



Brazil's Monetary Policy Transmission Puzzle

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Abstract

This paper examines the structural distortions introduced by the widespread use of post-fixed bonds in Brazil's monetary policy framework. Unlike other economies where monetary tightening adversely affects banks' balance sheets, Brazil's financial institutions often benefit from such policies due to their exposure to post-fixed instruments. This creates perverse incentives that undermine the effectiveness of monetary policy transmission. Using the concept of Evolutionarily Stable Strategies, we argue that the current equilibrium is suboptimal and self-reinforcing.

Subject Areas

Economic System

Keywords

Monetary Policy Transmission, Financial Incentives, Monetary Transmission in Brazil, Balance Sheet Channel

1. Introduction

Brazil's monetary policy framework presents a paradox. On one hand, the country has made significant strides in financial innovation, exemplified by the creation of Pix and a thriving fintech ecosystem. On the other hand, it continues to rely on a monetary transmission mechanism rooted in the 1960s, centered around LFTs (Letras Financeiras do Tesouro)—bonds tied to the policy rate, which we will argue that offer a “free lunch” to financial institutions. This paper explores how the dominance of LFTs distorts incentives, weakens the transmission of monetary policy, and locks the system into a suboptimal equilibrium.

Modern monetary policy relies heavily on managing expectations. Central banks aim to anchor inflation expectations through forward guidance and interest rate adjustments. In most economies, market participants internalize the conse-

quences of interest rate hikes, which typically reduce the value of fixed-income assets on their balance sheets. Behavioral economics has shown that incentives shape expectations (see, e.g., Azriale *et al.* 2018 [1], Gachter *et al.* 2025 [2] or Kamienica 2012 [3]). As well as in real life, as seen in the cases of manipulation of LIBOR (House of Commons 2014 [4]) or the forex felony charges by five major banks in early 2010s (DOJ 2015 [5]).

When participants anticipate personal losses from higher rates, they are more likely to align their expectations with policy goals. In Brazil, however, this mechanism is inverted, or at least severely compromised. Due to the structure of public debt, banks often benefit from rate hikes, facing no downside risk. This undermines the credibility and effectiveness of monetary policy.

The concept of an Evolutionarily Stable Strategy (ESS, Smith and Price (1973) [6]) helps explain why this system persists. In Brazil's financial ecosystem, any bank that avoids post-fixed bonds risks underperforming its peers. As a result, alternative strategies are not viable, and the system remains locked in a stable but inefficient equilibrium. This lock-in effect explains why endogenous change is unlikely. The initial conditions that justified the creation of this type of instrument in the 1960s no longer apply, yet the strategy remains dominant due to its self-reinforcing nature.

When we look at inflation, we see that it is now a global phenomenon. Inflation per se is not a bad thing, excess of it is. Some countries, in this century, have experienced deflation, the opposite of inflation, which is also not a good thing, as it is a symptom of bad economic health. From this we can see that, out of all the economic phenomena, inflation is one of the most complex. It emerges as a result of interactions between all agents: producers and consumers; local and international; financial and real sector; and so on. After all, inflation is a tool to distribute wealth in society and, if it runs amok, it could cause real damage to the system.

With this in mind, in this paper we will investigate a small set of inflation properties, and we will particularly analyze the interaction between central banks and inflation. Furthermore, we will look at the case of Brazil and the relationship between local inflation and the central bank's response to it. In this sense, we will look at a few other countries, understand how these relations work in each of them and then compare that to what is observed in Brazil. Our main question is why, in Brazil, the central bank needs to use brute force, that is, large amounts of real interest rate, to control the emergence of inflation in the Brazilian economy. Again, our exercise is a comparative one, so, as we will see, over the last two decades the Banco Central do Brasil (BCB) has pursued a mandate to control inflation and, to do so, it uses a state-of-the-art tool, but it needs to apply relatively more force, meaning real interest rate, to keep inflation within its mandated boundaries.

