faced by a grantee jeopardize the whole project, an interesting option may be to give the public sector the possibility to determine that other grantee in the project take over the works for the time necessary to fix the problem. This way, it is ensured that the project unity is preserved and it is completed as soon as possible.

Finally, it is suggested that the criteria which determined the project format is communicated in the PPP justification, explaining scale savings. At the same it does not force the project to be divided into multiple pieces, it creates a constraint mechanism for the decision maker to indicate at least if a project division would not be feasible.

This proposal would be equal to replicate paragraph 1 of article 23 of Law 8.666/93 to the PPP Law, establishing execution of works and services and the purchases of goods. At each work, service or purchase phase, or set of phases, a different tender has to be made preserving the related model for executing the object in the tender. Appendix I includes a law proposal for changing this topic.

#6.1.2 [SIMPLIFICATION OF THE PPP FORMATTING PROCESS]

A severe bottleneck identified in the PPP formatting is the paperwork for the process and the difficulties on formatting projects. Lack of metrics for analysis and approval, along with the delay on project approval, prevents more cases. This proposal aims to expedite the conception, proposition and format of public-private partnerships and grants, so to projects start execution faster.

O toolkit visa atenuar as principais dificuldades encontradas na condução de processos de PPP com base na experiência pública.

#6.1.2.1 [CREATION OF METRICS AND TOOLKITS]

One proposal suggests the creation of toolkits in order to simplify the PPP analysis process. In the international experience, this toolkit usually comprises widgets that are used as an application platform directed for performing tasks.

Creating this toolkit was useful for Canada, United Kingdom, Portugal and India. In these countries, the toolkit improved the information flow for PPP projects. Thus, standardized logging, processing and controlling of activities and processes are carried out through a web-based platform with control of access to project content by pre-defined profiles and the creation of a single data repository with project information.

The toolkit aims to relieve the main difficulties found at conducting PPP processes, based on public experience. For instance, the submission of proposals lacking data and not allowing for analyses and comparison, lack of standards for documents and projects, low activity logging, information dispersion, lack of knowledge management due to changes in the technical entity and so on, are widely common.

The tool should be used both by PPP professionals in both the public and private sectors, as well as by the citizen. For the public sector, this tool is useful to simplify the paperwork and make decision making more transparent.

For the private sector, this tool allows interested parties to log and submit Interest Manifestations in a format that is pre-defined by the public sector, which will expedite analysis and follow-up, complying with all confidentiality criteria. The citizen will have access to public documents of each project in a single location, enhancing transparency and social control.

The tool shall be able to cover the whole diversity of PPP projects in several segments. By using this tool, it is expected better control, standardization and management of information and knowledge acquired from all PPP projects conducted by the public sector.

The State of São Paulo is developing a toolkit that shall be ready by the end of 2015, for four sectors: sanitation, highways, urban mobility and public buildings.

#6.1.2.2 [EASE ON HIRING CONSULTANTS]

Both grants and PPPs have bottlenecks in the way how they are formatted by the public sector. For PPPs, PPP Units were originally created to be excellence centers on modeling these projects and to support the public sector during their development.

However, there are human and material resources constraints in several cases. Furthermore, in some cases it was seen that PPP Units, along with PPP steering committees, have become additional project approvers, putting aside their coordination role and the role of promoting PPP formatting. Another barrier for executing these projects is the difficulty to hire consultants and experts to elaborate the modeling.

Two reasons help to understand why. In one side, save few exceptions, governments do not place value on PPP Units and several times, wrongly, other public sector entities see these units as an interference and limitation of operation in their activities. In another side, PPP Units are subject to the same external consultant hiring restrictions that any other public entity, especially for conducting tenders, as per Law 8.666/93, which restrains their operation

Structuring private-public partnerships and grants requires very specific technical knowledge and carrying out complex studies. According to Ribeiro[22], the large majority of public agents are not even properly trained to hire consultants to structure a PPP or grant. In this context, to disseminate technical knowledge it is required that federal and state entities support states and cities with less qualification levels.

One of undesirable consequences of tacking technical knowledge for approving partnerships across government levels is the slow pace of the assessment process.

For instance, for a state public company, a PPP project shall be approved by: a) by the company internal instances, including the board and the executive management; ii) by the State PPP Unit, and committees that may involve the State General Attorney or State Offices relevant for a specific project; iii) by a PPP Council in the state, involving state secretaries and other representatives. Furthermore, the PPP shall undergo public consulting sessions and other discussions for getting society's approval.

CHART 54 exemplifies a PPP run by Sabesp to expand Alto Tietê water system. It was a priority project to ensure water supply for the São Paulo Metropolitan Area.

Vera Monteiro[23] submits a proposal to change Law 8.666/93 (Tender Law) to authorize hiring services of consulting, audit, technical reports, which certainly could guide flexibility efforts for the consultant hiring regime.

The proposal, especially replicated for the PPP Law in this study (Appendix I), aims to provide the public sector with means to select providers for the services above by means of a bidding procedure that kicks off with a proposal submission request to guests identified in a short list and that may be decided by assessing the best cost effectiveness offered to the hiring party. Current legislation does not authorize this procedure.

22 Ribeiro: "Good conditions and difficultties to involve the private sector with infrastructure in Brazil" (2010).

23 Contratação de Serviço de Consultoria.

Brazilian legislation on administrative hiring established two types of procedures for any public hiring: by means of a public tender, which is the general rule, as per article 37, XXI of the Federal Constitution, and the direct hiring exempt of tender, which is the exception, as per articles 24 and 25 of the Tender Law. As for direct hiring, it can be done by an exemption process[24] (article 24) or tender exemption (article 25)[25], as it is the case.

Law 8.666/93 qualifies as technical service "technical consulting and advising, and financial and tax audits" (article 13, III). But the aspect of uniqueness, measured on a single case basis for applying the tender exemption, has been a target of dispute. Controlling entities, at one side, challenge permits for the direct hiring of such services and argue, administratively and legally, tender-exempt hiring. At the other side, there is the public sector and hired parties, fearful of the lack of security caused by the divergence.

The proposal is to institutionalize the procedure used by the World Bank in cases like this, known as "invitation-letter", which is a mechanism through which consultants chosen due to their experience and trusted relationship with the bidding entity are invited to present their prices and approach to the problem, and are selected according to the best cost effectiveness offered to the hiring party. It is the same tender rationale for the invitation model on Law 8.666/93, with the differences as follow: the estimated price of the hiring would not be limited to R$ 80.000,00 (article 23, II) and the selection would preferably be made by technique and price criteria, so to ensure the best cost effectiveness for the public sector.

World Bank's invitation-letter is similar to ANATEL's consultation. Created by article 58 of Law 9.472/97, and regulated by articles 14, 15, and 16 of its Hiring Regulation, the consultation is a tender procedure for hiring consulting services for the Agency. It admits that the service can be tendered, as wished by controlling entities; however it does not imposes the lower price rule and open the competition to any company.

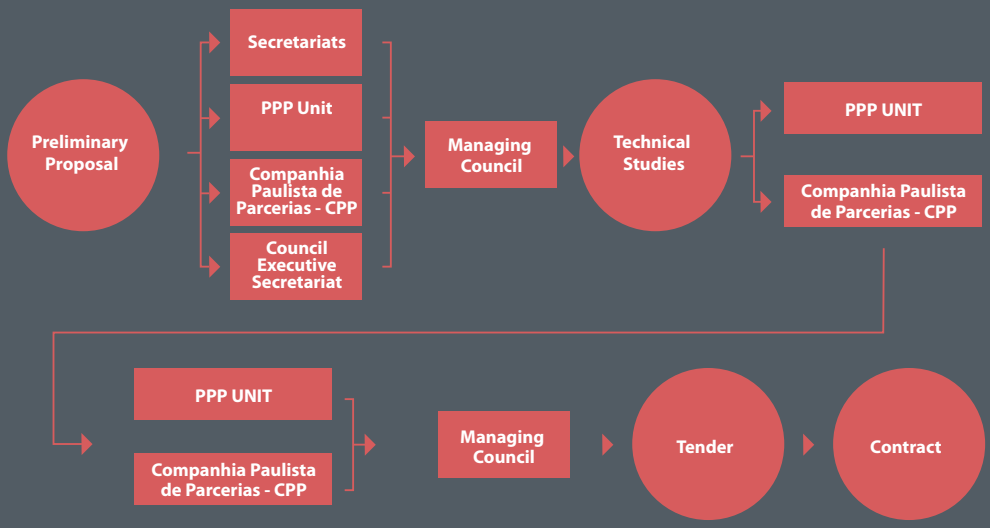
This mechanism would provide faster project formatting. Also, it is fundamental that all states and cities review the necessary approval levels for a project of this nature. Excess of controls and the submission of technical aspects to political analysis do not contribute much to make PPP projects feasible.

By applying developed and disseminated, responsible entities, such as PPP Units, the Ministry of Planning or the Economic Development Secretariat in their federal, state and municipal levels would be safer to assess projects and expedite decision making for approving or not a certain project. Such initiative could be spearheaded by the Federal Government, by elaborating good practices and standard minutes that could be replicated at the other Government instances.

24 Direct hiring by tender exemption (article 25) is only applicable for specific cases as established by the law. This exemption differs from the tender exemption, which is characterized by the impossibility of competition. In cases of exempt, a competition would be feasible but the law allows for exemption because it made an option for a given goal instead of ensure private competition for business with the State. Thus, the lawmaker assessed goals as significant and high importance and decided that these goals were pursued directly, without a tender.

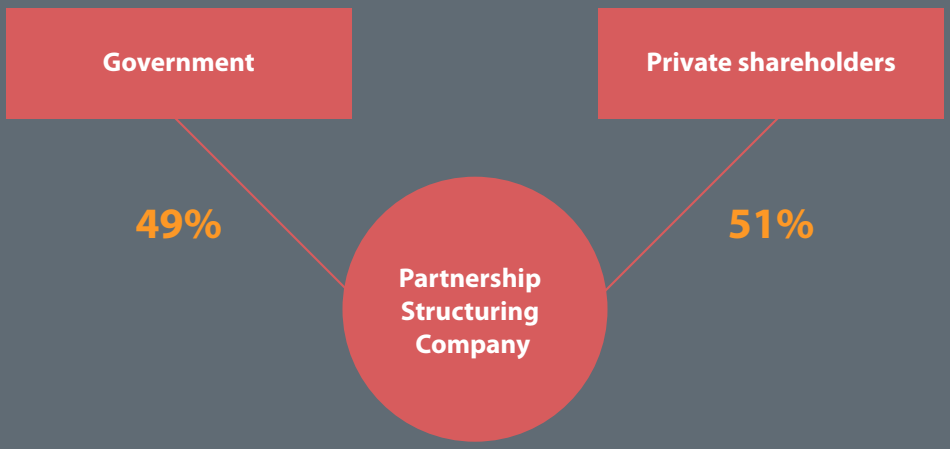
25 As for direct hiring by exemption of tender (article 25), it is appplicable when competition is not feasible. The reasons for this are multiple, among which are the existence of a single service provider or the administrative need for technical services of a unique nature delivered by professionals notoriously specialized.

CHART 54: STEPS FOR APPROVING THE ALTO TIETÊ PPP



Source: State of São Paulo Regional Development and Planning Secretariat

CHART 55: PARTNERSHIP STRUCTURE FOR PROJECT STRUCTURING COMPANIES



Drafted by GO ASSOCIADOS.

#6.2 [INCENTIVES FOR CREATING PROJECT-STRUCTURING COMPANIES AND TRAINING FOR CITIES]

Supplementing the previous topic, this proposal aims to encourage the creation of companies to structure PPPs and grants, especially for city projects. CHART 55 indicates the ideal partner structure for a partnership structuring company

As highlighted before, hiring specialized consultants for modeling public-private partnership projects is subject to Law 8.666/93 and to the availability of public resources. This way, it is very slow to implement social and economic infrastructure projects that are critical to eliminate bottlenecks, create jobs and ensure long term economic growth. In this context, this document proposes creating Project and Partnership Structuring Companies (PPSC)

These would be private companies, focused on conceiving, proposing and formatting public--private partnerships. A PPSC would work just the same as EBP, which experience is described in this Study. Its operation would be restricted to project elaboration, and it would not join its execution and would not have any economic interest.

Specializing in legal, economic-financial, and technical-operational modeling, this company would not be subjected to Law 8.666/1993 for hiring consultants and experts, nor depend directly on the State resources availability. Thus, carrying out all studies that precede the tender would be expedited, allowing for developing projects with higher quality and their execution in shorter periods of time.

It is suggested that the PPSC focus lie in modeling public-private partnerships and grants for city governments, considering the structure complexity of these projects, above all for small and mid-sized cities.

Thus, the PPSC can support cities to create intercity consortiums and develop some projects through PPPs. This instrument, regulated by Law 11.107/05, constitutes a private company or a public association among two or more cities within the same state, aiming to execute common interest projects, works and/or services focusing on regional development.

On what concerns to small and mid-sized cities, there are more difficulties for them to implement alone public policies in areas as health, education, handling and treatment of solid waste, for instance. Consequently, establishing intercity consortiums allows for implementing critical projects, contributing for generating synergies among local governments, allowing for gains of scale and where several entities working together can connect management, politics and social issues[26].

There is room for carrying out public-private partnerships by intercity consortiums, above all in small and mid-sized cities that are right the ones experiencing barriers for developing these projects. There is room for implementing PPPs in several areas as health, housing, transportation, and education.

It is worth mentioning that the PPSC shall not operate in a given state. Although it is critical to have consultants specialized on the peculiarities of each State and in sectors presenting larger deficits, the PPSC can help to create PPPs all over the country, operating as a dissemination vehicle of

26 Intercity Consortiums for Public Policies in the State of Minas Gerais: Networks for efficient service delivery to the citizen. Dionysio Borges and Daniel Mesquita. (2010).

know-how, exporting best practices and methodologies to other states.

As mentioned earlier, carrying out an economic-financial feasibility study is critical to determine a cap for the counter payment. The counter payment shall not be below market, so to fail to attract bidders to the tender, as not to be above the public sector's capacity to pay. The contract design shall be so to allocate risks to the party that is best to manage them, in order to convey security to private partners and project financial backers. The quality standard shall be properly specified and the grantee remuneration structure shall be modeled according to the quality of services delivered. Executing all these steps by a specialized company can attract private investments to the state, both from local and foreign investors. Furthermore, as this company would operate all over Brazil, it is able to identify sectors in which companies can expand their role, supporting the economic growth of states and the country.

Albeit the remuneration for studies conducted by the Partnership Structuring Company is to be borne by the tender winner, as per article 21 of Law 8.987/95, similarly to what happens to the Brazilian Project Structuring company, the seed capital required for its constitution and operation is raised among partners, and it is expected to total R$ 5 million.

#6.2.1 [CASE STUDY: EBP]

The 1980s and the 1990s were characterized by stagnation and the loss of capacity to structure projects due to the dismantling of public entities in charge to do so. The private initiative, aware of the gap to be filled and the public sector need to capture their expertise, created the Brazilian Project Structuring company (Estruturadora Brasileira de Projetos SA, EBP) in 2008.

Although two shareholders are state-owned companies (Banco do Brasil and Banco Nacional de Desenvolvimento Econômico e Social), EBP is a private company created to support the private sector on drafting and/or coordinating studies, technical support and private project structuring for exploring economic activities or infrastructure projects in order to expand and improve the offering of public services.

EBP clients are federal, state and city governments and it develops projects for both traditional infrastructure, such as highways, ports, airports, railroads, logistics platforms, urban transportation and sanitation, and social infrastructure, such as hospitals, schools, child care facilities, and socialization centers. The company is remunerated by the tender winner, as per article 21 of Law of Grants, 8.987/1995

"Studies, investigations, surveys, projects, works and expenses or investments incurred and connected to the grant of utilities for the tender carried out by the granting power or by its permission will be at the disposal of the interested parties, and the tender winner shall reimburse the expenses corresponding and specified in the tender's notice". (Article 21, Law 8.987/95)

It is estimated that the impact of approved projects, among investments (purchase of assets, machines and equipment and expenses with constructions) and operational expenses (wages, maintenance, repairs, asset depreciation) is around R$ 53 billion.

EBP shareholders are BNDES, Banco do Brasil, Banco do Espírito Santo, Santander, Banco Votorantim, Bradesco, Citibank, HSBC, and Itaú BBB. All are equal shareholders, having one vote in the Board. EBP mostly outsources studies to specific consultants. As EBP is a private company, it is not subjected to hiring rules as per Law 8.666/93.

The company is prohibited by its statutes to:

- Make loans or issue bonds of any nature
- Deliver real warranties or sureties
- Join the social capital of other companies
- Draft studies or provide any type of technical support to competitors or potential competitors in infrastructure public project tenders
- Perform leveraged derivatives operation as well as direct and indirect investments in variable income.

