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Attracting private investments for infrastructure in Brazil

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This study sought to identify the main drivers of and barriers to attracting capital market investments to the infrastructure sector in Brazil. The research findings indicate that the incentives vary according to the type of investor. Individual investors are strongly attracted by the tax exemption provided for in Statute 1,2431/2011 to purchase incentivized debentures, and, today, they represent one of the main investors in infrastructure in the country. On the other hand, domestic pension funds have no incentives based on this piece of legislation (their investments are exempt from income tax). For these pension funds, the spread paid by the issuers of incentivized debentures is low. Foreign investors consider the investment environment in the country to be unfavorable due to factors such as high exchange rate volatility and political instability. Therefore, broader institutional reforms are needed to fill the gap in infrastructure investments and attract long-term investors. Green certification of infrastructure projects represents another interesting strategy for attracting investments, especially foreign investors.
Keywords: infrastructure; capital market; individual investors; pension funds.

Atração de investimentos privados para a infraestrutura no Brasil

Este estudo busca identificar as principais motivações e barreiras para a atração de investimentos do mercado de capitais para o setor de infraestrutura no Brasil. Entre os resultados da pesquisa, verificou-se que os incentivos variam conforme o tipo de investidor. Pessoas físicas são fortemente atraídas pela isenção fiscal prevista na Lei nº 12.431/2011, para a compra de debêntures incentivadas, e hoje representam um dos principais investidores em infraestrutura no país. Já fundos de pensão domésticos não são incentivados pela isenção da lei — seus investimentos são isentos de Imposto de Renda — e consideram baixo o spread pago pelos emissores das debêntures incentivadas. Investidores estrangeiros avaliam como desfavorável o ambiente de investimentos no país, em função de fatores como a alta volatilidade cambial e a instabilidade política. Conclui-se, portanto, que, para suprir a lacuna de investimentos em infraestrutura, há a necessidade de reformas institucionais mais amplas para atrair investidores de longo prazo. A certificação verde de projetos de infraestrutura representa outra estratégia interessante para a atração de investimentos, sobretudo estrangeiros.
Palavras-chave: infraestrutura; mercado de capitais; investidores individuais; fundos de pensão.

Atraer inversión privada para infraestructura en Brasil

Este estudio buscó identificar las principales motivaciones y barreras para atraer inversiones del mercado de capitales al sector de infraestructura en Brasil. Entre los resultados de la investigación se encontró que los incentivos varían según el tipo de inversionista. Los inversionistas individuales son fuertemente atraídos por la exención de impuestos prevista en la Ley nº 12.431/2011 para la compra de debentures incentivados y hoy representan uno de los principales inversionistas en infraestructura del país. Los fondos de pensiones nacionales, por su parte, no están incentivados por la exención de la ley (sus inversiones están exentas del Impuesto a la Renta) y consideran bajo el margen pagado por los emisores de debentures incentivados. Los inversionistas extranjeros consideran que el ambiente de inversión en el país es desfavorable, debido a factores como la alta volatilidad del tipo de cambio y la inestabilidad política. Por lo tanto, se concluye que, para llenar el vacío de inversiones en infraestructura, se necesitan reformas institucionales más amplias para atraer inversores a largo plazo. La certificación verde de proyectos de infraestructura representa otra estrategia interesante para atraer inversiones, especialmente extranjeras.
Palabras clave: infraestructura; mercado de capitales; inversores individuales; fondos de pensión.

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1. INTRODUCTION

According to The Global Commission on The Economy and Climate (2014), approximately US$ 6.27 trillion per year are needed to meet the world's current and future demands for infrastructure. Of this gap, 54% is in the energy sector, 24% in the water and waste sector and 22% in transport, while 65% lies in middle-income countries (Bielenberg, Kerlin, Oppenheim, & Roberts, 2020).

Classified as an upper-middle-income nation, Brazil has a huge investment gap in infrastructure. As estimated by the Brazilian Association of Infrastructure and Basic Industries (Associação Brasileira de Infraestrutura e Indústrias de Base [Abdib], 2020), the country would require annual investments equivalent to 4.31% of the Gross Domestic Product (GDP) over the next 10 years, especially in the transport and logistics sector, whereas total investments made in 2019 represented only 1.71% of GDP (Table 1).

