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World Bank Staff Note [1]

Understanding the Effects of the *Taxa de Longo Prazo* (TLP) Reform in Brazil

July 2017

Abstract (in Portuguese)

A criação da Taxa de Longo Prazo (TLP) em substituição da Taxa de Juros de Longo Prazo (TJLP), por meio da Medida Provisória nº 777 atualmente em discussão no Congresso pode ter impacto significativo sobre o desempenho econômico do Brasil. Esta breve nota apresenta uma contribuição ao debate com base na combinação de evidências analíticas novas e já existentes.

A mensagem essencial desta nota é que se espera que o efeito da reforma sobre a economia brasileira seja muito positivo. Primeiro, a reforma seria uma etapa significativa para o aperfeiçoamento da alocação de capital no Brasil, que deve aumentar a produtividade e o crescimento econômico.

Diversos estudos rigorosos sobre os impactos dos programas de crédito subsidiado, inclusive um recentemente realizado pelo Banco Mundial, constataram que o crédito subsidiado do BNDES teve pouco ou nenhum impacto sobre o investimento e nenhum sobre a produtividade. Outros estudos também verificaram que o crédito disponibilizado pelo BNDES beneficiou sobretudo empresas grandes e lucrativas, reduzindo suas despesas financeiras, mas sem efeito algum sobre seus investimentos e desempenhos. Assim sendo, dispõe-se de vastas evidências empíricas que sugerem que a reforma não terá impacto negativo sobre o desempenho econômico.

Em segundo lugar, a reforma facilitará os esforços com vistas ao ajuste fiscal – que é essencial para impulsionar de maneira sustentável o investimento, a geração de empregos e o crescimento econômico no Brasil – e evitará o aumento automático dos custos fiscais caso a taxa de juros SELIC torne a subir. É importante ressaltar que a reforma não descarta a possibilidade de o governo fornecer crédito subsidiado, mas apenas desvincula o fornecimento de subsídios associados ao crédito do BNDES da decisão de

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fornecer o crédito. Os atuais subsídios implícitos no crédito do BNDES são opacos. Não aparecem no orçamento, mas mesmo assim aumentam o gasto público e a dívida pública. A mudança na TLP que está sendo proposta traria diversos benefícios neste sentido: (i) manteria plenamente a flexibilidade necessária para que o governo ofereça crédito subsidiado; (ii) tornaria esses subsídios transparentes e os incluiria no orçamento, o que é sempre desejável, especialmente em um ambiente de restrição fiscal; (iii) e, portanto, facilitaria a alocação de subsídios para onde seu impacto é maior.

Terceiro, a reforma também melhoraria a transmissão da política monetária, o que ajudaria a reduzir a volatilidade das taxas de juros e a volatilidade econômica, assim beneficiando toda a economia. Isto porque a reforma da TLP aumenta substancialmente a parcela do mercado de crédito que responde aos movimentos da política monetária, permitindo, portanto, que o Banco Central limite os movimentos da SELIC.

Em quarto lugar, embora seja verdade que a reforma pode elevar as taxas de juros e aumentar sua volatilidade para as empresas mutuárias do BNDES, na prática espera-se que este impacto seja pequeno, em virtude do que apontam as pesquisas sobre investimento e produtividade mencionadas acima; além disto, o impacto será mitigado pelos efeitos positivos da reforma sobre a redução das taxas de juros e da volatilidade do resto do mercado de crédito.

Quinto, a reforma também seria benéfica para as operações do BNDES. Notadamente, ao proporcionar uma taxa de referência baseada no mercado e transparente, a TLP faria com que fosse mais fácil para o BNDES obter recursos por meio da securitização de certos ativos, assim alavancando o financiamento privado.

Sexto, a TLP também melhoraria a remuneração do Fundo de Amparo ao Trabalhador (FAT), reduzindo os custos impostos a todos os trabalhadores, uma vez que suas poupança são atualmente remuneradas a uma taxa muito menor que as oferecidas pelo mercado. Por sua vez, isso pode reduzir a alta taxa de rotatividade do trabalho e, desse modo, também contribuir para uma maior produtividade, além de oferecer aos trabalhadores um melhor auxílio ao desemprego.