There are, of course, many current explanations as to why the Brazilian economy needs such large real interest rates to control inflation. Large in relative terms, as we will see that, comparatively, the real interest rates practiced in Brazil are high for international standards. Why is it this way? Many explanations arise. For example, many works, such as Tiberto and Mendonça (2023) [7], Cevik and

Miryugin (2023) [8], Gaglione (2017) [9], Gonçalves, Mauro and Genta (2025) [10] attribute this situation to the fiscal imbalance of the Brazilian central government. Others will say that the Brazilian economy has a large portion of its credit concession made through subsidized credit that does not follow the central bank's policy interest rate. And the list goes on. To name only one more candidate, Brazil has a history of inflation inertia and some will argue that this is why the BCB has problems to control domestic inflation. All these explanations seem reasonable at first glance. But there are those who will say that this characteristic is not an exclusive attribute of the Brazilian economy. For those who are not yet convinced and still looking for an explanation, this work offers a new approach. We will investigate monetary policy transmission mechanisms and show that a main one is missing in the Brazilian economy.

We don't intend to disagree with the traditional explanation of the singularities of Brazilian's inflation. However, we defend that the explanation also needs to focus on the importance of monetary policy transmission and how this mechanism is different in Brazil. We will notice that, among the countries analyzed, Brazil stands out for being the one that relies the most on the post-fixed interest rate bond emission, LFTs (Letra Financeira do Tesouro).

This type of bond was introduced in Brazil during the times of high inflation. In 1964, ORTNs (Obrigação Reajustável do Tesouro Nacional)—which has similar characteristics as LFTs—were introduced into the Brazilian market. Since there was a huge risk in carrying Brazilian government bonds during that period, ORTNs were created to reassure market participants that their investment was secure. It made sense at the time, but as time passed and the Brazilian inflation converged to a more globalized level, this type of bond became a “free lunch”. Although Economics, in theory, doesn't like “free lunches”, there is no better way to describe LFTs. As it is a post-fixed type of bond, its value increases every day until the day of its maturity. It accrues interest daily. Tomorrow its value will be today's nominal value plus the daily accrued interest rate. The question for this type of asset is not if it loses nominal value, but how fast its nominal value will increase. When the central bank changes the policy interest rate, it directly impacts LFTs' yield. If it reduces the policy rate, the nominal value of the LFT will increase at a slower pace. When the opposite happens, the value of the LTF does something that's seems unnatural, it does not lose value as a normal bond would do, it keeps increasing its nominal value—now at a faster pace. As we will see, this difference is relevant, and it needs to be considered as a potential threat to the monetary policy mandate the BCB pursues.

This work will follow the subsequent steps: in Section 2 we'll discuss the traditional monetary mechanism transmission tool. After that, in Section 3, we will focus on the transmission mechanism via commercial banks' balance sheet, see recent examples of the impacts that changes in policy interest rates have on US banks and compare that to what is observed in Brazil for similar scenarios. This will show how the presence of LFTs in the Brazilian bond market distorts the monetary policy transmission mechanism. Finally, in Section 4 we'll take another

look at LFTs and try to develop a better understanding of how its presence affects the Brazilian ecosystem and the incentives of its participants.

2. Mechanisms of Monetary Policy Transmission

It is widely accepted that, at least in the short run, monetary policy influences the real economy (BERNANKE; GERTLER, 1995 [11]). However, complexity arises when we ask how this influence occurs—that is, through which mechanisms monetary policy affect real economic activity.

Tavares *et al.* (2013) [12] identify five main transmission channels: exchange rates, asset prices, credit, expectations, and risk-taking. Bernanke and Gertler (1995) further elaborate on two additional channels: the balance sheet channel and the bank lending channel. While definitions may vary across studies, the core idea remains consistent: monetary policymakers use short-term interest rates to influence the cost of capital and spending decisions, thereby affecting aggregate demand and output.

For the purposes of this paper, the balance sheet channel is of particular interest. We begin with a brief explanation of this channel, then an overview of the others, and return to the balance sheet channel in greater detail in subsequent sections.

The balance sheet channel emphasizes the impact of monetary policy on the financial positions of banks and borrowers. Through this channel, monetary policy affects variables such as banks' net worth, cash flows, liquidity, and asset prices. The economic monetary theory suggests that tighter monetary policy weakens banks' balance sheets. This occurs because market participants often need to obtain short-term debt, which becomes more expensive under restrictive conditions. Additionally, higher interest rates tend to reduce the market value of bonds and other financial assets they may hold. Although exceptions exist, in most cases, rising interest rates negatively affect nominal asset values (Bernanke; Gertler, 1995). Consequently, monetary tightening can deteriorate banks' balance sheets, making borrowing more difficult and costly. As we will demonstrate throughout this work, this important channel has not functioned effectively in Brazil.