TABLE 1 INVESTMENTS MADE IN 2019 VS. REQUIRED ANNUAL INVESTMENTS (% OF GDP)

Sector	Investments made in 2019	Required annual investments needed
Transportation and logistics	0.34	2.26
Electricity	0.71	0.84
Telecommunications	0.46	0.76
Sanitation	0.20	0.45
Total	1.71	4.31

Source: Abdib (2020).

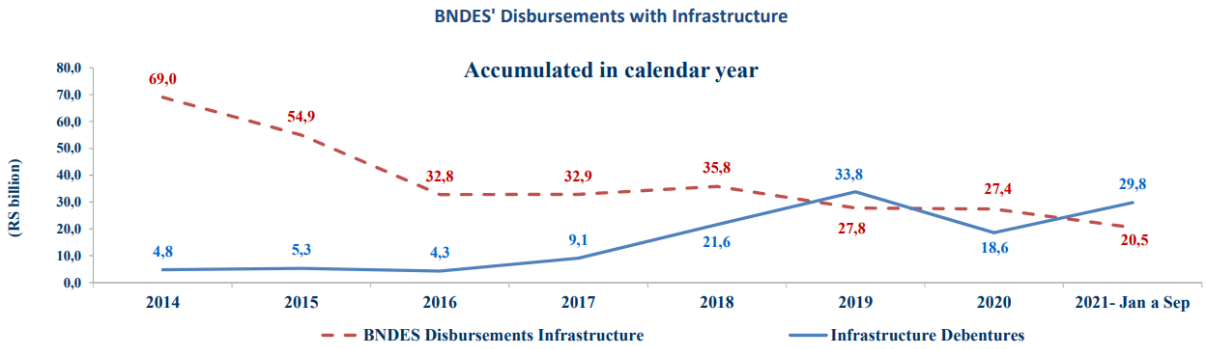
Until recently, public capital was the country's main source of infrastructure finance, responsible for 45.7% of total investments in 2014 (Frischtak & Noronha, 2016). However, due to the adverse fiscal situation in the country, aggravated by the covid-19 pandemic, and the current strategic direction of the National Bank for Economic and Social Development (BNDES) to reduce its financing portfolio (Vasconcelos, 2019), a greater share of capital market investments will be needed to fill the gap in infrastructure investments.

Historically, Brazil has had high interest rates, directing institutional investors to low-risk investments, especially Treasury bonds. However, with its basic interest rate (SELIC) dropping from 14.25% p.a. in July 2015 to 2% p.a. in August 2020 (in nominal terms), there was an increase in investor appetite for higher-risk, higher-return investments, such as stocks and corporate bonds.

In parallel, Statute No. 12,431, of June 2011 (Lei nº 12.431, de 24 de junho de 2011), created a special class of debt instrument, the incentivised debenture, issued by companies or special purpose companies (SPEs) to finance infrastructure projects considered to be priority projects by the federal government. By granting tax exemption to retail investors, the incentivised debenture promoted a significant increase in capital market investments in infrastructure.

As shown in Graph 1, while BNDES disbursements for infrastructure fell from R$ 69 billion in 2014 to R$ 27.4 billion in 2020, the amount of investments in incentivised debentures increased from R$ 4.8 billion to R$ 18.6 billion in the same period, even surpassing BNDES disbursements in 2019.

GRAPH 1 BNDES DISBURSEMENTS IN INFRASTRUCTURE VS. INFRASTRUCTURE DEBENTURES



Source: Ministério da Economia (2022).

Retail investors have stood out as infrastructure investors in Brazil. As a result of the tax incentive granted by Statute No. 12,431, of June 2011 (Lei nº 12.431, de 24 de junho de 2011), retail investors were responsible for the direct purchase of 25.38% of incentivised debentures issued in the primary market since its creation (Table 2). Indirectly, they also allocate their resources to infrastructure through investment funds dedicated to this asset class, also enjoying tax incentives, as explored below (Research Findings section).

TABLE 2 DISTRIBUTION: INCENTIVISED DEBENTURES FROM 2012 TO JANUARY 2022

Investor	%	BRL million
Retail investors	25.38	38,780.1
Financial institutions linked to the issuer and/or consortium participants	18.01	27,516.1
Investment funds	21.31	32,562.1
Other financial institutions	10.83	16,549.3
Intermediary institutions participating in the distribution consortium	11.20	17,116.1
Foreign investors	3.84	5,859.3
Others	9.43	14,386.5
Total	100	152,769.4

Source: Ministério da Economia (2022).