The company statutes allow EBP to draft projects only, and never to execute them or be a partner of them. The company and the public sector identifies public interest projects that are attractive to the private sector and drafts technical-financial studies, tender notice minutes and administrative contracts. From the onset, BNDES due to a Technical Cooperation Agreement with EBP, follows all studies development.

Government's authorization for EBP to perform technical studies is granted on a non-exclusive basis, do not generates preference rights related to the grant, do not force the public sector to run a tender (this decision is discretionary), do not create alone

CHART 56: PHASES IN WHICH THE BRAZILIAN PROJECT STRUCTURING COMPANY SUPPORTS THE GOVERNMENT

Phases through which the Brazilian Project Structuring company supports government

Identification of common interests in projects

Identification of projects in public interest and benefits for the private sector
Agreement with or authorization from government
Definition of benchmark terms for technical studies and the shortllist of potential partners
Competitive selection of EBP technical partners for the studies

Elaboration of technical studies and legal minutes

Development under government's guidance:
Technical studies: Engineering, Environment, Economic-financial modelling
Legal instruments: Tender's minute, grant/PPP contract minute

Auction and contract signature

Advising and technical support during the public consultation phase and auction until the contract signature
The investor winning the auction reimburse expenses to EBP (article 21 of Grant Law # 8.987/1995)

Source: Estruturadora Brasileira de Projetos

any rights to reimbursement of expenses for drafting a study, and it is personal and not transferable.

BNDES is responsible for the deliveries below, according to the technical cooperation agreement with EBP:

- To provide a technical report determining if the project fits the Agreement's goal when requested to by EBP
- To follow-up management and execution of studies, in order to align them to industry's guidelines and public policies, and safeguarding impartiality, quality and competition for tendering the projects
- To articulate with direct and indirect Public Administration entities at the Federal, State and City levels upon manifestation by the entity aiming to carry out a tender of the project that was developed under the Agreement
- To support direct and indirect Public Administration, Federal Government, State and City entities in the consultation process and public discussions
- To provide opinion on the documentation related to the studies, including reports, tender notices and grant contracts.

Chart 56 summarized the phases in which the Brazilian Project Structuring company supports federal, state and city governments:

It would be useful to have more companies such as EBP. It would create a healthy competition on project structuring and would expedite the process. It is particularly recommended that partner structuring entities have the State as small shareholder and are focused especially in formatting PPPs and grants for cities.

#6.3 [REARRANGEMENT OF THE RISK MATRIX VERSUS COMPANY SIZE]

There are risks that cannot be precified and there are risks that might be precified and mitigated/securitized, but at huge costs through hedge and insurance instruments. In a country like Brazil, where the market of risk packaging and diversification at accessible financial instruments is not well developed, companies face obstacles to insure even the simplest risks.

In developed economies, there is an interesting trade for multiple financial derivative types[27] that allow such securitization and thus, the international experience in terms of allocation of risk-related obligations, has always been to delegate as much as possible to the potential private partner. And, by mimetizing the international experience, but not contextualizing contracts under the reality of the Brazilian market, the local experience wrongly reproduces the external model almost fully.

This has been translated into overpriced tenders or smaller premiums, in the case of tenders in which the smaller counter payment bidder wins. If there is no accessible financial instrument, the only resource is to apply a mark-up upon the cost the company believes as real for executing the investment, protecting the minimum attractive profitability in face of risk and the eventual execution of the investment.

Another issue not less important is the need for compatibility of risks to be taken by the private partner with its size, considering that mid-sized companies face many difficulties to access this type of instrument.

When large companies are compared against mid-sized ones, the former tends to bear costs from hedging/securitization in proportional terms that are significantly lesser than those for smaller companies. This is due to the fact that larger companies have diversified portfolios, allowing for diluting the risk.

Thus, as more risks are allocated to potential private partners, more exclusive the process becomes, as only larger companies have the strength required to bear those costs face to the lack of mitigation/securitization instruments. Hence the need to align the contract risk allocation matrix from the public sector to the private partner.

It would be desirable that the public sector take part of the risks that are traditionally allocated to the private partner, in order to attract mid-sized companies to the tender.

Of course, it does not mean to absorb all risks or that risks will be allocated to companies that cannot mitigate them the best way. It is required a thorough analysis of probability of events, their nature and severity.

For instance, it would not make much sense for the public sector to take financing risks or exchange rate risks if the private partner takes loans abroad as this is an exposure decision that the private partner is not forced to incur.

In the other hand, it seems suitable the limitation and obligation definition for geological risks of a certain project, removing a great deal of such risk from the private partner to prevent large overpricing/inefficiencies. An example of this is the Tamoios Highway in the State of São Paulo that demands the construction of a series of large tunnels.

27 As it happens in developed economies with Mortgage-Backed Securities, that unchained the 2008 crisis or derivatives related to weather conditions, among others.

In the other hand, if part of equipment is mandatorily acquired abroad - for reasons of technology or lack of development of the local market - there will be an exposure to exchange rates, to which all participants are subjected. Consequently, this shall be a risk that has to be carefully assessed by the public sector in situations of this kind.

Contract risk matrix assessment shall be thorough and attentive to the current economic-financial reality in each sector and to the nature of each project. It is recommended a new interpretation by regulating agencies and public entities in charge of conducting studies and making new PPP and grants feasible of the traditional risk allocation carried out in Brazil versus the effective cost of the instruments required to this.

Thus, it is expected to attract the investor's rational decision when, lacking accessible risk mitigation instruments, would lead to increase the investment costs related to an inefficient risk allocation, once the original model assumes that the private partner shall protect itself from the risk, but does not specifies how.

Another recommendation would be to public sector to effectively simulate in their studies hiring costs of such instruments so they can better understand and structure best risk allocation methods, suiting them to potential mid-sized entrants.

#6.3.1 [BENCHMARK INTERNAL RETURN RATE DEFINITION: COVERING OTHER RISKS]

There are intense criticisms from the private sector towards the methodology usually applied by the Federal Government to measure the own capital's cost. This method determines the benchmark internal return rates for modeling grants and PPP projects.

As it can be seen in several documents produced by the Agência Nacional de Transportes Terrestres (ANTT), Agência Nacional de Energia Elétrica (ANEEL) and other regulation entities, it is easy to find that all capital cost models are based on the famous but outdated Capital Asset Pricing Model (CAPM).

This simple model covers the estimation of parameters for the equation below:

$$R_a - R_f = \beta \cdot (R_m - R_f)$$

This equation shows the relation between the excess of return between an asset R_a to be precified and a free risk rate R_f – that translates the systemic risk that all players take by deciding to invest their money in any investment versus the excess of return of a market portfolio and the free risk rate weighed by the risk factor related to the industry/company being assessed.

This model was conceived by Sharpe and Lintner in the 1960s, under an approach of general equilibrium, where players are supposedly able to set up portfolios with assets that can be perfectly divided and which prices follow a log-normal distribution, with perfect comprehension of risk aversion mechanisms in a scenario where risk can migrate from one asset to another, in order to maximize their risk-return ratio. Due to its simplicity, the model has been widely used since then. In the case of the entities mentioned above, they use this model to measure the expectation economic agents have towards the profitability of resources they invest in projects of the same nature, for public traded companies.

Thus, it is easy to realize that the assumptions are not realistic and, for this reason, there is a strong tendency to overprice a certain asset, since many risks are omitted and absurd assumptions are accepted.

For this reason, many works arose in empirical finance economy that made a critique of CAPM, such as Fama & French (1992, 1993, 1996), Cochrane (2005), Yoshino (2009) and Yoshino & Bianconi (2012, 2013).

To mention the most simple and trivial of these works, Fama & French (1992), manage to prove that many other risk factors are important to precified financial assets, such as company size and the ratio between the assets's accounted values versus market value.

More recent works by Yoshino & Bianconi show the importance of several other risks for the precification of financial assets related to the infrastructure and real estate sectors in Brazil, empirically demonstrating the large differential between the simple applications of the CAPM model versus the so-called multifactorials, that cover other risks to which companies are subjected.

Among these factors, several authors highlight the risks that follow:

- Market risk: Economy today is globalized, with large capital flows among economies. Thus, the market risk has to be weighed not only in relation to local stock market behavior but also to large movements abroad. (Bovespa and NYSE / NASDAQ);
- Risk aversion: Decision-making is directly affected the "fear" the investor has in a given moment related to the economic situation he is living in, which is hard to capture as across longer periods, the economy ebbs and flows;
- Other financial-economic indicators:
- The Operational and Financial Leverage Degree increases the risk of bankruptcy of profit multiplication, affecting the risk assessment;
- The Size of the Company affects a company diversification and robustness, as a larger company tends to be more resilient to bankruptcy than a smaller one;
- Periodicity of Distribution of Dividends and Interests upon Own Capital affects the investor perceptions on achieving results;
- Crisis Control (allowing for assessing the crisis period), as in the traditional methodology, many authors and CAPM users remove observations from these periods although companies are still existing;
- Macroeconomic and institutional risks: exchange rate variation, country risk
- Fixed Effects: Specific control for the particularities of each company, such as corporate governance, compliance and sustainability.

A series of issues emerge when such a simple model as CAPM is used, once it tends to sub estimate risks and, thus, the return demanded by investors for a given project. For instance,

such use is directly reflected in the amounts offered as counter payments in cash and resource inputs for PPPs; and in minimum amounts required for fixed/variable onerous grant in the case of traditional grants.

Thus, due to this lack of understanding, a key conflicting point is generated between the public and the private sectors - how to adjust the remuneration face to the risks taken (or to be taken).

As a result, it is suggested the adoption of financial asset precification models that best reflect risks taken by private partners both for grants and PPPs, creating a new convergence point to unlock infrastructure projects in Brazil.

#6.4 [INCENTIVES FOR ATTRACTING RESOURCES]

As seen, credit grants for project finance are performed through a perspective very different from a traditional loan, in which the company's reputation, financial robustness and history are analyzed.

Considering that creditor resources for receiving credit are limited to the project revenue, there will be a huge loss is the project is not successful. This way, creditors will perform a detailed analysis of the project structure and feasibility, in order to determine if the project terms are bankable or not. This topic aims to provide an overview of the practical requirements that creditors analyze when facing a project.

Creditors try to be assured that the risks arising from the project are related to the proper operation of the project are limited and manageable, so that a bankable project involves an economic, financial and technical plan that is very solid with the proper risk allocation for the project's nature.

#6.4.1 [FUND CREATION]

As we have seen, it is critical to develop supplemental structures to finance projects, aiming to increase private sector's participation in expanding and upgrading Brazilian infrastructure. As explained in Chart 57, the public-private partnership financing structure in Brazil may take place through the capital markets and loans from private banks, multilateral institutions and the BNDES. Considering that the BNDES does not have the capacity to finance all required projects, it is important to give incentives to the development supplemental financing structures through the capital market, for instance.

Attracting resources from the private sector through funds investing in infrastructure projects

makes sense in a context where public investments are falling and there are high deficits related to the execution of public works and delivery of public services. In the current situation, with the Selic rate below its historic levels affecting CDI-based investment yields, investors need to diversify their investments and infrastructure funds might be a good option.[28]

The Caixa Econômica Federal bank launched an investment fund on shares of companies related to the infrastructure sector. The CAIXA FI Ações Infraestrutura fund invests resources in a portfolio comprising shares belonging to companies in industries related directly or indirectly to infrastructure. The fund demands minimum investment of R$1,000.00 and management fees of 2%. The fund yielded 18.8% in 2012 while Ibovespa yielded 7.4%.[29]

In the beginning of 2013, the Rio Bravo asset[30] manager announced that it was launching an investment fund in corporate debt bonds to finance large projects, the so-called infrastructure bonds. According to Mário Fleck, president, the fund's targets are urban mobility, energy, civil construction and other large projects. Since then, the asset manager launched the Energy I Rio Bravo Investment in Partnerships Fund (Fundo de Investimento em Participações Rio Bravo Energia I), investing in hydropower plants, energy generation by biomass, gas-fueled thermal plants, oil- or coal- or urban garbage-fueled thermal plants, steam-based thermal plants, transmission systems, photovoltaic plants and small hydropower central plants[31].

Law 11.478/2007 created the Investment Fund in Infrastructure Shares (Fundo de Investimento em Participações em Infraestrutura, FIP-IE). Since then, financial institutions authorized by the Security Exchange Commission (Comissão de Valores Mobiliários, CVM) to managing bonds and securities portfolio may create an Investment Fund in Shares as closed consortium, which aims to invest in new infrastructure projects in Brazil. Projects considered are those implemented after the passing of the Law, in energy, transportation, water and sanitation, irrigation and other areas seen as priority by the Federal Government.[32]

New projects contemplated by the Law may be expansion of projects implemented or to be implemented, since investments and the expansion results are segregated by means of creating a Special Purpose Vehicle. The SPV shall have shareholders but can also be public or private and at least 90% of the FIPIE assets shall be invested in their shares, subscription bonuses, bonds, securities and not in other company shares or other securities. The FIP-IE shall have at least five shareholders, and each shareholder cannot have more than 40% of shares issued or receive more than 40% of the fund's yield.

The Investment Fund in Infrastructure Shares shall take part of the decision process for the companies in which the fund has invested, working in the definition of their strategic policies and management, namely by indicating members to the Board. It can operate also by having controlling shares, by celebrating shareholder agreements or by carrying out adjustments of diverse nature or adopting a procedure that ensures effective influence for the definition of strategic policy and management to the fund.

Yields gained from selling FIP-IE quotas, even when caused by the fund's liquidation, are subject to 15% income tax upon the positive difference between the withdrawal amount and the quota acquisition cost. Profits made by selling quotas will have no tax for individuals and 15% tax for companies in operations carried out in or out of the stock market. Dividends paid to individuals are exempt of income tax.

Upon issuance, the quotas of these funds are traded in the stock market as a variable income asset. Consequently, the investor may earn both

28 Although there is short-term movement of increasing interest rates due to inflation concerns, it seems reasonable to suppose that the interest rates will find levels in the mid-term that are lower than the levels that characterized the Brazilian economy in the last two decades.

29 www1.caixa.gov.br/investidor/acoes/fi_acoes_infraestrutura.asp

30 Rio Bravo launched in 2010 a private equity for purchasing shares of companies in the energy sector. More than R$ 500 million were obtained to invest in wind farms and other companies.

31 Small hydropower central plants.

32 Investment in other areas considered as prioritary by the Federal Government was included by Law 12.341/2011.

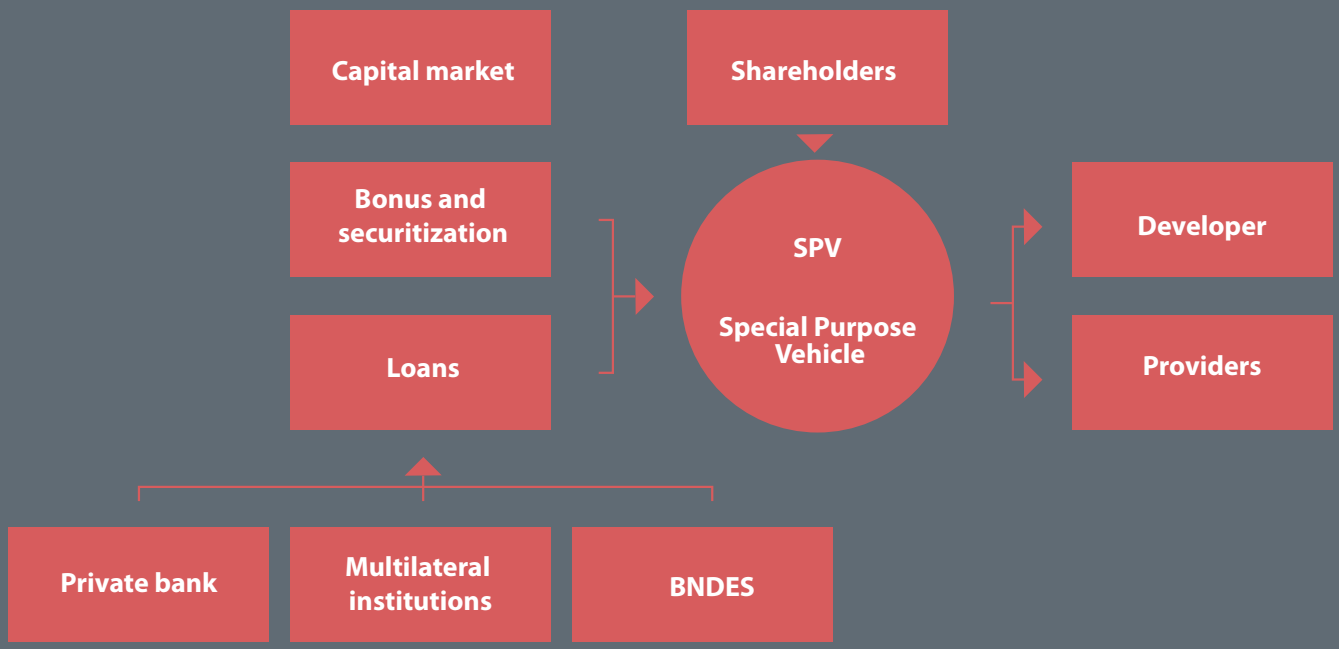
by quota valorization and the distribution of yields by the fund. Also, once the asset is operational, infrastructure funds tend to have a stable cash flow, ensuring constant investments to the investor. In the other hand, generally, the cash flow in the pre-operational phase of these funds is not stable yet, so the yield to be offered shall be higher to offset risks for investing in an asset in construction. Furthermore, it is worth mentioning that these funds are long-term investments, which means that liquidity in the after-market is relatively low.