Another key transmission mechanism is the expectations channel, which plays a central role in modern monetary policy frameworks—particularly in inflation-targeting regimes and forward guidance strategies. This channel operates through the influence of monetary policy on the expectations of households, firms, and financial markets regarding future economic conditions. It can affect variables such as long-term interest rates, inflation expectations, output, and employment. The credibility of the central bank is crucial in this context. A credible central bank can anchor inflation expectations, reducing the social cost of bringing inflation back to target by lowering uncertainty and stabilizing price-setting behavior (Woodford, 2003 [13]; ECB, 2023 [14]). However, this channel presents challenges: expectations are difficult to measure—proxies such as Brazil's *Relatório Focus* are commonly used—and credibility can be fragile.

The asset price channel refers to the influence of monetary policy on the prices

of equities, real estate, bonds, and exchange rates. A tightening of monetary policy tends to lower equity prices, as higher interest rates reduce the present value of future corporate earnings. This decline in asset values can reduce household wealth and, consequently, consumption via the wealth effect. Real estate prices are also negatively affected, as higher interest rates increase financing costs and reduce demand for residential and commercial properties (Woodford, 2003). If these assets are used as collateral, their devaluation can also raise credit risk and further suppress demand.

In addition, the exchange rate channel impacts inflation when local currency appreciates in response to monetary tightening, as higher domestic interest rates attract capital inflows. This appreciation reduces exports' competitiveness and makes imports cheaper, thereby dampening aggregate demand. As noted by the ECB (2023) and IMF (2006) [15], the exchange rate channel can also influence consumption and investment through wealth, collateral effects and international tradable goods. In Brazil, this channel plays a particularly significant role in the transmission of monetary policy (Tavares *et al.*, 2013; Ayres *et al.*, 2019 [16]).

While the balance sheet channel appears to be absent in Brazil, what about the credit channel?

Elias and Guimarães (2024) [17] investigated the monetary policy pass-through to credit before 2020 and found that the credit channel does operate—but primarily for non-earmarked credit. Their study, “This is Not America: The Credit Channel of Monetary Policy in Brazil,” compares Brazil to the United States. In the U.S., they observed a pass-through greater than 1:1, meaning that a 1% increase in the policy rate led to more than a 1% increase in lending rates. However, when applying the same methodology to Brazil, they found a limited pass-through, below 1:1. This suggests that while the credit channel exists in Brazil, it is weaker than in the U.S.—a matter of degree, not presence. In contrast, we argue that the balance sheet channel is effectively nonexistent in Brazil.

Leigh and Xu (2025) [18] extended this analysis to the post-2020 period. They estimated the strength of monetary policy transmission to bank lending rates using bank-level data and found differentiated pass-through levels:

Market-based rates: ~70% pass-through over four months;

Government-directed credit rates: ~20% pass-through;

By loan type:

Payroll-backed loans: ~40%;

Working capital loans: ~80%;

By bank size: Larger banks showed stronger pass-through.

Their findings indicate that corporate loans have become more responsive since 2020, contributing to an overall increase in pass-through. They also highlight that transmission is constrained by idiosyncratic factors, and that the 70% pass-through stabilizes after four months. According to their estimates, to raise average bank lending rates by 1%, the Central Bank would need to tighten policy by approximately 1.4%.

Interestingly, among Brazil's five largest banks, there was near-complete pass-through, except for payroll-deducted loans. Even more notable is the lack of significant difference in pass-through between fintech lenders, public banks, and private commercial banks. One could argue that this fact contradicts the prediction that more competition would result in lower interest rates for households and it certainly points out that our argument about ESS is relevant. More about this later.

3. Balance Sheet as a Mechanism of Monetary Policy Transmission

As discussed in Section 2, the balance sheet mechanism is theoretically significant—and in practice, it proves to be just as important. In recent years, we've seen this mechanism in action during periods of monetary policy tightening. A compelling example is provided by Jiang *et al.* (2024) [19] in their study "Monetary Policy Tightening and US Bank Fragility in 2023". The authors closely examine the period from Q1 2022 to Q1 2023, during which the federal funds rate rose sharply from below 0.5% to over 4%.

Their analysis of U.S. banks' balance sheets during this time reveals a critical insight: not all assets were marked to market. Many were classified as "held to maturity," meaning they were not subject to immediate revaluation on financial statements. Nevertheless, the authors estimate an average 10% decline in asset values due to mark-to-market adjustments—translating to approximately \$2 trillion in losses triggered by rising interest rates.