Por fim, o momento é ideal para fazer a reforma, pois a TJLP e a taxa TLP estimada agora estão próximas, de tal forma que os custos do ajuste serão mínimos para as empresas. Na verdade, a nosso ver, o período de transição de 5 anos da TJLP para a TLP contemplado na Medida Provisória 777 poderia ser significativamente abreviado considerando a atual pequena diferença entre a TJLP e o nível proposto da TLP.

Abstract (in English)

The creation of the *Taxa de Longo Prazo* (TLP) to substitute the *Taxa de Juros de Longo Prazo* (TJLP), as envisaged in the “Provisional Decree” (*Medida Provisoria*) N. 777 currently being debated in the Brazilian Congress can have significant impact on Brazil’s economic performance. This short note offers a contribution to the debate based on a combination of fresh and existing analytical evidence.

The key message of this note is that the reform is expected to have a very positive effect on the Brazilian economy. First it would constitute a meaningful step to improve the allocation of capital in Brazil, which is expected to raise productivity and economic growth. Several rigorous studies of the impact of subsidized credit programs, including a new study recently conducted by the World Bank, have found that the BNDES subsidized credit has had little or no impact on investment and jobs creation, and none on productivity. Studies also found that BNDES credit mostly benefited large and profitable firms, lowering their financial expenses, but with no effect on their investments and performances. Hence there is ample empirical evidence which suggests that the reform will have no negative impact on economic performance.

Second, the reform will facilitate the efforts towards fiscal adjustment—which is essential to boost investment, jobs creation and economic growth in a sustainable manner in Brazil—and it will prevent an automatic increase in fiscal costs should the SELIC interest rate rise again. It is important to note that reform does not remove the possibility for the government to provide subsidized credit. It only delinks the provision of subsidies associated with BNDES credit from the decision to provide the credit. The current subsidies implicit in BNDES credit are opaque. They do not appear in the budget, but still increase the public spending and public debt. The proposed change to the TLP would bring several benefits in this regard: (i) it would maintain full flexibility for the government to offer credit subsidies; (ii) it would make these subsidies transparent and included in the budget, which is always desirable and especially so in a fiscally constrained environment; (iii) and it would thereby make it easier to allocate any subsidies where they have the greatest impact.

Third, the reform will also improve the monetary policy transmission, which will help reduce interest rates volatility and economic volatility, to the benefit of the entire economy. This is because the TLP reform substantially increases the share of credit market that responds to monetary policy movements and therefore will allow the central bank to limit the movements in the SELIC interest rates.

Fourth, although it is true that the reform may raise and increase the volatility of interest rates for firms borrowing BNDES funds, in practice this impact is expected to be small based on the research on investment and productivity referred to above, and it will be mitigated by the positive effects on reduced interest rates and volatility from the rest of the credit market.

Fifth, the reform would also bring benefits to BNDES operations. Notably, by providing a market-based and transparent reference rate, the TLP will make it easier for BNDES to raise funds through securitization of certain assets and hence leveraging private finance.

Sixth, the TLP would also better remunerate the *Fundo de Amparo ao Trabalhador* (FAT), reducing the costs imposed on all workers whose savings are currently remunerated at a much lower rate than those offered by the market. In addition, this may also reduce the high labor turnover rate and thereby also contribute to higher productivity—aside from giving workers better unemployment support.

Finally, the timing of the reform is ideal, since the TJLP and the estimated TLP rate are now close, such that the adjustment costs for firms will be minimal. In fact in our view the 5-year transition period from the TJLP to the TLP envisaged in the *Medida Provisoria* 777 could be significantly shortened considering the currently small gap between TJLP and the level of the proposed TLP.