In view of this context, this article seeks to identify the main drivers of and barriers to the attraction of capital market investments to infrastructure in the country. In addition to this introduction, this study presents the literature review and methods sessions, followed by a session discussing the research findings and another with final considerations. The scope of this study is part of a global research project whose objective is to analyse sources of private financing for infrastructure in Brazil (in progress).

2. LITERATURE REVIEW

Historically, investments in infrastructure have been primarily made by the public sector. However, due to fiscal constraints, from the 1990s onwards, several countries began to seek greater participation of the private sector in infrastructure investments, including via capital markets (Croce & Yermo, 2013).

Institutional investors represent a promising funding source for both greenfield projects — in which new assets are built — and brownfield projects — in which existing assets are improved, operated and/or maintained (Federal Highway Administration [FHWA], 2013) —, and a growing number of investors, such as large pension funds and insurance companies, have been pursuing investment opportunities in infrastructure. In 2020, the Organization for Economic Co-operation and Development (OECD, 2020) mapped the amount of infrastructure investments made by institutional investors from OECD and G20 countries. Of the US$1.04 trillion to infrastructure assets, the energy sector received US$ 488 billion, followed by the transport sector with US$130 billion, whereas the main investors were pension funds (36% of total) and insurers (10%).

Infrastructure assets offer an attractive investment alternative for institutional investors since infrastructure investments have long-term and stable cash flows, protected from inflation. Furthermore, they tend to reduce investment portfolio volatility as their characteristics differ from those observed in real estate and equity investments (Torrance, 2009). Other benefits of infrastructure

investments include enhanced portfolio diversification and the generation of alternative sources of income (Inderst, 2016; Sharma, 2012).

Despite the theoretical match, at least, between the long-term liabilities of institutional investors and the characteristics of infrastructure assets, only 2% of the assets of the world's largest pension funds were allocated to infrastructure in 2017 (OECD, 2019).

Infrastructure assets are considered heterogeneous and complex, associated with political, reputational, governance, environmental, construction, operational and financial risks, in addition to being subject to the uncertainties of the regulatory framework of the country where they are located (Inderst, 2014; Sharma, 2013). Thus, investments in infrastructure require specific knowledge of local conditions and methods of analysis distinct from those employed for traditional assets such as corporate stocks and bonds (OECD, 2020). The costs of developing such technical capabilities are hardly justified for a one-off opportunity (Inderst, 2016; OECD, 2020).

Challenges are also identified on the supply side, such as the lack of suitable projects, the small size of the projects, the lack of investment grade and poor procurement processes (Inderst, 2016; OECD, 2020). Investments in infrastructure are also affected by the lack of project quality data and regulatory, political and economic conditions in the region or country of the project, making it hard for investors to assess investments (Croce & Yermo, 2013; Torrance, 2009).

This study seeks to assess whether the challenges found by the academic and grey literature, presented above, also apply to the Brazilian context. Additionally, it seeks to contribute to fill a gap in the academic literature on institutional investments in infrastructure, in which most studies consist of grey literature reports — e.g., working papers from OECD and the Asian Development Banking Institute —, largely on developed countries and, hence, lacking granular studies on the role of capital markets in emerging markets.

3. METHODS

Fourteen interviews were conducted with representatives of investment managers (7), renewable energy companies (1), consultancies (3), academia (2) and the federal government (1). Respondents were selected based on their professional experience and/or expertise in infrastructure investments and/or capital market investments. The interviews were conducted between September 2020 and March 2021, remotely, due to the COVID-19 pandemic. The interview guide was adapted for each interview, according to their expertise and/or organisation, based on 2 guiding questions: "In your opinion, which are the main drivers for attracting capital market investments to infrastructure projects and companies in Brazil?"; "In your opinion, which are the main barriers to attracting capital market investments to infrastructure projects and companies in Brazil?".

Lasting between 23 minutes (shortest) and 66 minutes (longest), the interviews were digitally recorded and later transcribed, except when the interviewees did not allow recording, two cases in which the authors took extensive notes. Data analysis was performed using content analysis, through the creation of thematic units — defined by drivers of and barriers to investments in infrastructure —, and subsequent coding of transcripts for analysis in an iterative process (Krippendorff, 2004; Lacity & Janson, 1994).