Infrastructure investment funds may offer returns near to 10% p.a. or inflation plus 5%. One of the longest bonds issued by Treasury is NTF-F, maturing in 2023 and offering yields of 9.35% p.a. subject to income tax[33].

The success of investment ensures more profitability of funds, which by their turn encourages more private investments. Overcoming bottlenecks supports the State modernization, sustained growth ensuring jobs and income and, then, a more competitive economy, allowing for companies to go beyond the State borders and attract more local and international investments.

33 www1.folha.uol.com.br/fsp/mercado/74799-bancos-preparam-nova-aplicacao-com-isencao-de-imposto.shtml

CHART 57: BASIC MODEL TO FINANCE PUBLIC-PRIVATE PARTNERSHIPS



Source: Ministério do Planejamento Orçamento e Gestão.

#6.4.2 [FINANCING THROUGH RPPS FUNDS]

It is known that the Brazilian capital markets is not mature enough, causing the charge of high spreads from the borrowing part in relation to risks that are many times overestimated; furthermore, analyses are strictly conducted on corporate rating basis.

To make things worse, interest rates are rising to ensure that inflation is contained, as per Chart 58, showing a projection of forward rates extracted from unit prices of Treasury Bonds (as of January 2015).[34]

Thus, considering an increase of interest rates to stabilize prices and the required fiscal adjustment to restore the country's financiability (reflected in grades such as country-risk, EMBI and rates such as Credit Default Swap), BNDES, which was being financed with Treasury resources will have its loan capacity reduced.

In the other hand, there is a billion-dollar pension fund and social insurance own regimes (RPPS) industry with strict actuarial goals to be achieved and that are subject to intense regulation, imposing restrictions to asset allocation, such as a higher demand for allocating in fixed income assets.

According to the Ministry of Social Insurance, there were approximately R$ 175 billion invested by RPPS all over Brazil in 2013. Chart 59 breaks down these resources.

Thus, there is a high potential to attract investments when considered 41% of fixed income assets that is part of these R$ 175 billion. If these amounts are updated according to the inflation accumulated from September 2013 to January 2015, discounting real gains from the need to reach actuarial goals, the potential for investments is almost R$ 80 billion.

Chart 60 breaks down RPPS resources between cities, state capitals and states. Observe the room for attracting investment from state RPPS.

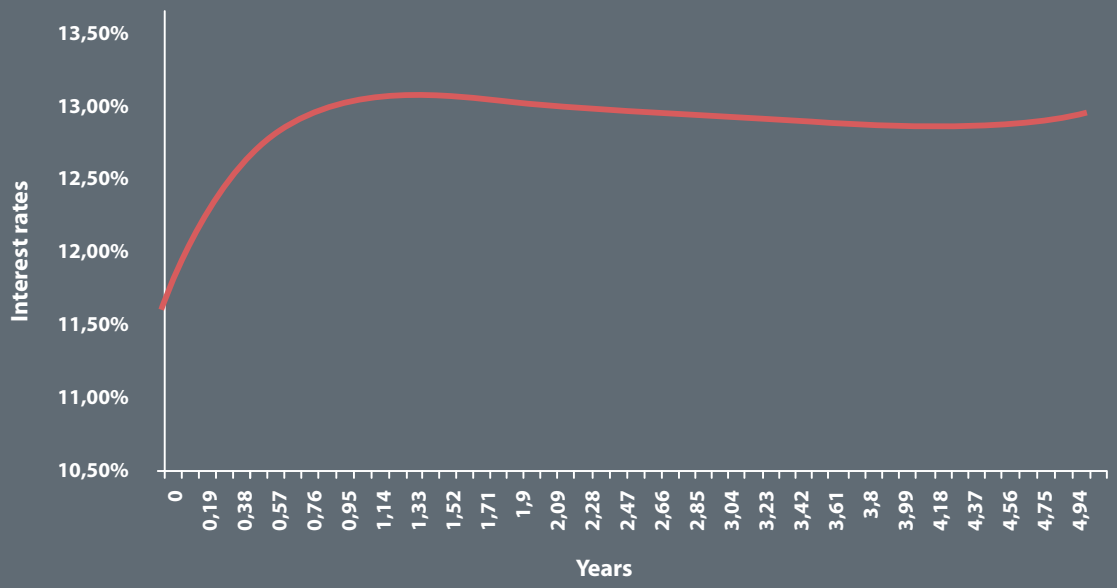
Thus, it is time to think in bond structuring tied to infrastructure project debt, such as PPP, issued by SPVs in charge of managing, building and delivering services with PPPs.

RPPS mentioned above have aggressive goals to be achieved in the mid- and long-term, considering that economic agents have less patience in Brazil than in other countries (showing a higher discount rate over time) and there is the trend to consume more of their available income, saving less.

As a result, they demand the yield for their investments to be significantly higher and then the neutral real interest rates (the one where the

34 For more information on how to calculate the forward rate, see Wilmott (2010).

CHART 58: INTEREST RATES PROJECTION



Forward (Interest rates implicit in the bonds)

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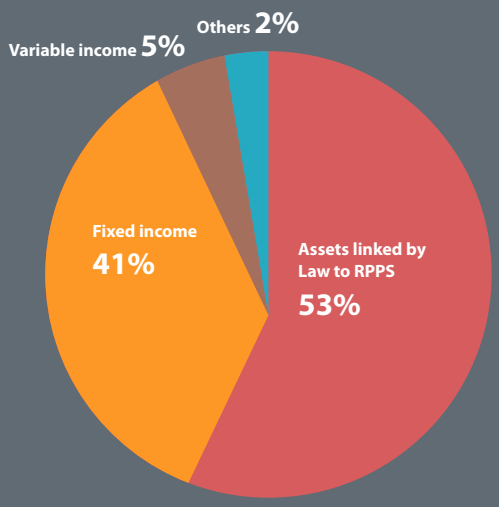
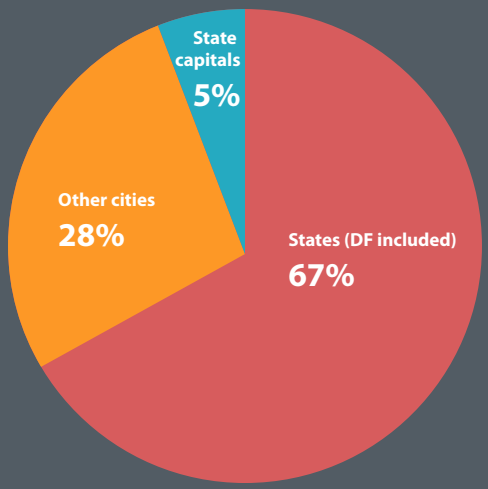
CHART 59: BREAKDOWN OF RPPS INVESTMENTS IN BRAZIL



Drafted by GO ASSOCIADOS.

CHART 60: BREAKDOWN OF RESOURCED BY ENTITY TYPE



Drafted by GO ASSOCIADOS.

economy finds its equilibrium, keeping inflation, growth and unemployment constant) becomes much higher[35].

This means that in order to keep the satisfaction/utility of economic agents, considering their trend to consume much today and worry less about the future (the impatience of agents) they require higher returns (interest rates over invested capital) to invest and save in order to offset eventual loss of well-being caused by less consumption. Thus, the impatient agents are, higher is the economy's neutral interest rates, so that savings/investments made by agents have to yield higher returns to encourage them to consume less.

Thus, based on this theoretical consideration in economy and avoiding actuarial technicalities, considering studies that have measured the discount rate over time of agents in Brazil, such as Mussolini & Teles (2012), Issler & Piqueira (2002) and to convert those in neutral interest rates within a general equilibrium model, one obtains neutral rates within a 4%-8% range.

Thus, given this theoretical demand that agents would have towards resources invested in RPPS and considering that not so long ago, real interest rates were almost at 2%, there is a significant challenge for asset managers to reach the actuarial goal as it can be seen in Chart 61.

As shown on Chart 61, it was not easy to reach these actuarial goals in the recent past, as basic interest rates floated due to the need for stabilizing prices and to promote economic growth.

The Brazilian Central Bank is implicitly applying an interest rate rule based on Taylor (1991) to guide these interest rates. So when the economy is not growing close to its potential, the Central Bank tends to decrease real interest rates in order to provide an economic stimulus; and when inflation is high, the Central Bank tends to increase real interest rates to cool consumption down.

Consequently, it is natural that wild oscillations take place due to economic cycles, generating even stronger pressures to reach actuarial goals that aim to achieve yielding goals in the long term.

It seems to relevant to suggest to link the needs of both ends here discussed - the SPV from the side demanding credit, and RPPS, from the financial backer side. It is proposed to make possible that credit demanders can borrow from the RPPS, given the difficult scenario for obtaining new resources. And the RRPS would have a stable warrant to obtain fixed income yields in the long term.

Several cities and states have the so-called RPPSs. These are social insurance own regimes with indirect management by the states themselves, that appoint part of the board and the management is usually an administrative entity of the state. Thus, as a last resort, states are in charge of providing supplemental funding required for the actuarial and financial RPPS equilibrium.

State governments, thus, have political responsibility if the RPPSs management fails.

Two pieces of legislation are relevant to this point. First, Law # 9.717/98 established general rules for organizing and operating social insurance own regimes for Federal, State, City employees and state military personnel. Há, portanto, um natural alinhamento de interesse em uma estrutura na qual o ente federativo aparece nas duas pontas das obrigações. Assim, existe um natural desinte-

35 This topic was developed by pioneering works from Kydland & Prescott (1981) up to more recent ones (Smets & Wouters, 2007; Del Negro & Schorfheide, 2013).

resse do Poder Executivo em relação a um default com as obrigações junto à SPE, já que, no limite, o próprio Poder Executivo teria que suplantar eventuais obrigações junto ao RPPS, como forma de contribuição suplementar.

Second, Rule 403/2008 of the Ministry of Social Insurance established applicable rules for actuarial assessments for federal, state and city Social Insurance Own Regimes, defining parameters of segregating the mass. According to such rule, the Social Insurance Council shall determine normal and supplemental contributions so to reach the fund's financial equilibrium according to actuarial goals. This means that the Executive branch is the last resort instance to input resources in order to achieve financial equilibrium for the fund.

There is a natural interest alignment in a structure where the state sits at both ends of obligations. The Executive branch is not interested in not paying counter payments to the SPV as the Executive branch would have to offset eventual loss of equilibrium caused by such default to RPPS.

Conceiving the capital flow structure shown in Chart 62, states sits at both ends, having a management fund structure for debt bonds issued by the SPV in the PPP and the SPV itself, in the middle.

It is mandatory to have an Intermediary Fund, as per Article 15 of Resolution 3922/2010 of the National Monetary Council that determines the RPPSs investment methods:

"Social insurance own regimes can only invest their resources in managed portfolios or in invest-

CHART 61: EVOLUTION OF THE REAL INTEREST RATES

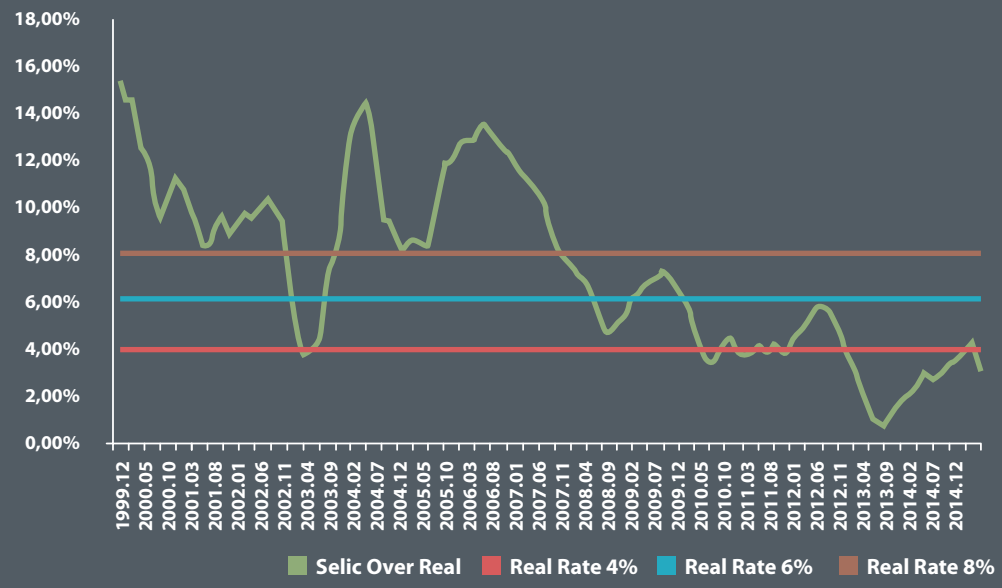


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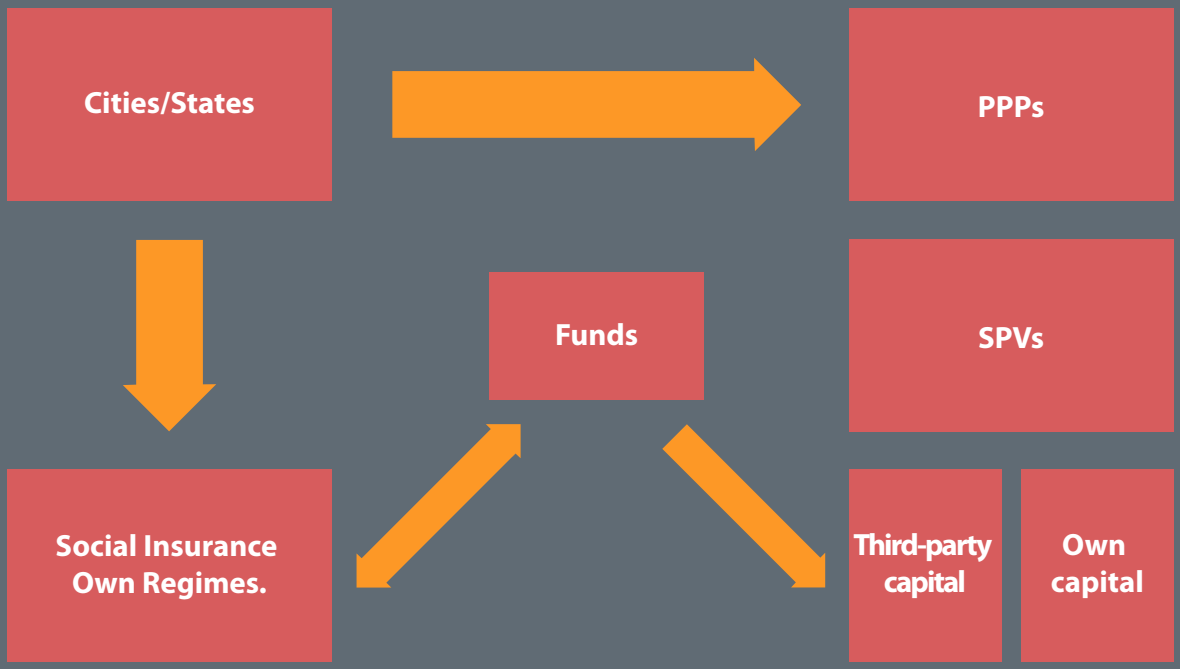
CHART 62: CAPITAL FLOW STRUCTURE



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ment fund managed by financial institutions, other institutions authorized to operate by the Brazil's Central Bank or companies authorized by Brazil's Security Exchange Commission for managing the portfolio considered, by those in charge of the managing resources from the social insurance own regime, based among other criteria, in classification performed by risk agencies operating in Brazil..."

Notice that the need for bond warrant would be mitigated as there is no risk of default for their potential buyer (RPPSs) as discussed earlier, because the Executive branch is in charge of compensating the RPPSs.

This would not prevent new subordinate issuances, preserving eventual preference to other creditors that the SPV may attract. Such issuances would not be under this proposed structure, granting more diversification and flexibility at obtaining resources.