Background

The *Taxa de Longo Prazo*, or TLP, is a new interest rate to be used for long term finance in Brazil. It was introduced by the "Provisional Decree" (*Medida Provisoria*) MP-777, which is expected to be voted on by the Brazilian Congress by September. Over time, it will replace the *Taxa de Juros de Longo Prazo* (TJLP). Credit linked to TJLP amounts to BRL 579 billion[2], or about 19 percent of total outstanding credit. BNDES currently borrows at the TJLP and in much of its onlending indexes the interest rate to the TJLP plus margins for operational costs and risk.

After a convergence period, the plan is for TLP to be set as the yield on the Government's inflation linked bond, NTN-B, plus inflation measured by the IPCA index. Borrowers would thus pay the real interest rate of the 5 year NTN-B plus inflation as well as margins for cost and risk. In order to allow for a smooth transition from the TJLP, the TLP is planned to linearly converge from the TJLP to the new formula over a five-year period starting on January 1st, 2018. In contrast to the TJLP based lending, which is repriced once a quarter,[3] the lending under TLP at the individual loan level will be partially fixed. The real interest rate component (the NTN-B yield) will be fixed for the duration of the loan, whereas the inflation component will accrue over time based on inflation measured by IPCA. This allows for a predictable real interest rate for firms making investment decisions.

Several factors have motivated the reform:

- **Guarding against future fiscal risk:** The gap between the TJLP and the Government's funding cost has created a large indirect and opaque fiscal cost that is estimated to have reached almost R$48 billion in 2016. This cost has declined as market interest rates have declined towards the TJLP, but should market interest rates once again grow and the TJLP not follow, it may loom again.
- **Improving monetary policy transmission:** The TJLP, being set by regulation without a direct link to monetary policy, has ended up delinking a large part of the credit market from monetary policy decisions
- **Concerns about the efficiency of earmarked credit misallocation:** Evidence on the effects on investment and productivity raises concerns – see section below on economic efficiency

This note seeks to provide analytical evidence on the effects of the shift from TJLP to the TLP as a reference rate for long term lending. Specifically, the note is structured to answers four basic questions:

- What do we know about the expected impact of the TLP reform on economic efficiency, investment, jobs creation and growth?
- What do we know about the expected impact of the TLP reform on the fiscal cost of BNDES credit?
- What do we know about the expected impact of the TLP reform on monetary policy transmission and the interest rate?
- What do we know about the expected impact of the TLP reform on borrowing firms, and notably on their investment, jobs creation and productivity?

[2] As of May 2017.

[3] At least theoretically it is set once a quarter. Practically, because of the stickiness of the TJLP repricing is, credit is repriced less frequently (see figure 5 below).

The TLP Reform and Economic Efficiency

The TLP reform may improve the efficient allocation of finance by ensuring that firms only borrow when they have a need and generate sufficient returns to repay without subsidies. The evidence of directed credit in Brazil supporting investment and productivity is indeed quite discouraging. Laudable BNDES transparency on lending has facilitated evaluations based on firm level data. Most studies find no effects on labor or on total factor productivity.[4] For listed firms, generally the larger firms in the economy, there is no effect on real investments.[5] Subsidized funding has instead replaced other funding or has been invested in financial assets, so that subsidized credit appears to have just had a wealth transfer effect. These results do not take into account the social return on projects funded by BNDES, but the income incidence of subsidies embedded in BNDES lending is likely to be regressive as it mostly supports larger and older firms. This being said, for smaller firms, short run effects on investments have been found, in particular in the years following the global financial crisis.[6] Such findings may help guiding the allocation of lending/subsidies in a fiscally responsible way in the future

Forthcoming research confirms earlier findings on credit use, investment and productivity for borrowing firms and adds discouraging new insights on the equipment suppliers meant to benefit from the programs. The research reviews the PSI/FINAME program by BNDES.[7] Like previous studies it finds no effect on credit use and productivity, but some positive effect on investment. The PSI/FINAME program was a subsidized investment program for purchases of machinery, trucks and buses with a high degree of local content from authorized suppliers. Thus, it was a form of subsidized trade finance that could benefit those domestic suppliers that policy makers aim to favor. The research finds that the suppliers that used the program tended to be larger and more productive the than suppliers that did not use the program. The suppliers that used the program did not increase labor productivity, and there is evidence suggesting that revenue total factor productivity actually declined.[8] Thus, whereas subsidies were transferred to these selected suppliers, they did not improve the country's economic performance.