This context helps explain the fragility exposed in several commercial banks, some of which ultimately failed. The most prominent example is Silicon Valley Bank (SVB), whose collapse illustrates the core argument of this section: when interest rates rise, commercial banks should be in trouble. However, as we will soon explore, this dynamic did not play out the same way in Brazil.

SVB failed on March 10, 2023, following a monetary tightening cycle that began in March 2022. The reason is straightforward: higher interest rates reduce the market value of bank assets. As asset values fall relative to liabilities, banks become more susceptible to instability. According to Jiang *et al.* (2024), this occurs through two main channels:

First, fundamental insolvency: If liabilities exceed asset values, the bank becomes insolvent.

And second, depositors run: Uninsured depositors, fearing losses, may withdraw funds *en masse*, triggering failure.

As we saw above, during this tightening period, between March 2022 and March 2023, the federal funds rate rose from 0.08% to 4.57%, causing significant declines in the value of long-duration assets such as Treasury bonds and mortgage-backed securities. Overall, about two-thirds of U.S. banks experienced negative balance sheet effects, with an average asset value decline of 10%, roughly \$2 trillion in losses. This is a dangerous situation for commercial banks. This matters

because uninsured depositors may flee at the first sign of trouble, even before a bank becomes technically insolvent. For further reading on this topic, see Hannan and Berger (1991) [20], Neumark and Sharpe (1992) [21], Drechsler, Savov, and Schnabl (2017) [22], Egan, Matvos, and Hortacsu (2017) [23], Egan, Lewellen, and Sunderam (2022) [24], and Wang *et al.* (2022) [25].

In the case of SVB, the situation was severe. While the average asset decline was 10%, SVB's assets fell by 15.7% over the tightening period. Other banks affected by the balance sheet mechanism include Signature Bank, Silvergate Bank, and First Republic Bank. First Republic, with over \$200 billion in assets, was acquired by JPMorgan Chase in May 2023. Signature Bank, with around \$110 billion in assets, was mostly acquired by Flagstar Bank after its failure in March 2023. Silvergate Bank, which had ties to crypto assets, held about \$11 billion in assets before its collapse.

Now let's take a look at this dynamic in Brazil, where there were two tightening cycles since 2020. In the first tightening cycle (Q3 2020 to Q3 2023), Brazil's Selic rate rose from 2% to 13.75%. Yet, an investment in LFTs at the beginning of this period would have yielded a cumulative return of nearly 17% with virtually no risk. From a monetary policy perspective, this means the balance sheet mechanism was not only absent—it worked in reverse.

The second cycle (Q2 2024 to Q1 2025) saw the Selic rise from 10.5% to 14.25%. Again, LFTs did not lose value. An investment at the start of this period would have generated a return of nearly 10%. This highlights a critical issue: in Brazil, the balance sheet channel of monetary policy transmission is effectively neutralized by the structure of government bond.



Source: authors.

Figure 1. Taxa Selic during tightening period (up) and Assets prices (bottom) of a simulated LFT bond. First period (2020q3-2022q3) left.

This situation is not new. It started with the establishment of the ORTN in the 1960s when Brazil began a long-standing tradition of relying on what could be described as “free lunch” type of bonds. By the end of 2024, the total outstanding debt of the Brazilian central government reached R\$7.3 trillion (RAD 2024, Tesouro Nacional [26]). Of this total, 46.3% consisted of LFTs—bonds indexed to floating interest rates (see left side of **Figure 1**; LFT = Taxa Flutuante).

The majority of these LFTs are held by the financial sector. Investment funds and financial institutions together account for more than two-thirds of the total: 33.8% held by financial institutions and 33.6% by investment funds.

At the beginning of the 21st century, Brazil’s debt structure looked quite different. A significant portion was external debt—denominated in foreign currencies. This type of debt accounted for over 40% of the total at the time but has since declined to around 5%.

In contrast, the share of debt indexed to floating interest rates has remained relatively stable. In 2002, LFTs made up about 40% of the debt. Although this share declined through 2013 and 2014, it began to rise again and now exceeds 46%, indicating a persistent reliance on post-fixed rate instruments.