In short, the proposal sets the roles below for all involved agents:

- **State:** to pay normal and supplemental contributions to RPPSs in order to ensure their financial equilibrium; pay all required inputs and cash counter payments to the SPV;
- **SPV:** execute investments and service deliveries inherent to the PPP; issue debt bonds to get resources to carry out all investments;
- **Fund:** Management of debt bonds issued by the SPV in charge of the PPP in the city; sell quotas and remunerate RPPS;
- **RPPS:** Purchase of quotas sold by the Fund, respecting their actuarial goal and social insurance plan contemplating diversification policies, risk exposure and other variables.

Thus, it is expected that at least part of the capital needs from the potential private investor are met by making "new money" feasible and cheaper than the traditional method of accessing the capital markets for an issuance, once the issue of warrants from states is greatly mitigated. It is precisely the issue of warrants that has caused barriers to create new projects. Financing through RPPSs could be an alternative to deal with the lack of subsidized resources from the main development financing entities.

#6.4.3 [CREATION OF HOLDINGS]

The innovation here proposed also contemplates the development of supplemental structures for financing PPPs by means of increasing the participation of the capital markets and the creation of warrant mechanisms that would increase legal security to grantors and project finance backers, which reflects directly on risk premiums, financing costs and consequently, in the counter payment to be made to the private sector.

This is beneficial to the public sector, as it allows for nurturing the development of critical projects for the State's economy. For the private sector, investing in infrastructure projects increases the number of industries to operate and deliver best infrastructure, overall in transportation, helping to increase their competitiveness.

Creating a state-owned investment company would overall foster infrastructure projects in states in cities, from a financial standpoint. Having the government with a small participation in the project grantors reflect directly in the amount of counter payments to be made to the private sector, helping to reduce risk premiums and financing costs.

Also, ancillary incomes could be explored, allowing for the generation and appropriation of the value created by infrastructure projects and then, the usage of such resources in new infrastructure projects.

The company could also be allowed to create and participate in investment funds and real estate funds, to deploy private resources from individuals and companies to supplement project financing that are critical for the economy.

#6.4.4 [INFRASTRUCTURE BONDS]

The Law 12.431, as a result from being converted to law from temporary bill # 517 dated 12/30/2010, created the so-called infrastructure bonds, issued to finance investments in infrastructure considered as priority. The law's goal is to ensure privileged tax treatment to investors, whether they are individuals or companies.

This tax treatment is justified as the effective net yield is increased, part of the remuneration fee would be reduced, so to offset a part of this benefit to the debt bond issuer, expecting thus to leverage investments in infrastructure in Brazil. However, the desired effects did not materialize upon passing this Law.

The majority of debt bonds yield issued in Brazil are tied to the CDI - the yield being CDI plus spread according to the company and/or project risk.

When the Central Bank raises interest rates, aiming to cool down the economy, so to reduce pressure upon prices (inflation), funding costs increase naturally as CDI rates respond directly to variations to the Selic rate. But due to the same economic crunch caused by an elevation in interest rates, there is a negative perspective for cash flows, which compromises the capacity of paying debt issued by companies.

In this regard, it is proposed the following restructuring alternatives aiming to increase the mechanism effectiveness by expanding the original proposal:

- Pre-determine yields with fee + inflation (example: inflation + 6%)
    - Reducing the variation of financing costs due to the execution of monetary policy, in order to ensure stable financing as the cash generation of these

companies is greatly adjusted by IPCA or other inflation index.

- Add extra remuneration related to sharing profits
    - Joining interests between the provision of safe financing to the debtor versus higher participation on the profits arising from the loan by the creditor (higher payments when the economy goes well and fewer payments when interest rates rise).
- Continuity of tax benefits related to debt bonds yield
    - Maintenance of original mechanisms as established by law

Consequently, it is expected cheaper financing by some debt issuers, less exposure to systemic risk (caused by fluctuation of economic cycles versus interest rates shocks). Also, it is expected that creditors have higher participation on part of the benefits achieved from this variable payment structure.

#6.5 [DEVELOPMENT OF THE "PROJECT RATING" CONCEPT]

Main financial institutions around the world in general require the so-called corporate warranties to grant loans to companies. This is justified by several reasons;

- Establishing contract relationship that is inherent to the loan (which takes place among two persons and not between a "project" and another person);
- Accepted rating criteria that are part of the training for Economics and Finance professionals:
    - Economic-financial assessment models based on traditional multiple indexes (such as current liquidity, drought, debt coverage index, financial and operation leverage);
    - Usage of default probability calculation models based on stochastic calculation techniques based on the balance sheet assessment and distribution of average profits of the company;
- Need to comply with Basel solvency criteria that are intrinsically connected to current practices and culture of professionals and institutions involved.

In the other hand, when we contextualize the huge need for investing in basic and social infrastructure in Brazil, there is an existing gap between the interest of large corporations - that have robust balance sheets from a credit granting standpoint - and the profile of projects to be executed by the majority of the public sector.

However, as discussed before, it would be desirable that the participation in PPPs were expanded to attract

mid-sized companies, deploying more capital and increasing competition.

Smaller companies do not have the required characteristics to comply with traditional credit granting criteria.

As a result, many companies are naturally excluded from Partner-Public Partnerships, as it is not feasible to make an investment using only resources from shareholders own capital, considering that theoretically every project has an optimal capital structure comprised of third-party capital (debt) and own resources.

Hence the proposal for "project rating" that aims to be an alternative to current criteria for assessing credit granting, based on corporate credits and aiming to overcome the abovementioned gap existing between the lack of robustness in mid-sized company balance sheets faced to credit granting processes by financial institutions.

#6.5.1 [SPECIFIC RISK-BASED MODELS]

In order to carry a risk assessment for a project, it is necessary to quantify the likelihood of different scenarios during the project execution. Macroeconomic changes, adverse physical occurrences, among other events, affect a project's profitability/feasibility.

Thus, instead of the traditional analysis that is based on the robustness that a company would present to face such negative events, considering the supposed financial "health" by applying traditional indicators, models based in specific risks determine mainly which is the joint likelihood distribution for reaching a certain profitability level (or the chances of a default) for a project or company, faced to the evolution of possible different scenarios to importance variables.

In order to best exemplify this proposal, it is possible to think of a PPP for highways.

In such PPP, it is possible, to simplify, to mention two key risk factors that may impact the project profitability directly:

- Risk of overpricing the work due to several events, such as weather, geologic risks and others;
- Macroeconomic risk that may impact in increasing trips of personnel and cargo, due to heating/cooling of the economy.

By considering only these two risks, it is possible to determine a distribution of likelihood of events occurring based on history, by means of a simple analysis of past occurrences frequency.

For instance, by analyzing the GDP across a pre-determined period of time, it is possible to establish pre-fixed ranges of plausible events. Consequently, it is possible to achieve a histogram (or distribution) of such events, in order to allow for a simulation of the occurrence of each event in the future, based on the past. Chart 63 and Chart 64 illustrate such procedure.

Thus, following the example based on Chart 65 of accumulated distribution, obtained through the historical behavior of the Brazilian economy,

it is expected an average growth at 3% to 4% per annum, but with significant likelihood of contraction/stagnation.

The same can be done in relation to original cost of works forecast in the proposal faced to the effective cost in the execution, in order to assess what is the likelihood of a given investment to cost way more or less than forecast, negatively impacting cash flow as per Chart 65 and Chart 66

For instance, in average, as can be seen in Chart 65, related to the accumulated probability distribution, based on history, work costs 16% more than forecast in the project, in average, for highway grants (this is an oversimplification).

Having developed and calculated the respective probability distribution, one only needs to "connect" them to the cash flow, using equations relating the occurrence of such events to the activities performed by the company during the project, such as investment and revenue.

For instance, in terms of toll income, it is possible to think of a function of the type:

$$\Delta R_{t\%} = K_{t\%} + \left(\frac{\overline{K_{\%}}}{\overline{\overline{\Delta PIB}}} \cdot \Delta PIB_{t\%} - \overline{K_{\%}} \right)$$

Where:

$\Delta R_{t\%}$ is the evolution of revenue variation, inflation adjusted, that shall match to the traffic evolution;

$K_{t\%}$ is the expected deterministic evolution on traffic, arising from the traffic evolution study;

$\overline{K_{\%}}$ is the average evolution of traffic along the project;

$\overline{\overline{\Delta PIB}}$ is the average evolution of economy expected along the project, used as basis for projecting the original traffic;

$\Delta PIB_{t\%}$ is the simulation of an adverse growth scenario based on the past history distribution.

As for investments, it is possible to think of a mathematical relation of the type:

Custo = Razão · Valor Previsto

Where:

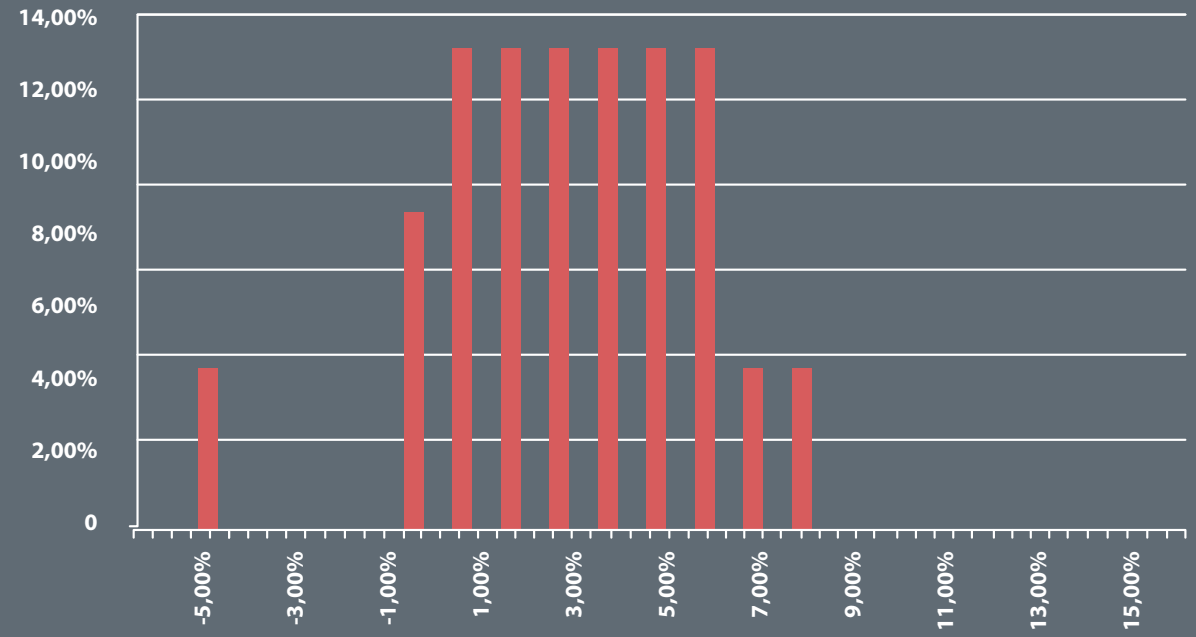
Custo is the final investment cost to be added to the cash flow simulation;

Razão is the efficiency ratio (eventual over cost), simulated according to the specific risk distribution obtained; and

Valor Previsto is the value initially forecast arising by crafting the basic or executive project.

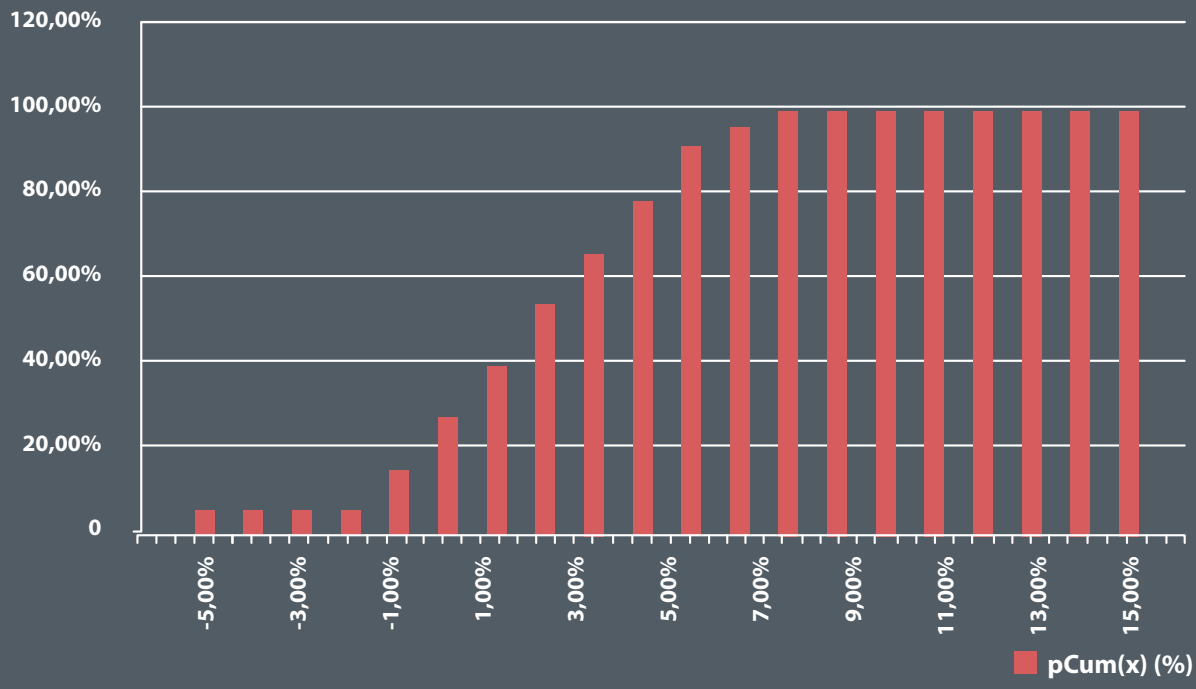
So, considering the simulation of these variables, it is possible to project different scenarios for the project's internal return rate and to assess what is its variability (risk) due to specific risks inherent to the project - work, traffic, and other risks.

CHART 63: DISTRIBUTION OF GDP YEARLY GROWTH



Drafted by GO ASSOCIADOS.

CHART 64: ACCUMULATED DISTRIBUTION OF YEARLY GROWTH (%)



Drafted by GO ASSOCIADOS.

CHART 65: ACCUMULATED LIKELIHOOD (%)

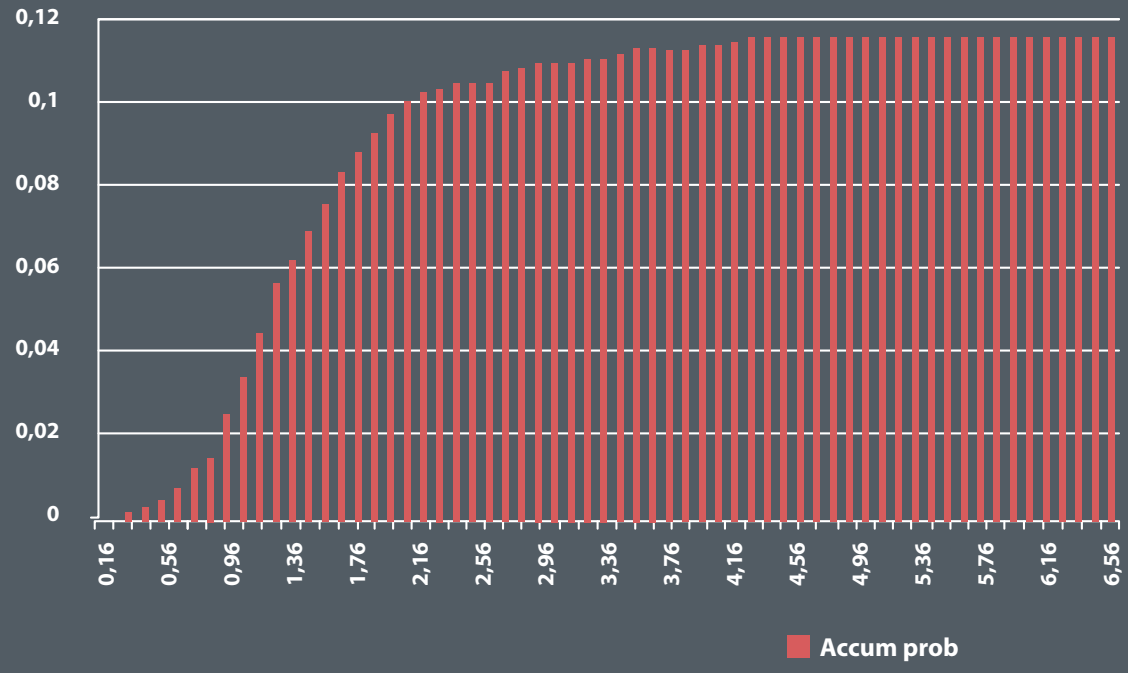


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CHART 66: LIKELIHOOD (%)