The effect of the TLP reform on allocation of capital depends on BNDES' future activities. Separating the subsidies from lending reduces the incentive for firms to borrow simply to extract the subsidy rent, and it allows BNDES to allocate independently credit and subsidies on efficiency grounds. Of course, BNDES programs and operational policies will play a key role for the materialization of such efficiency gains.

The TLP Reform and the Fiscal Cost of BNDES Credit

The reform will help address the high cost of implicit subsidies embedded in BNDES lending. The reform accrues fiscal savings from the gap between TLP and TJLP, from the reduced sovereign cost of borrowing,

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[4] See for example Ottaviano and Sousa (2008) and (2016) on FINEM; Ribeiro and De Negri (2009) on FINAME and innovative firms; and Lazzarini et al. 2015 on equity and loans in listed firms. De Bolle (2015) finds some evidence that BNDES lending is associated with lower aggregate TFP.

[5] Bonomo et al. (2015).

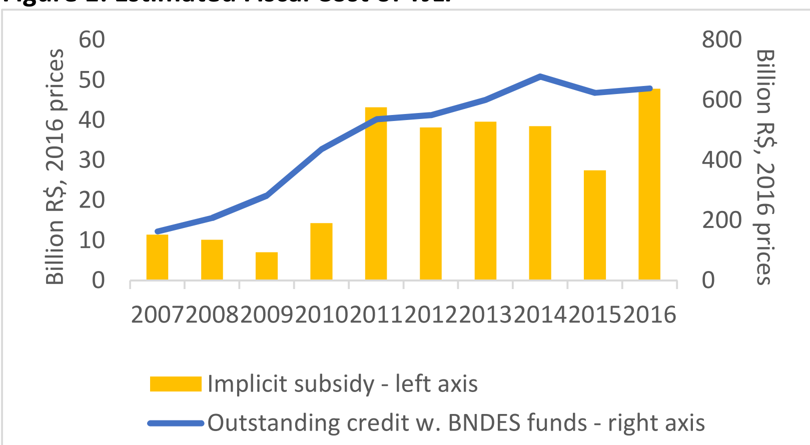
[6] Albuquerque et al. (2014) and Machado and Roitman (2015).

[7] Ribeiro, et al (2017, forthcoming). The work is being undertaken in the context of the Brazil Public Expenditure Review (World Bank 2017).

[8] This result depends on the model specification.

and from the general equilibrium effects arising from improved fiscal sustainability, but only the first effect is discussed here. For illustration, the past fiscal costs of the implicit subsidies embedded in directed credit linked to TJLP is presented in Figure 1. Implicit fiscal subsidies in BNDES lending accrue from a systematic gap between the TJLP and the Government's cost of funds. The outstanding credit has been growing rapidly, and there has been substantial variation between the TJLP and the sovereign cost of funds creating volatility in fiscal costs.

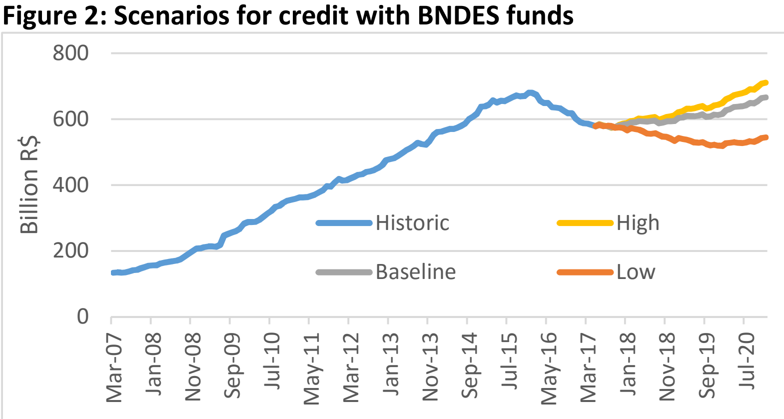
Figure 1: Estimated Fiscal Cost of TJLP



Source: BCB and Fazenda (2017).
Note: Amounts are deflated by the average 2016 IPCA index.