4. RESEARCH FINDINGS

The interviewees highlighted the behaviours and preferences of 3 types of capital market investors: retail investors, pension funds and foreign investors.

Regarding retail investors, the tax incentive granted by Statute No. 12,431, of June 2011 (Lei nº 12.431, de 24 de junho de 2011), was cited by several interviewees as a catalyst for private investments in infrastructure, making them one of the largest infrastructure investors in the country, via incentivised debentures.

> Retail investors buy a lot of these papers [incentivised debentures] [...] it is a really interesting product in the investment portfolio of retail investors and even through funds (Investment Manager 1).

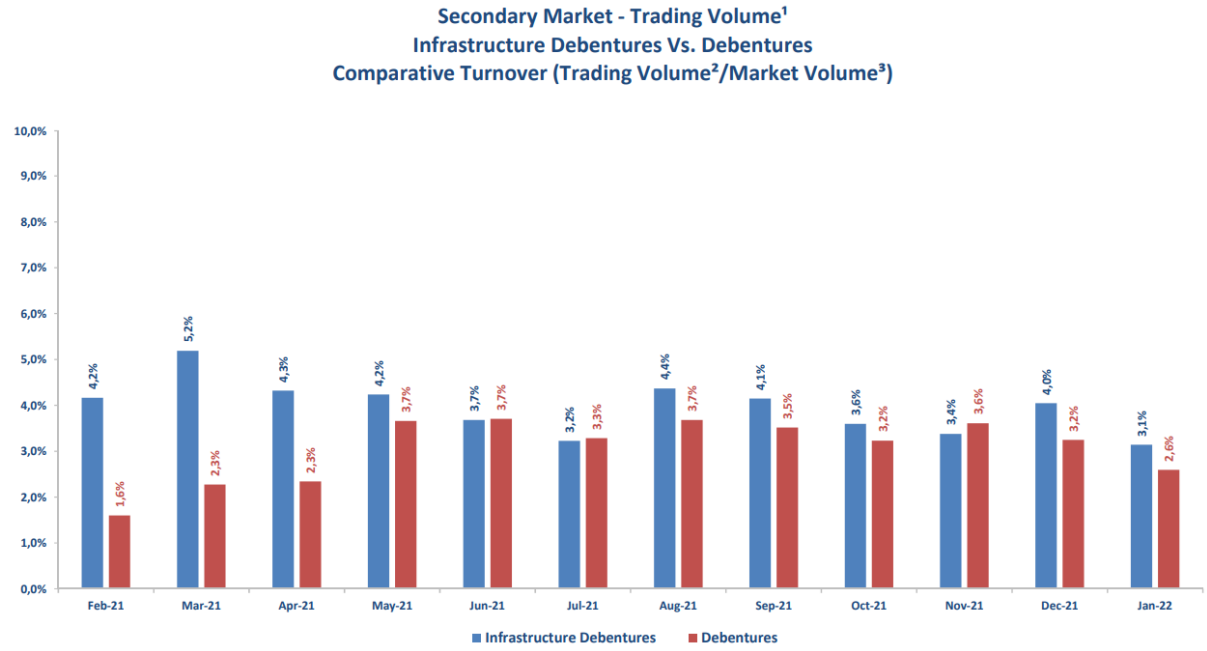
As they favour highly liquid investments — retail investors may, for example, lose their job or decide to buy a new house and thus need short-term funds —, they prefer to buy debentures with greater liquidity, such as debentures issued by large companies, to the detriment of investments in greenfield projects, generally issued by SPEs and with a longer horizon.

> Individuals need liquidity because individuals have less visibility of the future. It is important that, when they want to divest, they can do it. We [investment fund manager] have mechanisms to bring liquidity, such as listed investment funds. We can create an investment fund of listed incentivised debentures that, at D+2, that person can divest (Investment Manager 2).

The preference of retail investors for liquidity, which refers to the ability to buy or sell assets quickly without significant price loss (OECD, 2004), is reflected in the trading volume — in relation to the stock of debentures (or turnover) — of incentivised debentures in the secondary market, as monitored by the Ministry of the Economy (Graph 2): the trading volume of incentivised debentures has been higher than that observed for non-incentivised debentures in relation to the stock of these securities.