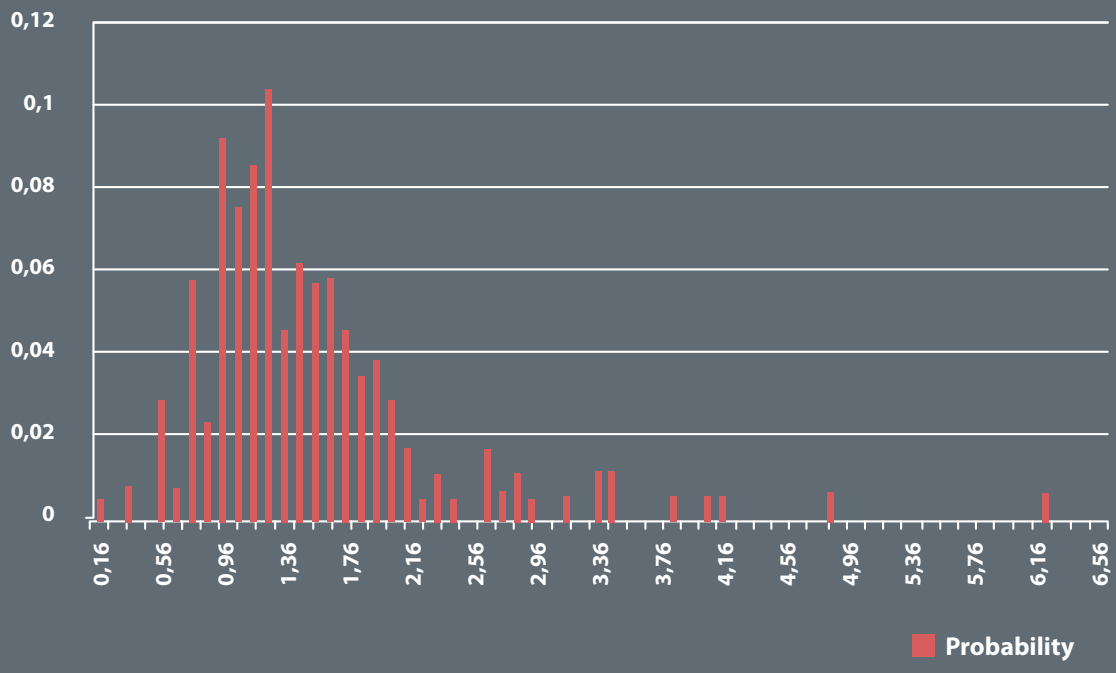

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CHART 67: MONTE-CARLO SIMULATION TECHNIQUE

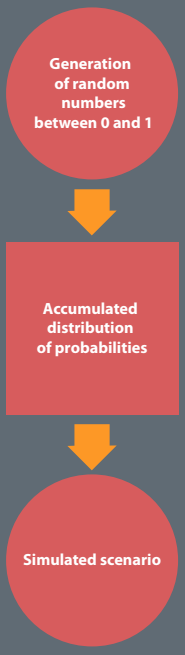

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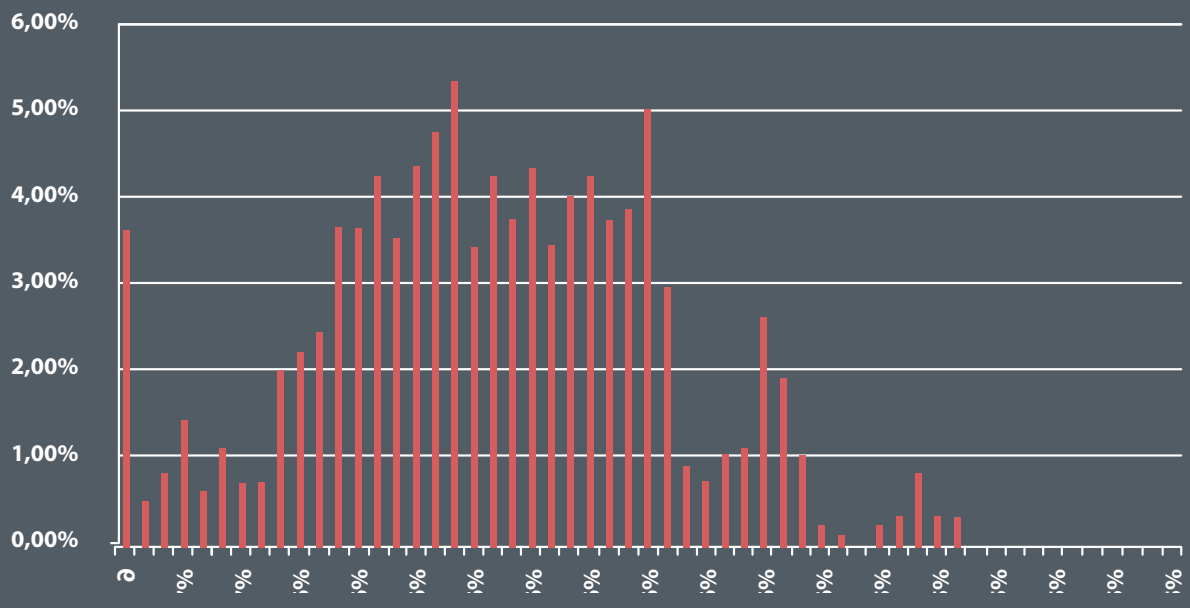
CHART 68: IRR PROBABILITY DISTRIBUTION FOR THE PROJECT



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#6.5.1.1 [SIMULATION BASED IN MONTE CARLO METHODS]

To perform the simulations, in order to generate project's risk scenarios, it suffices to resort to the Monte-Carlo simulation technique (Chart 67{ut3), where by generating random numbers, these are connected to the cumulative probability density function that, by its turn, associates the random numbers to the respective nature of occurrence.

Several easy-to-use software, as electronic spreadsheets and even System Dynamics (such as Insight Maker) are able to execute such computing, in order to generate the respective variations in the cash flow end results, as it can be seen in Sterman (2000).

For instance, in a simple Excel spreadsheet, such operation can be easily done through the functions "aleatórioentre()" and "procv()" so to connect properly the randomly generated number to the simulated scenario.

Having performed these steps, then you can simulate cash flow scenarios many times and analyze the frequency of the variable of your interest, such as the project's Net Present Value, Internal Return Rate and others.

#6.5.1.2 [OBTAINING PROBABILITIES OF SUCCESS AND THE RATING FOR THE PROJECT]

As well as in traditional models, in which some probability/likelihood of failure/default, it is possible to obtain a distribution of probabilities for the Internal Return Rate, where an IRR close to zero indicates a hypothetical default.

Or a technical default can be considered if the project's IRR is below the net risk rate or the risk rate less withdrawal cost, so that there is no economic sense with the agent to go on with the project, given a situation in which the agent's effort will not be remunerated properly.

Thus, for instance, by obtaining a distribution of probabilities for different scenarios as indicated in Chart 68, it is possible to define an area where if the project falls into, a technical default should be considered as the project is no longer paying private capital properly - thus, by adding probability densities in this region, one obtains a "likelihood of default" for the project.

#6.5.1.3 [POSSIBLE DISADVANTAGES FROM USING THIS TYPE OF ASSESSMENT]

One of the main concerns towards this assessment type is that assessing a company as a whole there is a risk diversification, as usually a company holds a project portfolio where the failure of a project may be offset by the success of another.

Thus, by focusing in a single project to calculate a rating it is excluded the possibility to diversify/minimize risk and this, for robust companies in economic and financial terms, this may not be a proper assessment of potential risks for prospecting financing alternatives.

However, this procedure allows for dealing with the problem of excessive focus by financing institutions on corporate warranties and not in the project, which tends to prevent mid-sized companies to get financing for partnerships.

#6.6 [PUBLIC WARRANTY ENHANCEMENT]

The robustness of public warranties is a key point for a PPP. As PPPs are dependent on revenue from the public sector, a new risk factor is introduced into the project - the public sector default. A default by the public sector implies in additional risk for creditors, as there is the risk of credits being met by means of court-ordered debt payments.

In this case, a higher return rate is demanded (if there is no warranty) or warranties are structured upon the contract signed between the private sector and the public partner, in order to equalize risk allocation.

In a country were loan costs are significantly higher than the rest of the world, the best option tends to be structuring public warranties. Thus, both the borrower and the creditor have available resources to ensure the project continuity. This model also requires legal and economic stability for public warranties. This is a relevant concern as infrastructure projects are usually long term, being subjected to changes in several administrations.

Usually, the private partner shall bear their obligations by using own capital and also capital from third-parties, by means of loans. Hence one of the critical points for the possibility of developing Project Finance in Brazil is the effective structuring of public warranties, aiming to ensure revenues and long-term project continuity, such as infrastructure projects.

#6.6.1 [DIFFUSION OF EXISTING PUBLIC WARRANTIES]

Article 8 of the PPP Federal Law provides an example list of possible ways that public warranties can take. Usually such warranties are repeated by state and city PPP laws. It happens that bank loans dynamics, as well as the range of risks involving PPP projects, have been demanding more creative, innovative solutions for warranty mechanisms that are able to remedy eventual defaults by the grantor.

By observing warranty structures tested in PPP projects such as the one for the Tamoios Highway and the public payment warranty used for the Arena Pernambuco and Fonte Nova Arena, there are public warranties that may bring comfort to the lender when granting Project Finance to the private partner. The objective of this topic is to disseminate public warranties mechanisms already used in an economic and legal rationale.

As mentioned earlier, a great deal of cash generation in a PPP traditionally occurs from public resource inputs and counter payments in cash[36], thus, in order to provide best conditions for structuring a project around the Project Finance concept, it is required that warranties are provided to ensure receiving these resources, or at least part of them, in amounts enough to pay interests and to allow for the amortization of debt.

Primeiramente, é necessário dividir as garantias públicas em dois tipos distintos, em conformidade com a natureza da receita a ser garantida: garantia para os aportes e garantia das contraprestações pecuniárias

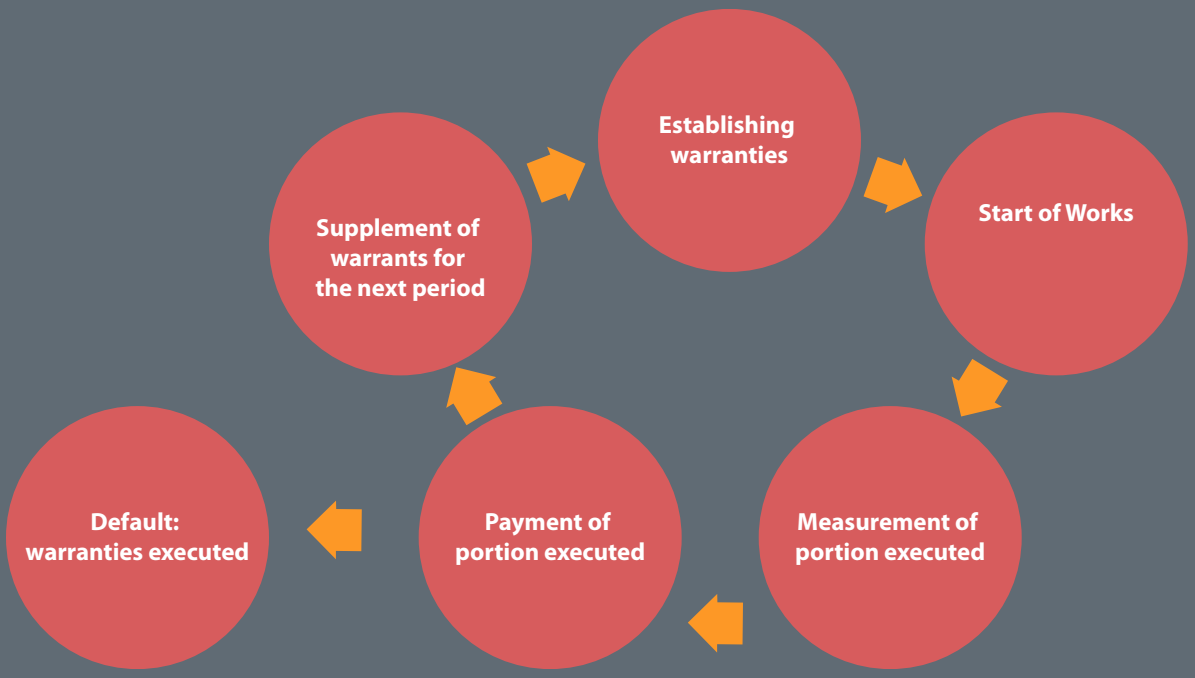
#6.6.1.1 [THE ECONOMIC RATIONALE FOR PUBLIC PAYMENT WARRANTIES]

Approaching warranties from an economic-financial standpoint, it is feasible to structure warranties to inputs where just the stock of capital required for executing the works in that time is reserved. It is considered that the entrepreneur's maximum cash flow exposure in this stage of the project is just expenses incurred by the project's execution.

Having invested that portion of capital and having paid to the private partner the amounts

36 There is still the need to rethink the possibility for public resources to grants, in terms of the need for attracting investments particularly for ordinary grants. As a minimum, the regulation from the Ministry of Cities that forbids using non-onerous resources by the city that grant public services with a consideration.

CHART 69: HOW WARRANT EXECUTION WORKS



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related to the measurements of execution indicators, the entrepreneur can go on with the investment execution and never is exposed to the risk of not receiving that was already spent (executed).

Thus, it is possible to optimize the stock of capital destined to warrant inputs from the public sector, considering that only the cash the entrepreneur has exposed at a certain period of time needs warranties, not all inputs.

If inputs are not paid in that certain period of time, the warranties are executed and the work execution is halted in order to limit the exposure, until the execution warranty is performed by the public partner - and here a suggestion is made to include mechanisms to not encourage the halting of works, such as heavy fines or indemnifications.

Otherwise, the contract shall foresee the need for supplementing the warranties already reserved for the previous execution period, in order to preserve the non exposure of the entrepreneur's cash flow.

Thus, the mechanism shall be as described by Chart 69.

For warrants related to cash counter payments, it is necessary to structure a rationale that is quite different from the inputs, as the project is operational (minimum condition for paying counter payments according to legislation) that, consequently, changes completely the shareholder cash flow exposure.

In the other hand, warranties depend firsthand on the financial leverage degree and financing conditions the entrepreneur chooses in order to maximize return over the project's leveraged cash flow, generating value to the shareholder.

Thus, as starting point, it is recommended to consider the average ratios of own capital and third-party capital for the industry, in order to allow for structuring Project Finance that may be calculated from indicators such as Long Term Debt to Equity Ratio, which can be easily obtained from public data sources like Reuters or Bloomberg.

For instance, using the indicator mentioned above, this is the formula:

$$R_{DE}\,\frac{D}{E}$$

In the other hand, it is known that participations shall add to 100 percent. Thus:

$$W_d + W_e = 1$$

By adopting the following mathematical relations:

$$W_d\,\frac{D}{D+E}$$

and

$$W_e = \frac{E}{D+E}$$

The indicator can be rewritten as:

$$R_{DE} = \frac{D}{E} = \frac{\dfrac{D}{D+E}}{\dfrac{E}{D+E}} = \frac{W_d}{W_e}$$

Thus, from the relation of condition for the sum (weights have to total 1) and the indicator, it is possible to obtain participation weights for every type of capital:

$$R_{DE} = \frac{1-W_e}{W_e} = \frac{W_d}{1-W_d}$$

Consequently, having the average ratio of own capital and third-party capital (debt), one can simulate all other variables that determine the financing conditions, such as effective rate, amortization term, grace, minimum coverage index for servicing debt as required by bondholders/creditors and so on.

By gathering those variables, it is possible to see the minimum level of need to provide warranties required to structure the Project Finance.

Having the financing and the operational planning conditions for the work defined, the warranties should meet the work operation maintenance needs as a minimum, so to provide resources enough to pay:

- Tax over revenue
- Operational costs/expenses
- Operational capital variations
- Expenses with financing amortization
- Expenses with interests

In order to dimension such warranties, first all revenue streams that the project alone is able to generate (i.e., revenues that are not dependant on the public partner) shall be computed and then discount the cash needs above, as per Chart 70.