The future fiscal costs will depend in part on the evolution of BNDES funded credit and in part on interest rate developments. Future BNDES credit is controlled by its owner, the government, and management. Informal scenarios (baseline, high, and low) for illustrative purposes are included in Figure 2. The credit amounts are informal estimates using a Banco Central do Brasil (BCB) model.

Figure 2: Scenarios for credit with BNDES funds



Source: BCB and informal estimations.

The gap between TJLP and the fiscal cost of funds is the most important driver of fiscal cost uncertainty. If the fiscal cost of funds would converge to the TJLP, there would be no fiscal impact regardless of BNDES lending volume. If the gap rises to its 2016 average, the baseline BNDES projection would generate an estimated implicit fiscal cost of R$3232 billion per year on average from 2018-2020. The difference between the high and low scenarios for BNDES credit volume would be about R$55.1 billion. Thus, it is the interest rate variation that is the main driver of uncertainty in fiscal costs.

Last but not least, the TLP reform will effectively separate subsidies from BNDES credit decisions. The TLP is a reasonable proxy for the medium term average cost of funds for the Government because it is an actual instrument of raising funds. The Government has in the past provided on-budget interest rate subsidies (known as interest equalization), and that will be a more transparent manner of providing subsidies when necessary (see Frischtak et al. (2017) for a discussion of criteria for embedding subsidies with credit).

The TLP Reform and Monetary Policy Transmission

Brazil has greater interest rate volatility than comparable countries. Economic volatility in Brazil is high, and monetary policy interest rate volatility is an outlier relative to Latin American comparator countries (see Figures 3 and 4). Both the standard deviation (the usual measure of volatility) and the distance between the peaks and the troughs in the monetary policy rate are higher than in comparator countries. This creates uncertainty for borrowers in the free market, and reducing the economic volatility is an important policy objective.

Earmarked credit at regulated rates such as TJLP based lending suppress the effectiveness of monetary policy. The interest rate on earmarked credit is regulated, and the supply of earmarked credit depends on factors such as the amount of funds available to BNDES or the mandatory lending amounts under deposit based lending requirements. Therefore, the supply of earmarked credit does not respond to monetary policy directly. As a consequence, changes in the SELIC need to be larger to have the same impact they would have if all credit were interest rate sensitive.

Figure 3: Monetary Policy Rate Volatility
Standard deviation, 2000-2017

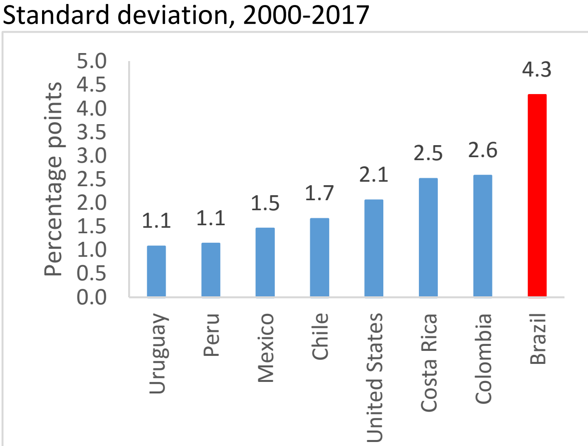
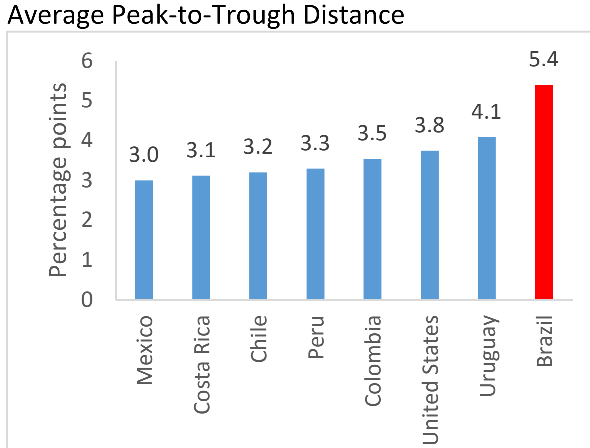