For purpose of clarity, let open a parenthesis and take look at the definition of different types of bonds. The post-fixed bonds are debt instruments whose returns are tied to a reference interest rate (such as the Selic rate in Brazil). The bondholder receives a yield that adjusts periodically, the LFTs are daily adjusted, based on changes in the reference rate (See **Figure 2**). They offer predictable linkage to a policy rate, often with less volatility than other instruments. The floating-rate bonds adjust their interest payments based on market rates (e.g., as was the LIBOR), typically with more frequent resets and less predictability than post-fixed bonds. The classic fixed-rate bonds pay a predetermined interest rate throughout the life of the bond, regardless of market fluctuations, if held to maturity. This provides certainty but exposes investors to interest rate risk if rates rise.

Coming back to our main discussion, the high share of post-fixed rate bonds in Brazil’s public debt is a distinctive feature of its financial landscape. While other countries also issue similar instruments, their role in monetary policy transmission is limited due to their relatively low share in total debt.

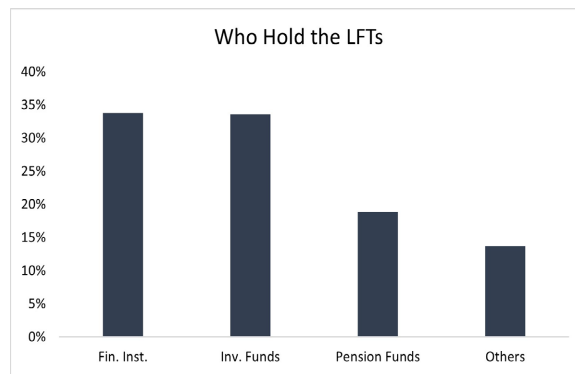
In Colombia, for example, there is the TES Clase B Tasa Variable, a bond with a post-fixed remuneration structure. However, its share in the total debt stock is modest, historically ranging between 5% and 7%. In Mexico, the Bondes D—which is also post-fixed and indexed to a weighted interbank interest rate—has historically accounted for less than 10% of the federal debt.

In the United States, Floating Rate Notes (FRNs) serve a similar function. Their share of total debt has grown slightly, from around 6% - 7% in the early 2020s to approximately 9% by the end of 2024.

In contrast, Brazil’s reliance on post-fixed bonds—particularly LFTs—stands out as an anomaly. With over 46% of its debt indexed to floating rates, Brazil exhibits a unique dependence on this type of instrument, which has significant implications for monetary policy.

To examine in detail the relationship between the Selic rate and the balance sheets of Brazilian banks, we present a correlation matrix for the relevant time series. Our analysis focuses on the five largest publicly traded banks in Brazil, which together account for over 80% of the total equity among banks listed on the Brazilian stock exchange.

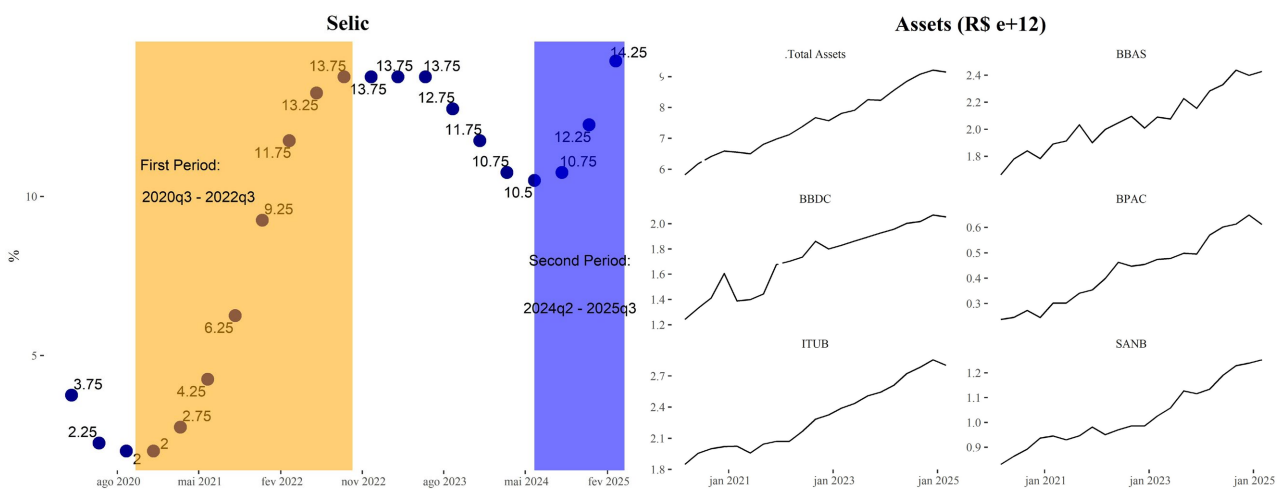
Figure 3 illustrates that the correlations between the Selic rate and the banks' balance sheet figures are both positive and statistically significant. At the top of the figure, we show the correlations for the entire period from Q3 2020 to Q1 2025, the most recent quarter with available data. The bottom panel of the figure isolates the quarters during which monetary tightening occurred. The results remain consistent: correlations are still positive and statistically significant.