Consequently, warrants are only necessary in periods when the total need for resources is above PPP independent cash generation, as per Chart 71

CHART 70: HOW TO CALCULATE THE WARRANT NEEDS

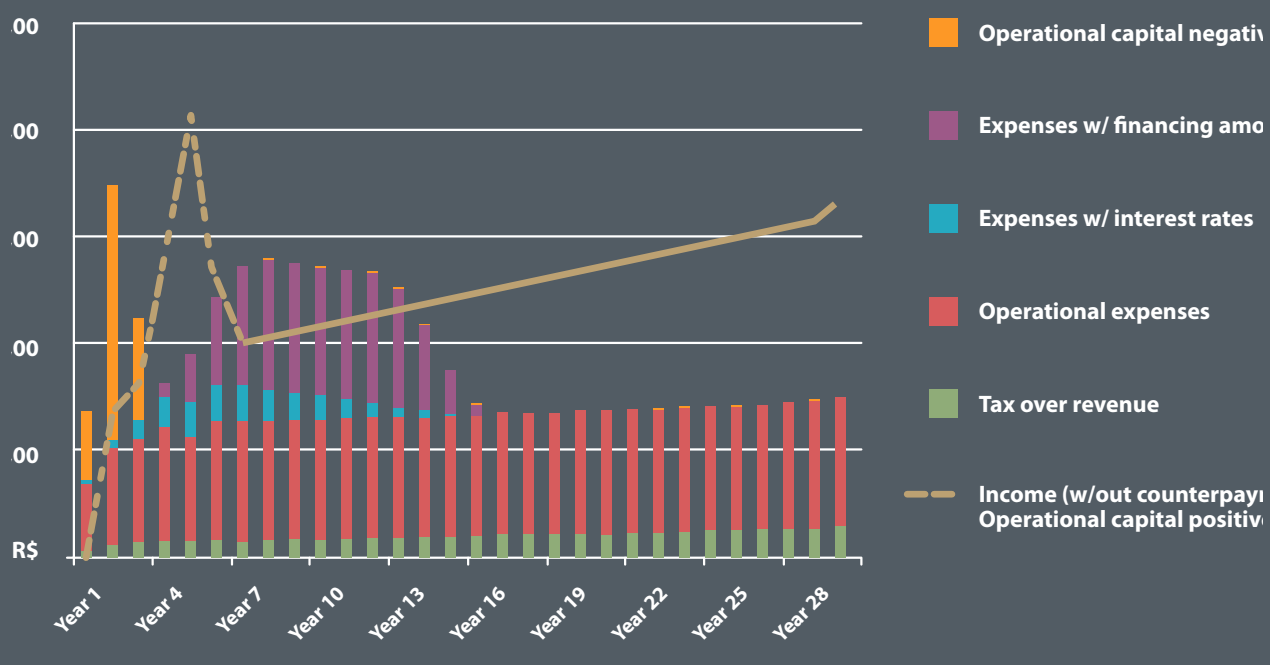

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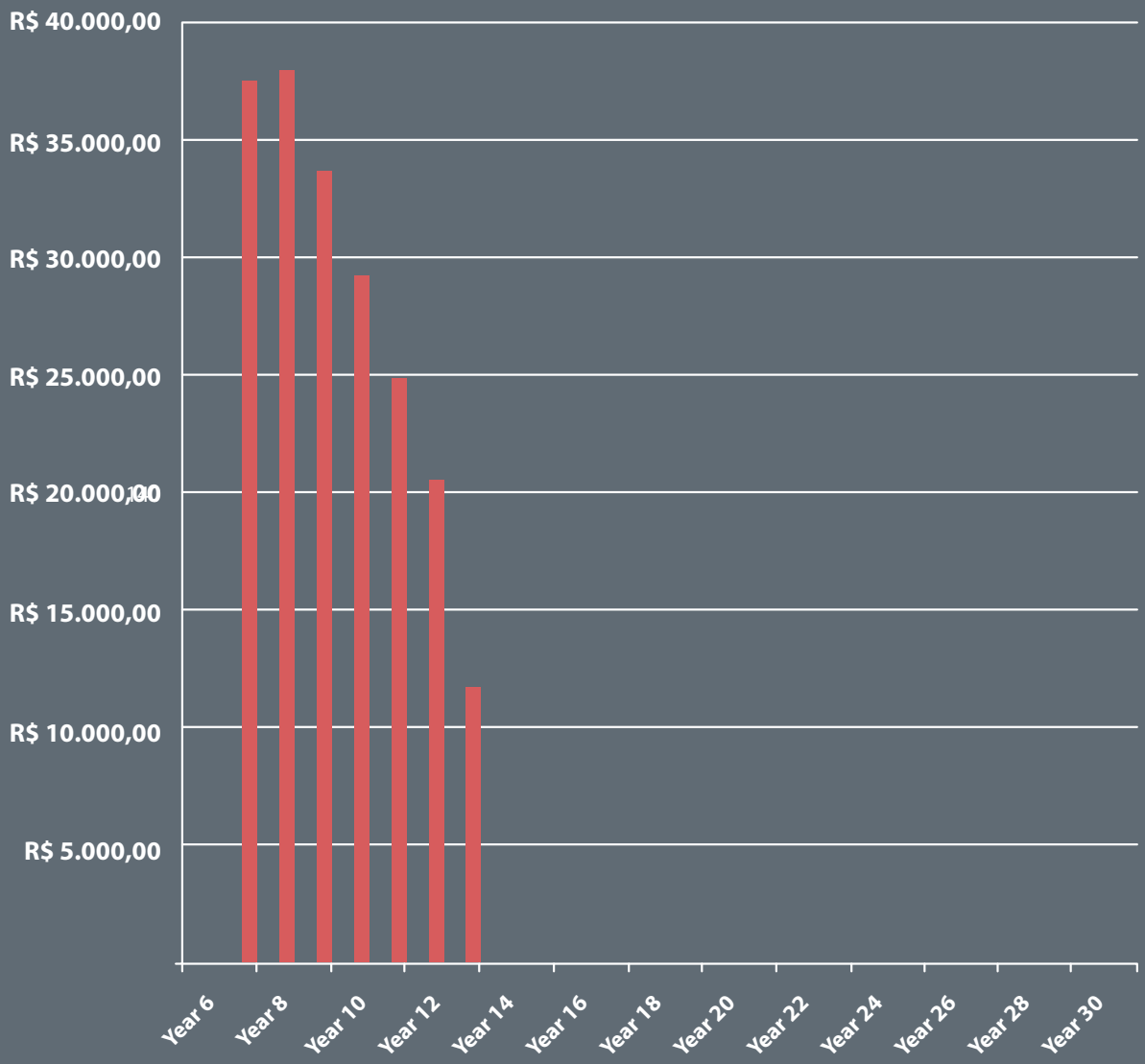
CHART 71: NEED FOR WARRANTIES



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#6.6.1.2 [CASES OF STRUCTURING PUBLIC WARRANTIES]

The State of São Paulo founded the Companhia Paulista de Parcerias (CPP), a state-owned company controlled the state as per State Law # 11.688 dated May 19, 2004.

According to the company's website:

"To perform our institutional mission, CPP is authorized to perform Public-Private Partnerships, deliver real or third-party warrants, issue bonds, and join the capital of other companies as well as to manage goods and assets as destined by the Government".

Usually, CPP warrants the amount that is equal to six months of counter payments by means of alienation of investment fund quotas, mainly to projects not of Project Finance type, where capital is not intensively used or do not have large cash exposure.

Also, CPP does not have resources enough to form the capital stock equal to the minimum required to ensure financial health of PPP projects. The market demands counter payment structured in a flow that is able to replenish the stock inputted by CPP in order to make sure the State will not default even if the warranties offered are executed, considering the growing number of projects structured as Project Finance due to reasons mentioned in this document.

Thus, a series of alternatives to the traditional warrant structure is being created, by considering the State budgetary restrictions in inputting new resources to the CPP (not only in the State of São Paulo but in most of other states due to the perspective of fiscal adjustment required to reach primary superavit goals).

- Discussions related to the Nova Tamoios PPP projects for delivering public operation and maintenance services for the Tamoios Highway summarize a great deal of these innovations. Some alternatives were considered towards warranties:

- Usage of DER fixed grants

DER should receive around R$ 1.3 billion in seven years, by the time when studies were drafted, as a payment for fixed grants from other grantees. In a solution of this type, the money shall be deposited in a trustee account, becoming available to the public sector only upon confirmation that the input was made.Alienação do Excedente de Controle da CESP

- CESP shares alienation

CESP shares as warrant against State obligations, without compromising State's control of the company that would be executed in case of default. Thus, for modeling the warrant execution, the total of shares under possession of the State, their respective prices and potential loss incurred by the massive sale of the share or the effective control transfer to the private partner in case of interest.

- Accumulation of SABESP dividends for formation of stock

In this case, resources would be deposited in a trustee account and would be transferred to the State after making the inputs. These resources would accrue until they reach the maximum amount of the input and then supplemented with other sources in order to ensure payment for the works. Notwithstanding, in this case specially, if the flow is reasonably stable - inherent to the delivery of sanitation services, the yearly payment would be enough to work as a counter flow for the warranties for cash counter payments in the operational phase.

- Using fines applied by the State

Firstly, it was considered to use the flow of fines applied by DER to warrant part of the counter payment related to expenses with legal suitability of application potential. However, due to the amount obtained from fines, it was also thought in adopting an accumulation regime similar to the one proposed for SABESP dividends.

- Structuring funds upon active debt

The State of São Paulo is frequently structuring Special Funds on Active Debts under the form of FIDCs, so to anticipate future receivables and allowing for the formation of stock of capital that is applied to a yield whose risk is systemic (such as Federal Government debt bonds), can be structured so that the amount invested can generate payments enough for covering large default periods, such as three or four years, which shall suffice for solving conflicts in an arbitral tribunal or awaiting for a legal decision.

- Real Estate selling

To form a structure comprising property not in use by the State, in charge of following the possibility of their execution and maintenance, in order to ensure their ownership, so that in case of default, it is responsible for conducting auctions and always keeping an immediate availability level in line with the portfolio of bid projects.

Finally, the following warranties for inputs were structured. The first will be delivered by means of financing and supplemented with the use of resources from the State's budget. While the financing is not granted, the contract determines the constitution of own warranties involving pledge or fiduciary grant of credit rights from 10 current highway grant contracts in the State of São Paulo. If it is not sufficient, then there is a pledge on investment fund quotas hold by ARTESP totaling R$ 170,000,000.00.

Counter payment warranties were structured by means of guarantees from CPP for the five initial counter payments. It was also structured a system of subsidiary warranties to the main warrant. By its turn, the pledge is warranted by another pledge of part of quotas from the BB CPP Projetos fund, of which CPP is the sole quota holder. If the main warrant is not replenished, the system has three subsidiary warrants that may be executed later, as follows: (i) pledge or fiduciary grant over revenue from fines received by DER/SP; (ii) pledge over ARTESP Investment Fund quotas; and (iii) pledge over other liquid, available assets hold by the State of São Paulo, valued at R$ 150 million. It is worth noting that these warranties are not structured, as the private partner bid R$ 1.00 for the counter payment amount

In addition to the innovations on the structure, there are more sources of feasible revenue for structuring public warranties. Using alternative sources of revenue can solve the usual problem of states lack of funds. PPP projects for Pernambuco Arena in Recife (PE) and Fonte Nova Arena in Salvador are good examples of this. Resources from the State Participation Fund were used, as well as public credits from active debt, shares and dividends from state-owned companies and oil royalties.

This means that there are structured and sources of alternative revenue for structuring public warranties. It is just that the state possibilities match market player's expectations.

#6.6.2 [CREATING COUNTER WARRANTIES MECHANISMS TO INCREASE LEGAL SECURITY TO THE PUBLIC-PRIVATE PARTNERSHIP WARRANTY FUND]

When the discussion started about the legislative aspect of public-private partnerships, a key issue raised by the private sector was the payment warrant. For sponsored and administrative grants, part of the whole remuneration for the private partner comes from the government. There were concerns with the default risk from the grantor, since the private partner would be forced to seek for a legal solution and be submitted to court-ordered debt payments in case of counter payment default.

Aiming to mitigate the credit risk, state-owned companies or funds to warrant public-private partnerships were created to warrant payment obligations by the grantee. Overall, despite not being subjected to court-ordered debt payments, these funds and companies improve a project rating. It turns out that some states and many cities do not have assets that are liquid enough to pay-in the capital of a fund or company to warrant public-private partnerships. In this case, a liquid warrant these government levels could provide is linking tax income or resources transferred from the Federal Administration.

However, article 167, IV, of the Federal Constitution[37] prohibits linking revenue from taxes to entities or funds so that states and cities cannot provide their tax revenue as warrant to private partners. However, article 167, paragraph 4, authorizes the linkage of these revenues to the Federal Administration, aiming to provide warranties or counter warranties to pay debts with the Federal Administration.

On what concerns to the linkage of funds transferred from the Federal Administration to states and cities, there is no constraints to use them as warrant to private partners in PPP projects. However, this is not a legal consensus and some private and state-owned banks have not accepted these resources as warrant for loans taken by private companies in PPP projects.

> In this context, aiming to provide suitable payment warranties by states and cities for forming public-private partnerships, Law 12.766/2012 contemplated some mechanisms proposed by Law Proposal 2.892/2011, authorizing the **Public-Private Partnership Warrant Fund to deliver warrant for the payment of cash obligations for public federal, district, state or city partners for public-private partnerships.** Although there are still some limitations, this change helps to reduce the public sector risk of default and thus, the risk premium demanded by the private sector.

"The Federal Administration, its special funds, entities, public foundations and companies are authorized to participate, at a global limit of R$ 6,000,000,000.00 (six billion reais) of Public-Private Partnership Warranty Funds,

37 IV - linking tax revenue to entity, fund or company, exception made to sharing revenue from taxes described in articles 158 and 159, to destination of resources for public health actions and services, for maintaining and development education and for performing tax administration duties, as determined respectively by articles 198, § 2º, 212 and 37, XXII, and the delivery of warranties to credit operations by anticipation of revenue, determined in article 165, § 8º, as well as what is determined by § 4º of this article

that aim to provide payment warrant of cash obligations on behalf of public federal, district, state or city partners for the partnerships hereby covered". (Article 16, Law 12.766/12).

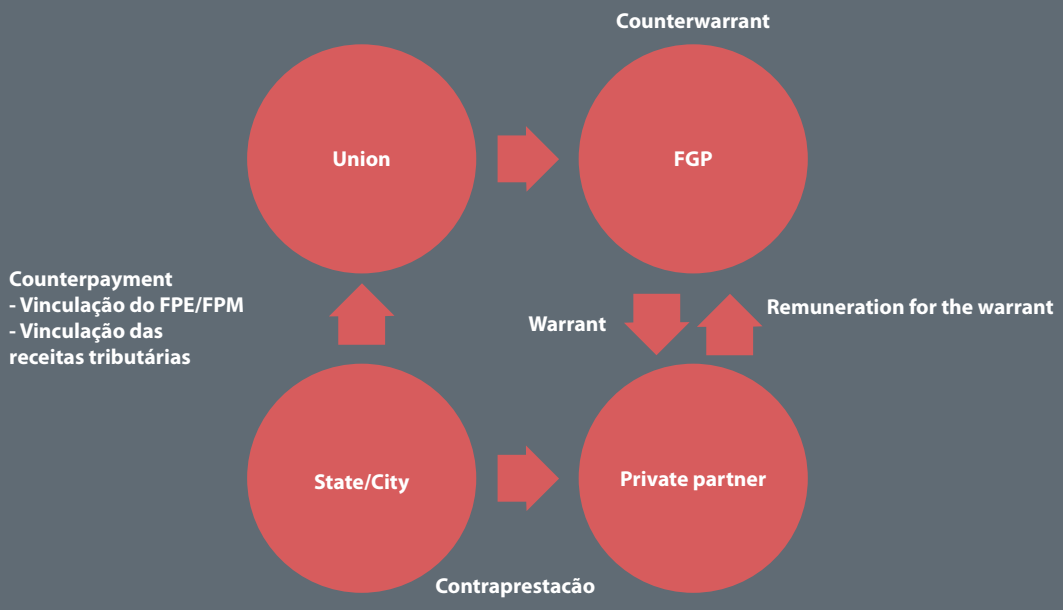
However, the legislation is not clear if states and cities shall be quota holders to benefit from the warranties delivered by the FGP, nor if they shall pay-in assets to the FGP. Furthermore, Law 12.766/2012 does not foresee any type of compensation or counter warrant to be delivered by these government instances to the Warranty Fund. In short, this situation means that the PPP Warrant Fund would be warranting state and city debts without demanding counter warrants.

This mechanism can violate §1 of article 40 of the Fiscal Responsibility Law (Supplemental Law # 101/00)[38]. Furthermore, legal insecurity caused by the current operation of the PPP Warranty Fund generates instability to the new warrant mechanism that is proposed, reducing its efficacy.

According to this structure, FGP would warrant the private partner hired for PPPs conducted by states and cities. The Federal Administration would provide counter warranties to the Warranty Fund and would obtain another counter warrant from the state or city government, by linking tax revenues. This mechanism would allow the private partner to have a liquid warrant[38] and the state or city to provide high quality counter warranties to the Federal Administration that would be easy to execute.