Figure 4: Monetary Policy Amplitude
Average Peak-to-Trough Distance

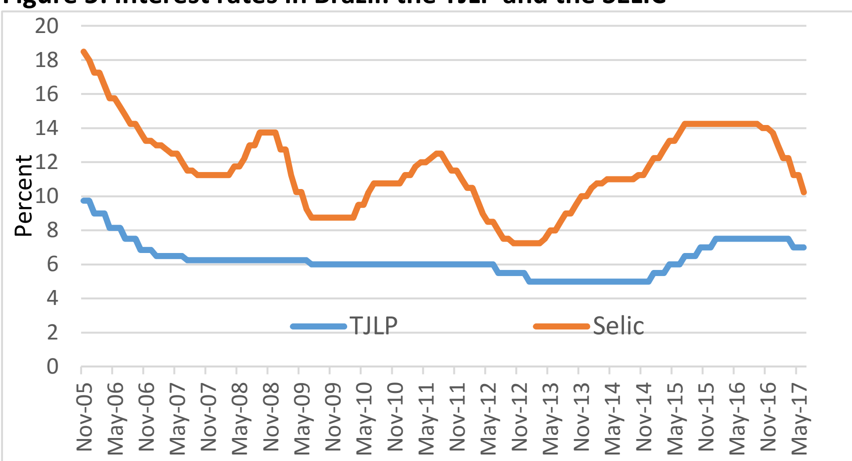


Source: IFS and World Bank Staff Calculations
Note: Based on January 2000 to May 2017 monthly data as available from IFS. Figure 4 is the average of interest rate distance from peak-to-trough and trough-to-peak.

Research has documented how earmarked credit and lending by Government owned banks reduce monetary policy effectiveness.[9] The effect on credit volume is illustrated by how monetary policy expansion affects those firms that only use private free market credit vs. those that also use earmarked credit or other credit from Government banks. A decrease of one percentage point in the SELIC leads to a 3.5 percent increase in borrowing by firms that only rely on private free market credit, whereas the increase for firms using earmarked and government owned bank credit is a mere 1.09 percent. The effect on employment is similarly affected. A one percentage point decrease in the SELIC leads to a 1.18 percent increase in employment in firms using only the private free market. For firms using only earmarked credit and other credit from government owned banks, the increase in employment is only 0.46 percent.

The TLP reform substantially increases the share of credit market that responds to monetary policy movements and therefore can help the central bank reduce economic volatility to the benefit of the entire economy. Credit linked to TJLP is about 19 percent of total credit.[10] Historic analysis suggests that the TLP would behave much more consistent with monetary policy objectives than the TJLP does. Improving monetary transmission will reduce the volatility in interest rates to the benefit of the whole economy.

Figure 5: Interest rates in Brazil: the TJLP and the SELIC



Source: BNDES, BCB, IBGE, Bloomberg and World Bank Staff Calculations.

Because the TJLP has been rapidly converging toward the SELIC, and the estimated gap is now only 1.7 percentage points, it is an opportune time to switch, and the full 5-year transition period may not be needed. The fully implemented TLP would currently increase the interest rate by 1.7 percentage points. If the trend of declining market interest rates continues that gap will be even smaller at the beginning of

[9] Estimated for the period 2006-2012. See Pazarbasioglu et al. (2017), "Brazil Financial Intermediation Costs and Credit Allocation" and Marco Bonomo and Bruno Martins (2016) "The Impact of Government-Driven Loans in the Monetary Transmission Mechanism: what can we learn from firm-level data?", March, 2016, Banco Central do Brasil Working Paper.

[10] TJLP linked loans are of longer maturity than the rest of the credit market and therefore responds more slowly to monetary policy changes.

2018, when the TLP will set in. A 5-year period is therefore more than what is needed to provide a smooth transition.