> Which debentures are buyable and sellable? Those that have a good secondary market, that many people hold and that are able to generate liquidity when sold. Which debentures have this liquidity? Those that are not very long and those that are in the hands of retail investors (Investment Manager 1).

GRAPH 2 TRADING VOLUME OF INCENTIVISED DEBENTURES VS. NON-INCENTIVISED DEBENTURES



Notes:

[1] Type of transaction (intra-group and extra-group): The intra-group transactions are negotiated between institutions belonging to the same financial conglomerate and extra-group transactions are negotiated between participants of different conglomerates and among participants with clients who are not part of the ANBIMA REUNE system. Leasing debentures are not considered.

[2] Financial trading volume of infrastructure debentures.

[3] Financial stock of infrastucture debentures.

Source: Ministério da Economia (2022).

With regard to pension funds, respondents mentioned that the incentive granted by Statute No. 12,431, of June 2011 (Lei nº 12.431, de 24 de junho de 2011), is not attractive for these funds as their investments are already tax exempt — only beneficiaries pay taxes on returns, according to Statute No. 11,053, of December 2004 (Lei nº 11.053, de 29 de dezembro de 2004).

Furthermore, the interviewees observed that the high demand for incentivised debentures by retail investors caused a decrease in the spread paid by the issuers, shunning institutional investors, who consider the spread to be low in relation to the risk of the investment. This contributed to the emergence of regulatory proposals for a new series of incentivised debentures, with the granting of the tax benefit to the issuer (Projeto de Lei nº 2.646, de 2020) in order to allow for higher investment returns.

> The long-term investor who should be the one who will be invested for the next five, ten years, who is the pension fund, who has long-term liabilities, this player is not yet the main investor. Why not? Because the tax benefit for retail investors is so big that it reduces total investment returns (Investment Manager 3).

Additionally, large pension funds tend not to be attracted to investments with low liquidity, such as investments in greenfield projects, depending on the profile of their participants. In Brazil, approximately 62% of pension fund assets are managed by defined benefit (DB) plans, which are older — 9 of the 10 largest DB funds were created before 1980 —, no longer enrolling new participants and with a percentage of almost 56% of retired participants (Associação Brasileira das Entidades Fechadas de Previdência Complementar [Abrapp], 2021). Thus, they tend to prefer investments with greater liquidity, in order to fulfil their commitments to retired participants.

On the other hand, defined contribution (DC) plans have a proportion of retired participants of only 6.8% (Abrapp, 2021), creating an opportunity, in theory, for investments in assets with higher risk, higher return and lower liquidity. However, these funds, in most cases, are smaller and tend to lack the financial resources and expertise needed to make investments in infrastructure projects.

With regard to foreign investors, the interviewees mentioned that the main barriers to investing in private equity in the country are structural in nature, such as high exchange rate volatility and political instability, causing a loss of competitiveness compared to other emerging economies that have a greater degree of transparency, low levels of corruption, attractive growth rates and low exchange rate volatility.

> If I'm a Canadian pension fund and I want to invest in emerging markets and you have Brazil, and then you have, I don't know, South Africa, but you have a lot of Asian countries where it is extremely easy to do business, everything is more transparent, corruption levels are lower, [...] you go to Singapore [...] Thailand, Vietnam, they are super, super attractive markets and much easier to do business, their growth rates are extremely attractive (Consulting 1).

From another perspective, some interviewees noted that forming partnerships with local investors or establishing a local team can help foreign investors gain expertise, specific to the Brazilian context, and overcome some of these difficulties. They also noted that foreign investors may have greater tolerance for the country's risks when the infrastructure asset is certified as green or low-carbon, as many investors have ESG — environmental, social and governance — policies or mandates to invest in green assets. Therefore, knowledge of the Brazilian institutional environment and the green appeal are perceived as mitigating structural challenges.

> But when we look at [...] a green issuance abroad, there was a very strong demand [...] and the green appeal in dollars has been large (Investment Manager 4).

Finally, more generally, respondents also highlighted some specific characteristics of infrastructure assets and companies that make them relatively less attractive in certain circumstances, such as in the case of greenfield projects due to uncertainties about demand, and public concessions due to the legal uncertainty associated with contracts, especially in transport infrastructure.

> Greenfield projects, such as [railway projects] FIOL, FICO and Ferrogrão, are riskier because they do not have a track record of volume — and, consequently, revenues —, in addition to

depending on high up-front investments. The scenario in these cases is also more challenging due to the possibility of delays in several approvals. These investments are "bets" on future revenues (Investment Manager 3).