38 This is because assets paid-in by Federal Government to the fund are quite liquid.

CHART 72: ALTERNATIVES FOR STRUCTURING WARRANTIES IN PUBLIC-PRIVATE PARTNERSHIPS



Elaboração própria

#6.6.3 [CREATION OF STATE-OWNED WARRANT COMPANIES]

This proposal aims to encourage the creation of state-owned warrant companies especially at the city level. The city-owned warranty company, in the model here proposed[40] would provide warranties to PPPs carried out in cities. It would provide warrants to obligations borne by city grantors, increasing security to the private partner for the payment of counter payments. Also, the company could provide counter warranties to loans obtained by the private sector from financial institutions. These changes, by reducing risks incurred by the private sector, also help to decrease risk premiums and financing costs.

Obtaining warrants from obligations incurred in PPPs from other states is starting to gain traction, such as examples as the federal PPP Warranty Fund and Large Project Warranty Fund, as well as the Companhia Paulista de Parcerias from São Paulo.

In the federal context, the PPP Warranty Fund, as discussed earlier, can deliver warranties for payment of cash obligations incurred by federal, district, state or city public partners for PPPs. Law 12.712/2012, that created the FGIE[41] also does not specify the operational ranges of the fund, allowing it to perform in all infrastructure projects in the country, covering multiple sectors.

The same range applies to CPP. State Law # 11.688/2004 that instituted the public-private partnership in the State of São Paulo and authorized the creation of CPP, says in article 15, VI, that the CPP can deliver real warranties, third-party warranties and to hire insurance to pursue its social goals. The meaning is wide, and one can infer that warranties may be delivered to other states.

As for a supposed prohibition imposed by Supplemental Law # 100/2001 (article 40, §6) to deliver warranties from a state-owned company to another state, this does not apply to the model of state-owned company warranting obligations for a public-private partnership here proposed.

Irrespective of the divergence whether the term "credit operation" applies or not to PPPs, as in the caput of article 40 of Supplemental Law 100/2001, the provision of warranties in PPP by a state-owned company to another state does not fall into this article, as line b of subparagraph I of article 1 of the Fiscal Responsibility Law, by determining that the applicability is subjective, covers solely funds, entities, foundations and state-owned companies. The Fiscal Responsibility Law excluded non-dependant state-owned companies.

Another point is that paragraph 6 of article 40 of the Law prevents Indirect Administration entities to deliver warranties with no criteria to other states in disregard to the limits established by this law. In the model proposed, it will be a company founded for the purpose to deliver warranties in PPP to other states where, supplementing the reasons explained, it is not possible to do so as it is public policy for infrastructure development.

40 Other issues related to the effective proposition of this model shall be analyzed, such as legislative needs.

41 The FGIE is expected, according to its chapter, to supplement the insurance and the reinsurance markets, providing additional capacity to take unabsorbed risks in part or wholly by the insurance market.

#6.7 [DISSEMINATION OF STEP-IN RIGHTS OPERATION]

The term "step-in right" allows for the right to remove or replace someone from a given role. If the SPV defaults on a loan, the step-in right gives the lender the right to take direct control of the SPV, receiving voting rights in the company's shareholders meeting. The lender can dismiss the management and elect members of their trust.

The goal is to restore payments or save the company from a financial crisis, in order to protect the credit for the lender.

The possibility of taking control of the company by the lender is important and directly related to the project finance-based financing. If the service granted is not generating the expected operational revenues, the lender loses the warrant linked to receivables and the debtor misses the payment dates for the financing installments. The right, thus, works as a warrant to lenders against the risk of SPV inefficiency or poor management.

Both the PPP Law as the Grant Law allows step--in rights. The issue then would be how such right would be applied in the real world.

It is important to mention that the article 27 of the Grant Law is being discussed by the Federal Supreme Court as whether it is constitutional, since it does not require a tender for altering the control of the company[42]. The argument is based in the article 175 of the Constitution that prevents transferring the grant without tender. About this issue, Maurício Ribeiro Portugal[43] says that the control transfer does not imply in another company taking the service. In other words, the contract is not changed, so another tender would not be required as the grantee remains the same.

According to Aragão[44], this instrument is constitutional but making it happen in a given contract or tender's notice may not, if it is allowed a truly forced contract take over from the grantee that won the tender to a lending institution that did not take part in the tender, which would be a violation of the constitutional rule of tenders, but there will not be constitutional obstacles if the contract admits the "intervention" as per article 5, §2, I of Law 11.079/04, aiming to preserve the contract's own survival and the continuity of delivery of the public service object of the same contract, is only instrumental to the company's financial health as short possible to, as soon as possible, return the control to the original grantee or transfer it to another company, even to other tender participants, in terms applicable to Law 8.666/93 and Law 8.987/95, inclusive of the article 27 of the latter, as established by article 9, paragraph 1 of Law 11.079/04".

From a contract standpoint, step-in rights are usually implemented by granting the pledge over the shares of the lending company to the lender, along with the conditional benefits over the pled-

42 For Luiz Borges Xavier, this is one of the greatest issues project finance faces in Brazil: A key issue for applying the fundamentals of a project finance in the infrastructure sector in Brazil, especially for public services grants, is the impossibility of creditors (banks, insurers, suppliers and so on) to take over the completion of implementation or the project's operation. Under the Brazilian law for granting public services, third parties taking over a project may be understood (even legally) as a fraud against the tender process for that grant, even if pursuing the interests of the public. (Project Finance... p. 250)

43 RIBEIRO, Maurício Portugal. Op. Cit., p. 163-164.

44 ARAGÃO, Alexandre Santos de. Public-private partnerships - PPP - in the Brazilian positive law. Revista de Direito Administrativo n. 240, Rio de Janeiro, April/June. 2005. p.132

ged shares, i.e., benefits subjected to an on-hold condition - which is the company's default against the lender, followed by a lender's notification about the decision of applying such mechanism.

In this regard, step-in rights might be argued as it is forbidden for the lender to take control of the warranty object if the debt is not paid in time.

It is worth mentioning that in Brazilian Law, the creditor must dispose the warrant object - like the company shares - to a third party and then use the product of such disposal to amortize the debt, returning any exceeding amount. This means that to the step-in follows the step-out.

In order to prevent such violation, taking direct control over the company by exercising the share's own political rights shall be temporary, with the limited goal to prepare the company for their share disposal. Furthermore, if the default is solved during the exercise of the step-in, the lender would have to return the shares to the original shareholders, so there would not legal basis for executing the warranty without outstanding debt to justify it. However, it should be noted that the law have not determined a maximum term during which the creditor can keep assets given as warrant in their custody to prepare for the debtor's execution.

The discussion on step-in rights is being mitigated in part by changes to the legislation. In January 2015, Law 11.079/04 was passed, bringing criteria for implementing step-in rights, as below:

Art. 5 Public-private partnerships contracts shall meet article 23 of Law # 8,987 dated February 13, 1995, and shall also foresee: (...)

§ 2 Additionally, contracts can also estipulate:

I - the requirements and conditions in which the public partner will authorize transfer of control or temporary management of the special purpose vehicle to lenders and warrantors with which there is no direct partnership, aiming to promote the company's financial restructuring and to ensure the continuity of service delivery, being exempt for this effect from what is established in line I of sole paragraph of article 27 of Law # 8.987 dated February 13, 1995; (Wording provided by Law # 13.097 of 2015)

II - the possibility of issuing commitments in behalf of project lenders for the public sector's cash obligations;

III - the legitimacy of project lenders to receive indemnifications by early termination of the contract, as well as payments made by state-owned funds and companies warranting public-private partnerships.

Article 5-A. For the effects of line I of § 2 of article 5, it is considered: (Included by Law #13.097, of 2015)

I - the control of the special purpose vehicle to a resoluble property of shares or quota by their lenders and warrantors that comply with article 116 of Law # 6.404 dated December 15, 1976; (Included by Law # 13.097 of 2015)

II - The temporary management of the special purpose vehicle by lenders and warrantors when, without transferring shares or quotas, the following powers are granted: (Included by Law # 13.097, of 2015)

a) To indicate the Board members to be elected by the shareholders for companies governed by Law 6.404, dated December 15, 1976; or managers to be elected by quota holders for all other companies; (Included by Law # 13.097, of 2015)

b) To indicate the members for the Fiscal Council to be elected by shareholders or controlling quota holders in a General Meeting; (Included by Law # 13.097, of 2015)

c) to exercise veto rights over any proposal submitted to the grantee's shareholders or quota holders that represent, or may represent, losses as per the purposes stipulated in the caput of this article; (**Included by Law # 13.097, of 2015)**

d) other required powers to achieve purposes established by the caput of this article; **(Included by Law # 13.097, of 2015)**

§ 1° Paragraph 1 The temporary management authorized by the grantor will not bear responsibility to lenders and warrantors for tax, payables, fines, sanctions, obligations or commitments to third parties, including the grantor or their employees. (Included by Law # 13.097 of 2015)

§ Paragraph 2 The Grantor will decide upon the period for the temporary management. (Included by Law 13.097 of 2015)

Another alternative to the flexibility would be an intensive use of the qualified sub hiring instrument that would demand only the submission of certificates of qualification for companies that will be sub hired by the winning consortium. Thus, only the qualifiers related to the consortium operational capacity are kept as minimum requirements during the contract, which would ease an eventual control transfer.

Thus, it becomes important to better specify conditions for an eventual control transfer to lenders as established in the tender's notice, and here we suggest explaining the solution for the PPP operator.

However, it is worth noting that there are cases in which is quite difficult for an eventual entrepreneur to take over an operation with a low return rate, caused by the difference of economic contexts between the original decision making for the investment (in the tender) and in an eventual bankruptcy.

For instance, in a situation where the minimum attractiveness rate is dramatically higher than in the period of the tender, eventual operators would not be encouraged to take over the obligations of the previous company. Thus, it is required to create an offset mechanism between the new operator and the lender, such that, for the rational exercise of the control, the return rate offered shall be equal to the weighted average capital cost of the industry.

As a solution for this problem, the lender could conduct a reverse auction for the lower premium risk over an eventual obligation for the operation or the demand for a previous submission of a obligation commitment letter by a third-party, where eventual additional costs are borne by the lender, so to mitigate their own default risk, incurring the natural cost for insuring the operation.

#6.8 [PARTICIPATION OF STATE-OWNED BANKS AS PROJECT'S GUARANTOR]

Finally, an alternative for consideration that is in line with the change in the BNDES role is the possibility of state-owned banks, such as a BNDES and Caixa, to function was guarantors of grantee's obligations for lenders or the capital markets. These banks would move from direct lenders to guarantors.

#7 [CONCLUSION: RECOMMENDATION FOR AUTHORITIES IN CHARGE]

#7 [CONCLUSION: RECOMMENDATION FOR AUTHORITIES IN CHARGE]

The goal of this section is to summarize the main findings of this study.

PPP are critical for the infrastructure leap and to improve public works. However, there is a structural difficulty in financing infrastructure, causing a lot of restraints over government's financing lines and the insufficient development of the private credit market.

When the investment financing pattern in Brazil is analyzed, it is clear that local industry finances their investments mainly by retaining profits and loans from BNDES. Such situation is partly due to the lack of private credit, as existing loans are usually not so long (among 5 and 6 years) and indexed to interbank deposits.

The international experience shows that PPPs and grants are important development mechanisms for the United Kingdom, Australia and Chile. In Brazil, following a slow period of PPP development between 2004 and 2010, the last five years saw a truly silent revolution in municipal PPP and grants, namely in states like Minas Gerais, São Paulo and Bahia.

In order to let this process to continue and expand to face investment needs, it would be critical to encourage the participation of mid-sized companies. However, there are several barriers to the entry of smaller companies in public-private partnerships (PPP) and grants.

Such barriers appear at the many steps for formatting a partnership or grant: project conception, legal structure drafting, recurring funding alternatives surveying and public warranty delivery. All these steps pose significant barriers and competitive asymmetries to mid-sized companies.

Considering the main problems found, a list of changes was compiled so to attract smaller companies to the development of partnership and grant projects. The measures recommended are organized around six overall goals:

i. To ensure good projects;

ii. To decrease transaction costs and improve transparency to the process in the benefit of all companies, mid-sized ones in particular;

iii. To reinforce the legal framework and to create mechanisms to increase competition;

iv. To relieve the issue of warranties, namely at a city level;

v. To bring new resources especially in a context where traditional credits lines are exhausted; and

vi. To provide security for the continuity of services.

It is highlighted among such objectives, the recommendations to relieve the issue of warranties and to bring new resources. In short, the success of the partnership model will depend on new money and the warranties. The next subsections summarize the key proposals.

#7.1 [PROPOSALS TO ENSURE GOOD PROJECTS]

In order to ensure good projects, it is necessary to invest in the creation of structuring companies and to facilitate project modeling.

i. **To encourage the creation of companies to structure projects** with regional operation, focusing on qualifying and supporting cities.

Cities are a key factor for PPP and grants to smaller companies, as shown in previous sections, they have increasingly important role. However, most cities are constrained by human and material resources. The creation of a project structuring company focusing the region and the city tends to reduce bottlenecks and to create consistent PPP and grant projects.

ii. It is worth noting that this process generates a virtuous circle. The more projects are well structured and molded to a determined metrics, such as the toolkit that will be described later, the faster and consistent analyses by lenders will be. This shortens the formatting time of financing.

iii. Changes to legislation so to **simplify the hiring of experts for drafting projects, particularly PPPs, according to the hiring process by the World Bank.**

This proposal focuses in easing the hiring of consultants, which now, due to the Tender Law, many times delays the period of formatting of projects or even prevents the hiring of experts.

#7.2 [PROPOSALS TO REDUCE TRANSACTION COSTS AND GRANT TRANSPARENCY TO THE PROCESS]

Proposals to reduce transaction costs and grant transparency to the process are universal; bring benefits to all companies and particularly to mid-sized companies.

iii. To draft a set of tools as manual, standard forms for interest declaration and a library of cases and metrics used by authorities to simplify and ensure transparency to the process (toolkit).

In the international experience, this effort is often called as toolkit. The State of São Paulo is currently creating a toolkit. In Minas Gerais, there is a manual being drafted based on best international practices. A toolkit may be important to assess risk parameters by banks when granting loans to these projects and to expedite the project analysis by the public sector, namely state-owned lenders. The delay many times imply in bridge loans, which costs directly impact the project's profitability.

#7.3 [PROPOSALS TO REINFORCE THE LEGAL FRAMEWORK AND TO CREATE MECHANISMS TO INCREASE COMPETITION]

This topic proposes an improvement on formatting projects, aiming to allow for the entry of new players.

iv. Clear legislation signals to **dimension the qualification requirements according to the project's size.**

This proposal would be equal to replicate paragraph 1 of article 23 of Law 8.666/93 to the PPP Law, establishing execution of works and services and the purchases of goods. At each work, service or purchase phase, or set of phases, a different tender has to be made preserving the related model for executing the object in the tender.

v. Respected scale and scope savings, the project size shall be established so to allow for the participation of smaller companies, **by modularizing and accepting combined technical and economic-financial qualifications;**

vi. **To format the tender in order to expand the number of bidders** and to maximize competition, weighting on scale and scope savings; and

vii. **To review and enhance the calculation methodology for the Internal Return Rate** of PPP projects.

The internal return rate is a function of the set of assumptions made in the mathematical/statistical model used to estimate it, such as more relevant risks. According to the Technical Note 01/2013 from the State of São Paulo Transportation Regulation Agency (ARTESP), adding new risk factors to the Internal Return Rates changes the result significantly, from 4% real per annum if using the traditional Capital Asset Pricing Model (CAPM) up to 11.56% p.a., considering several economic-financial multiples that characterize the risks companies take in their operation.

viii. **Adjust the project risk matrix to the size of the company and its respective securitization** costs.

Usually, mid-sized companies have an additional securitization cost due to not performing this operation in a regular basis and because their project pipeline is less diversified than those of larger companies, incurring in higher risks for the creditor. Thus, it is necessary to redistribute risks, considering such expenses inherent to the company's size and the project characteristics. In order words, it is proposed that the public partner takes other risks.

#7.4 [PROPOSALS TO RELIEVE THE ISSUE OF WARRANTIES, NAMELY AT A CITY LEVEL]

As for public warranties, that are critical to PPPs and to make project finance models feasible, the following changes are suggested:

ix. **The creation of state warranting companies** to provide warranties to city PPPs;;

x. **Change the federal warranting fund to provide warranties in state and city PPPs** conditioned to the submission of counter warranties by the beneficiaries; and

xi. **Diffusion of public warrant models** to deliver robust project finance structures, such as the usage of public receivables flow by an escrow account in a trustee bank or the creation of contract provisions related to the rights over liquid assets owned by the public sector.