The Impact on Borrowing Firms

The reform may raise and increase the volatility of interest rates for firms borrowing BNDES funds, and the effect depends critically on the future evolution of market interest rates. If market rates remain stable and close to current levels, the financial impact on borrowers will be small as the currently estimated gap is just 1.7 percentage points. The effect appears small in the near term for several reasons:

- The gap between TJLP and what a fully implemented TLP (i.e. after the planned 5-year transition) would be today is small at only 1.7 percentage points.
- Loans based on TLP will have a fixed real interest rate for the duration of the loan in contrast to TJLP lending, which fluctuates on a quarterly basis with the TJLP – notwithstanding that those changes have been very modest in nominal terms.
- The reform reduces the reliance on fiscal subsidies of BNDES' operation in normal times and hence can improve its ability to respond in a countercyclical manner when truly needed.

The economic impact of increased interest rates and volatility is likely to be small based on the research on investment and productivity, and it will be mitigated by the positive effects from the rest of the credit market. As discussed above, listed firms did not increase investments in response to subsidized earmarked credit. There may be an effect on smaller firms as there is some evidence happened in the immediate aftermath of the global financial crisis. However, reduction in investment may be welfare enhancing if the investments are not generating a return to match the cost of funds. If there are particular social benefits or other externalities associated with the investments, subsidies can still be provided through regular budgetary channels. In addition, the increased volatility of interest rates for this segment will be complemented by a reduced volatility in market interest rates as discussed in the section on economic efficiency.

By passing the interest rate risk to borrowers, political support for macroeconomic stability may strengthen. Borrowers from BNDES are an important political constituency. With the borrowing rate more closely linked to the country's economic performance, BNDES borrowers have a new incentive to provide political support for the fiscal and monetary policies aiming at increasing economic stability.

Leveraging private capital in BNDES operations

By providing a market based and transparent reference rate, TLP will facilitate BNDES raising funds from private investors. BNDES current funding model is unsustainably relying on FAT funds and borrowing from the government. Whereas the TJLP has been attractive for borrowers, it is unattractive as a benchmark to investors interested in co-financing these projects. Instead, by structuring for example lending to infrastructure project using the TLP, BNDES could securitize some assets and thereby attract private funds to infrastructure investments.[11] Moreover, syndicated loans could be priced against the TLP. This could

[11] See Frischtak et al. (2017), "Towards a More Efficient BNDES", the World Bank.

help crowding in private capital and fostering capital market development. In addition, the TLP would offer a return to FAT more in line with what the market offers.

Conclusions

The reform of the TJLP currently being debated in the Congress can have is expected to have a very positive effect on the Brazilian economy. It would constitute a meaningful step to improve the allocation of capital in Brazil, which is expected to raise productivity and economic growth. There is ample empirical evidence which suggests that the reform will have little or no impact on private sector investment and jobs creation, and none on productivity. Second, the reform will facilitate the efforts towards fiscal adjustment—which is essential to boost investment, jobs creation and economic growth in a sustainable manner in Brazil—and it will prevent an automatic increase in fiscal costs should the SELIC interest rate rise again. The reform does not remove the possibility for the government to provide subsidized credit, but delinks the provision of subsidies associated with BNDES credit from the decision to provide the credit, forcing any subsidies to be more transparent and included in the budget (which is not currently the case). Third, the reform will also improve the monetary policy transmission, which will help reduce interest rates volatility and economic volatility to the benefit of the entire economy. Fourth, although the reform may raise and increase the volatility of interest rates for firms borrowing BNDES funds, this impact is expected to be small based and it will be mitigated by the positive effects on reduced interest rates and volatility from the rest of the credit market. Fifth, the reform would also bring benefits to BNDES operations. Finally, the timing of the reform is ideal, since the TJLP and the estimated TLP rate are now close, such that the adjustment costs for firms will be minimal. In fact in our view the 5-year transition period from the TJLP to the TLP envisaged in the *Medida Provisoria* 777 could be significantly shortened considering the currently small gap between TJLP and the level of the proposed TLP.

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