5. DISCUSSION

Retail investors are today one of the main infrastructure investors in Brazil, a unique feature of the country's outlook. Despite their prominent role, such investments are still insufficient to address current infrastructure gaps. Furthermore, the preference of retail investors for short-term investments and greater liquidity makes them reluctant or not too interested in investing in greenfield projects.

Regarding institutional investors, the tax incentive has not influenced pension funds to invest in infrastructure debentures as they are already tax-exempt and due to the spread currently paid by issuers. By proposing the creation of a new series of incentivised debentures, granting tax exemption to the issuer, Draft Bill No. 2,646, of 2020 (Projeto de Lei nº 2.646, de 2020), seeks to increase the spread paid and attract pension funds to infrastructure investments. The sectors classified as infrastructure will also be expanded, including, for example, public lighting, solid waste management, social infrastructure, and environmental conservation units. Therefore, it will be interesting to follow the developments of this Draft Bill and its implications for investments in infrastructure, especially for greenfield projects.

This is because, even with the approval of this Draft Bill, large pension funds — in general, DB funds — should favour investments in debentures issued by companies, rather than SPEs, due to their population maturity profile and the need for greater liquidity. Smaller funds — generally DC — tend not to have the expertise and financial resources to invest in greenfield assets. It is worth mentioning, however, that there are several variables that can affect pension fund investment decision-making and, therefore, their investment behaviours vary from case to case.

This study's findings corroborate the literature, which shows that investments in infrastructure require specific knowledge of local conditions, incurring expenses for the development of this expertise and the development of different methods of analysis from traditional assets such as equity and bonds (Inderst, 2016; OECD, 2020). Therefore, while there is a theoretical match between investments in infrastructure and institutional investor liabilities, there are a number of peculiarities that affect this relationship.

6. FINAL REMARKS

This study sought to identify the main drivers of and barriers to capital market investments in infrastructure in Brazil, according to type of investor. As such, we sought to fill a gap in the academic literature on the subject.

Attracted by the tax exemption granted by Statute No. 12,431, of June 2011 (Lei nº 12.431, de 24 de junho de 2011), for incentivised debentures, retail investors are one of the main infrastructure investors in the country. On the other hand, domestic pension funds are not influenced by this tax incentive and consider to be low the spread paid by the issuers, a reflection of the high demand from retail investors. Foreign investors consider challenging the country's investment environment, due to factors such as the high exchange rate volatility and political instability.

With regard to pension funds, suggestions for changing this scenario include the combination of assets under management for new DC funds, increasing the volume of investments, generating economies of scale, reducing administrative costs and favouring investments in alternative assets. Although there are no legal restrictions on the combination of assets, the measure requires prior and express approval from the regulatory and supervisory body (Lei complementar nº 109, de 29 de maio de 2001, art. 33). Future research could explore the possible positive and negative implications associated with governmental encouragement of this measure.

As the literature points out the preference of foreign investors for countries with greater macroeconomic stability and protection of the rights of asset holders (Aggarwal, Klapper, & Wysocki, 2005; Genberg, 2016), it is crucial that the country invest in structural reforms, such as combating corruption, restoring investment grade, further exchange rate stability and strengthening of the legal environment.

Additionally, future studies could assess the impact of Draft Bill Nº 2,646, of 2020 (Projeto de Lei nº 2.646, de 2020) (if approved) in attracting foreign investors, especially the effects of allowing the issuance of securities with an exchange rate fluctuation clause, the possibility of issuance in international markets and the additional tax incentive to issuances financing green projects, given the growing interest of foreign investors to this investment category. Future studies could also analyse the impact of the increase of the country's interest rates — growth of SELIC interest rate from 2% p.a. in March of 2021 to 11.75% p.a. in March of 2022 — for private investments, in view of the attractiveness of sovereign bonds in a macroeconomic scenario of high interest rates.

The certification or preparation of projects labelled as green by the public sector seems to be another interesting strategy for attracting foreign investment. Similarly to the experience of the Ministry of Infrastructure with railway projects (Ministério da Infraestrutura, 2021a, 2021b), the government could identify which other infrastructure projects could be certified according to the Climate Bond Standards certification criteria, so that future concessionaires of these projects can access financing in the green bond market.

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