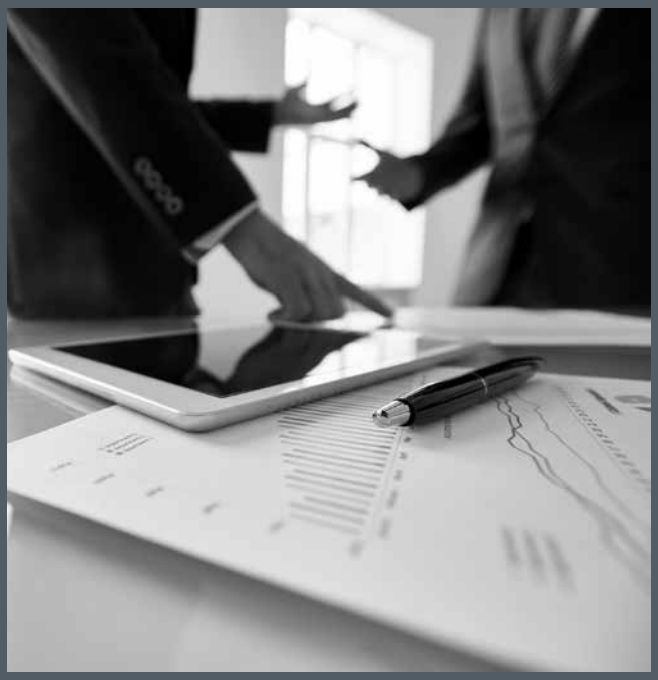
#7.5 [PROPOSALS TO BRING NEW RESOURCES]

In order to bring new resources especially in a context where traditional credits lines are exhausted, it is proposed as follows:

xii. **To increase financing resources to PPPs and Grants by using resources from the Social Insurance Own Regimes**, in order to align the need for reaching long term actuarial goals by eliminating wild variations in the lending rates that investors pay when issuing private debt bonds;

xiii. **More incentives for issuing infrastructure-related debt bonds,** considering that these are still strongly related to traditional benchmark rates that fluctuate according to real economic cycles and price levels (inflation); and

xiv. The creation of **mechanisms to rate projects**, based on a specific risk methodology in order to allow for the calculation of the likelihood of default only for the project. This would allow for replacing the traditional economic-financial analysis of the companies controlling the SPV, making credit easier from private banks.



#7.6 [TO PROVIDE SECURITY FOR THE CONTINUITY OF SERVICES]

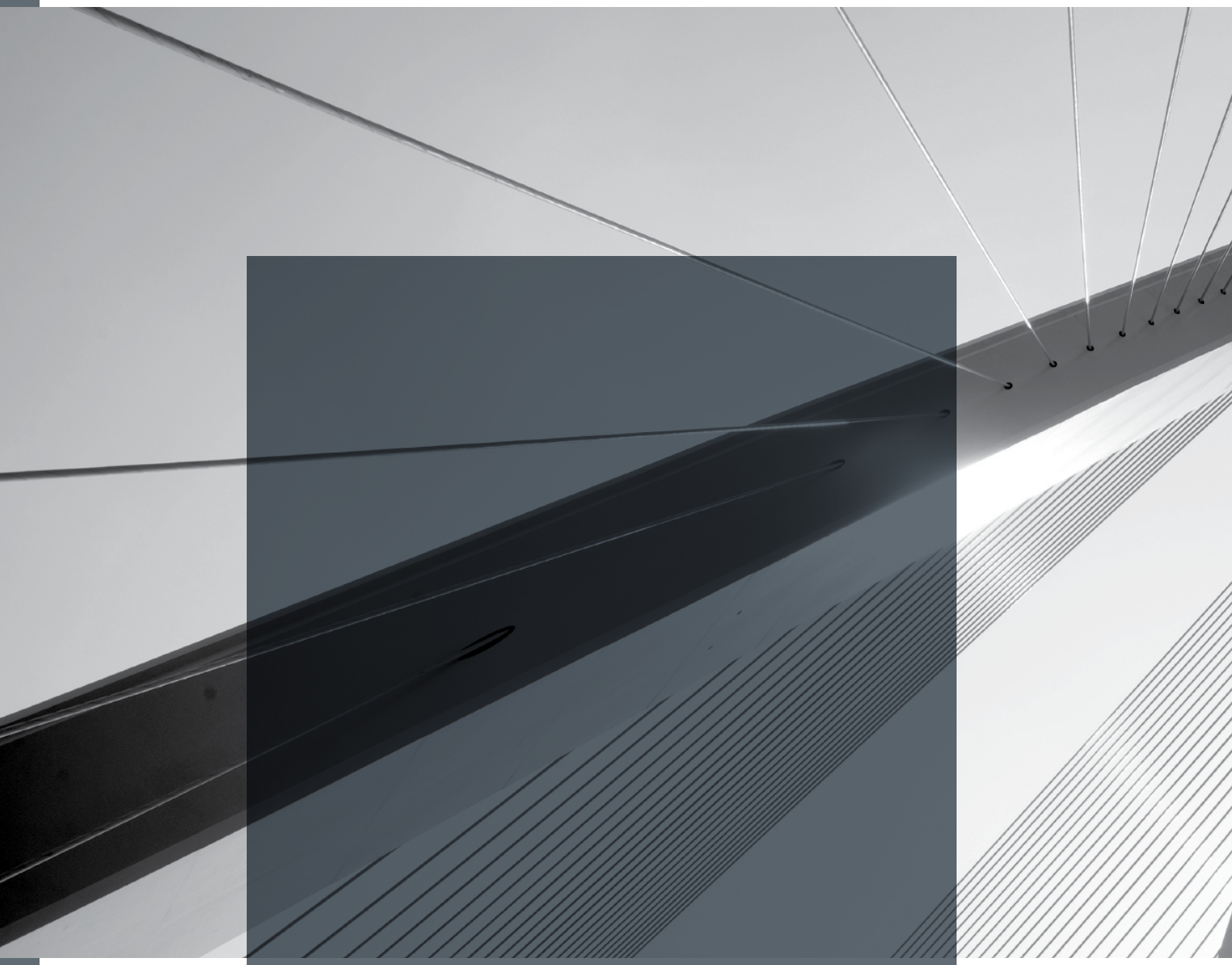
To ensure the continuity of services, the following proposals are suggested:

xv. **Adjust of step-in rights** to operational needs for the ongoing delivery of services, such as recent changes to the PPP Law;

xvi. **The creation of a legal framework for the technical step-in rights allowing that a grantee can take over technical responsibilities of another grantee that is not able to meet contract obligations, in order to prevent the project from being halted; and**

xvii. Development of toe role for state-owned banks such as **BNDES and Caixa Econômica Federal as guarantors**, that would be activated only in case of default, in order to optimize the few resources available in the new fiscal reality of Brazil.

These proposals aim to create a favorable environment for developing PPPs and grants for smaller companies. Such institutional change requires changes to the legislation and operation, but also (and perhaps more importantly), to the culture.



#APPENDIX

#APPENDIX I [PROPOSAL FOR CHANGING THE PPP LAW]

Law # , of

This changes Law # 11.079, dated December 30, 2004.

The President of the Republic. I let know that the National Congress decrees and I sanction the Law below:

Article 1. Law # 11.079, dated December 30, 2004, is in effect with the following changes:

Article [...] - Works, services and purchases made by the Public Administration will be divided into how many installments are proved to be technically and economically feasible, proceeding to a tender aiming to best use of resources available in the market in to increase competitiveness with no loss of scale savings.

Article [] - Exception made to exemption of tender as established by Law 8.666/03, contracts for the delivery of specialized professional technical services for the elaboration of projects related to public-private partnerships and grants shall preferably be celebrated by executing a contest with previous stipulation of premium or compensation, or by means of invitation as determined by paragraph 10 of article 22 of Law 8.666/03" (NR)

The invitation can also be used for hiring services of consulting, auditing, technical reports and intellectual works to the Public Administration, whatever their costs are, by applying the rules below:

I - At least 3 (three) people will be invited, being individuals or companies of high qualification, to submit proposals;

II - In the preparation phase, the authority in charge will approve the list of people to be called for submitting their proposal, as well as the committee that will evaluate them, and the acceptance criteria and judgment of the proposals;

III - The commission will be comprised of at least three people of high professional and moral standards, public employees or not, and their appointment must be justified, indicating their qualification;

IV - Invitees, whose selection shall be fully justified, even with their legal homologation, technical and economic-financial qualifications and tax compliance, which shall all be checked in the preparation phase as a requirement for being included to the invitee list, will be called by any secure means, such as post and telecommunication, always with proof of receipt;

V - Such convocation shall provide a clear and complete definition of the object, of acceptance and proposal selection criteria, of sanctions in case of default as well as a day, time and place for submitting the proposals;

VI - The convocation will determine a reasonable term for the interested parties to formulate their proposals, which will not be less than five business days;

VII - A copy of the convocation will be posted in the granting entity's webpage for public knowledge;

VIII - The receipt and opening of proposals will take place in public session at the date indicated in the convocation;

IX - The commission will decide independently and impartiality and its members will cast votes individually, explaining their decision in writing;

X - The commission's decision for the winner and the ranking of other invitees can be legally challenged, suspending the process for three business days counted from the challenge of the decision in legal court, and granting other parties the same terms for arguments;

Article 2 This Law is in effect from the day of its publication.

#APPENDIX II [BRIEF DESCRIPTION OF THE CAPM MODEL]

The Capital Asset Precification Model (CAPM) was developed by William Sharpe , John Lintner and Jan Mossin , and consists of a set of forecasts related to the equilibrium expected return over risky assets. It has two key purposes:

1. To obtain a comparative return rate for assessing investments;

2. To obtain informed estimates on the expected return over assets still not negotiated in the financial market.

The CAPM basic model uses simple assumptions that set the model apart from reality, despite allowing for good introspective views on the nature of equilibrium in the bond market:

iii. There are many investors, each with small personal assets in relation to investors overall assets. All of them are price-takers and thus, do not affect bond prices on an individual basis. (Perfect competition hypothesis);

iv. All investors plan to keep the bond for the same time;

v. Investments are limited to a set of public traded financial assets, such as shares or debt bonds.

vi. The investor does not pay taxes upon returns not transaction costs by trading bonds;

vii. All investors pursue rationally the optimization in the average-variance space, indicating that all of them use the Markowitz model for selecting a portfolio;

viii. All investors analyze bonds the same way and share the same economic view about the world. (Equal expectations assumption);

ix. All investors lend and borrow loans of any amount at a flat rate free from risks.

Below, we summarize the equilibrium in this hypothetical world of bonds and investors:

i. All investors decide to keep a portfolio of risky assets in ratios that reproduce the asset representation in the market portfolio (M) covering all assets traded. The ratio of each share in the market portfolio is equal to the market value of each share divided by the overall value of shares.

ii. The market portfolio only does not remain in the efficient border as well as it is also the portfolio that bases the optimal capital allocation line calculated by each investor.

iii. All investors keep M as the optimal risky bonds portfolio, differing only in the amount invested in it when compared against the amount invested in the risk-free asset.

iv. iv. The premium for the risk over the market portfolio is given by:

$$E\left(r_m\right)-r_f=\overline{A}\sigma^2{}_m$$

in which $E\left(r_m\right)$ would the expectation of market return, r_f would the individual return of the asset, $\sigma^2{}_m$ would be the variance of the market portfolio and systematic risk, and $\overline{A}$ would be the average aversion to risk among investors.

v. The premium for the individual asset risk is proportional to the risk upon the market portfolio and is given by:

$$E(r_i) - r_f = \frac{Cov(r_i, r_m)}{\sigma^2_m}[E(r_m) - r_f] = \beta_i[E(r_m) - r_f]$$

in which the coefficient β_i measure to what extent the return upon shares and the market move together.

The coefficient β_i measures the share contribution i to the portfolio variation as a fraction of the whole market portfolio variance. Using this coefficient, we can rewrite the last equation as:

$$E\left(r_i\right) = r_f + \beta_i\left[E\left(r_m\right) - r_f\right]$$

This so-called **expected return-beta ratio** allows us to see why assuming investors will behave similarly is useful. If all investors keep the same risk bond portfolios, all will find that the beta of every asset with the portfolio market is the same to the beta of every asset with their own risk bond portfolio. Thus, all will agree with the premium suitable to the risk of each asset.

CAPM implies that, when investors try to optimize their personal portfolios, each investor arrives at the same portfolio, with weights on each asset equal to those in the market portfolio. Still, given that the optimal risk portfolio is the market portfolio, a passive investment strategy in a portfolio indexed to the market becomes efficient.

In fact, what one can see is that different investment managers effectively create bond portfolios with risks differently from the market index. This is partly due to the use of different data lists when creating the optimal portfolio.

Thus, CAPM implications are incorporated into two prognostics:

i. The market portfolio is efficient;

ii. The line for the bond market (the expected return-beta rate) describes the risk-return ratio exactly. In other words, the difference between an acceptable return rate and the rate effectively expected from a share (given by α) is equal to zero.

The main problem of testing these prognostics is that one cannot observe the market's hypothetical portfolio. A "market portfolio" should include all risk assets that may be kept in the investor portfolio, i.e., it would include debt bonds, real estate, foreign assets, private companies and human capital. These assets have little negotiation, if any.

The model fails empirical tests, i.e., data rejects the hypothesis of values equal to zero across the board at acceptable importance levels. Perhaps this failure is caused by the data, or by the validity of market replacement (the S&P 500 index is widely used as market portfolio) or by not meeting basic assumptions for the econometric models used.

CAPM enhancement:

Several simplifying assumptions are used in CAPM. As per literature, some general equilibrium models with more realistic assumptions (with theoretical rigidity on agent interaction) were obtained in the last decades, supplementing hypotheses assumed by CAPM, such as:

i. Zero Beta Model

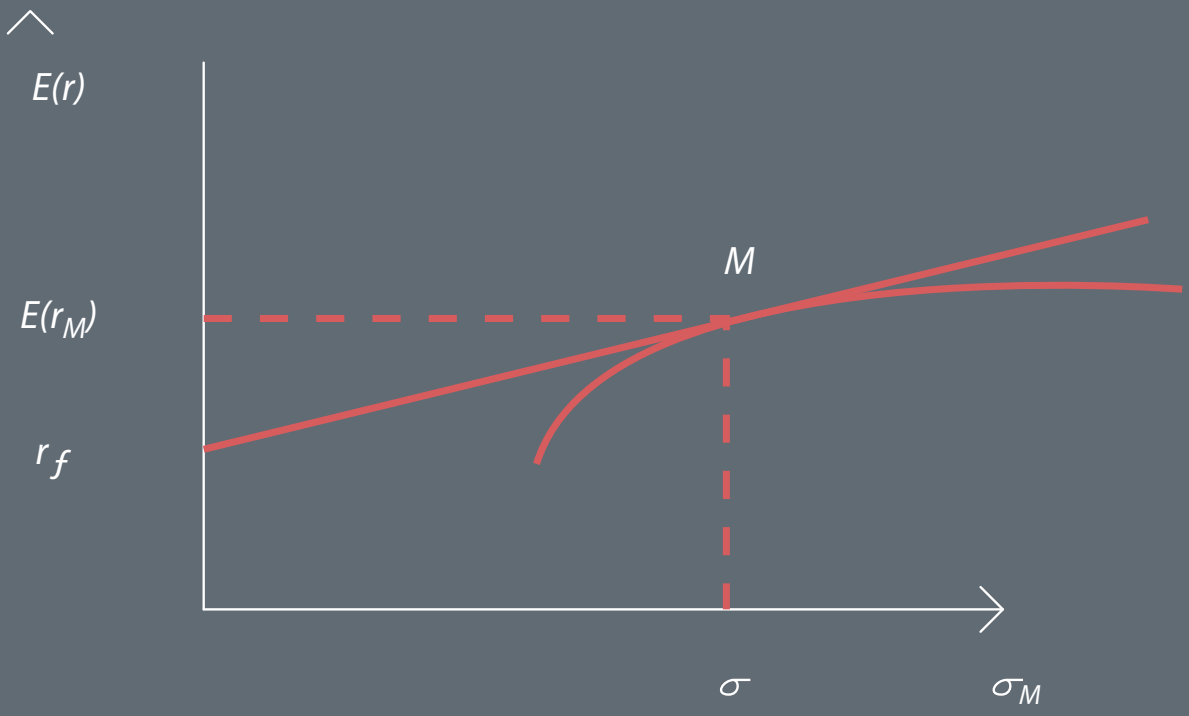
ii. Income from labor and not negotiated assets

iii. Multiperiodic model and protected portfolio

iv. Consumption-based CAPM

However, the biggest headways in asset pricing have been obtained by employing multifactorials models, that basically ignore construction via general equilibrium (theoretical rigidity) and expand CAPM empirically by using additional risk factors through analyses of main components and econometric tests, such as the models mentioned in the main text.

CHART 73: RISK AND RETURN RATE



Drafted by GO ASSOCIADOS.

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