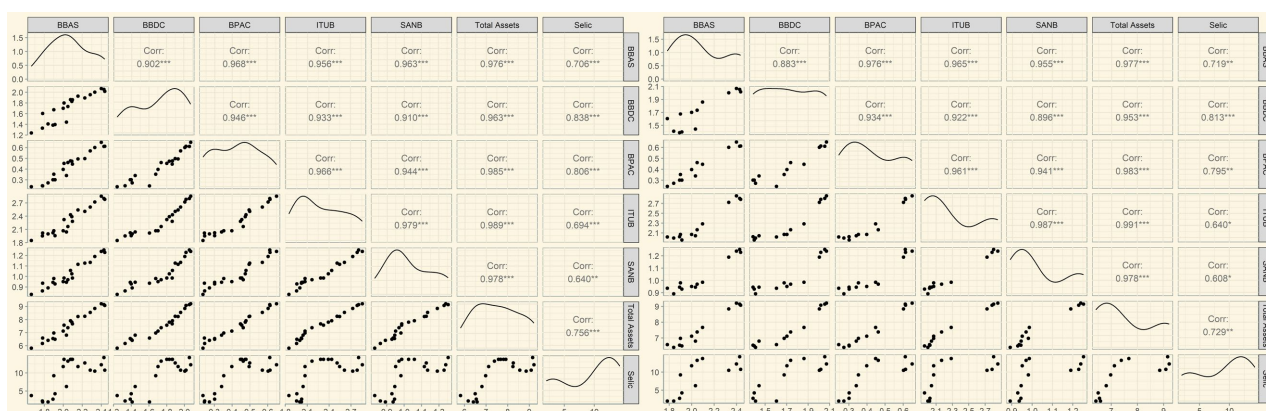


Source: RAD 2024, Tesouro Nacional.

Figure 2. Share of holders of the LFTs (right).

Among the individual banks, SANB shows the lowest correlation with the Selic rate in both periods, with values below 0.650. In contrast, BBDC consistently exhibits the highest correlation, exceeding 0.800. When aggregating the balance sheets of all five banks, the overall correlation with the Selic rate remains strong, above 0.700, regardless of the period considered. In sum, in Brazil there is no negative impact in balance sheets due the tightening monetary policy.





Source: <https://www.rad.cvm.gov.br>.

Figure 3. Correlation matrix between the Assets of Banks in Brazil and the basic interest rate (Selic). Bottom left correlation considering all periods. Bottom right consider only periods of tightening monetary policy.

4. Revisiting the Role of LFTs in Brazilian Monetary Policy

As we have seen throughout this work, the existence of “free lunch” bonds—specifically the LFT—introduces significant distortions into Brazil’s monetary policy transmission system. While in most countries a tightening of monetary policy typically results in losses on banks’ balance sheets, in Brazil the opposite occurs. More concerning, however, are the distorted incentives this structure creates.

Consider this: in today’s monetary policy framework, expectations play a central role. Central banks operate by managing expectations—particularly inflation expectations—through forward guidance and interest rate signals. In most countries, market participants understand that if interest rates rise, their balance sheets may suffer due to mark-to-market losses on their assets. This creates a feedback loop that reinforces the effectiveness of monetary policy.

Behavioral economics experiments have repeatedly shown that incentives matter. When participants are asked to report expectations—such as inflation forecasts—they do so with an eye on how those expectations might affect their own financial outcomes. In Brazil, however, this incentive structure plays against the monetary policy. When market participants express their expectations, they face no adverse consequences if interest rates rise. On the contrary, due to the structure of LFTs, banks often benefit from rate hikes. This creates a perverse incentive: the monetary policy transmission mechanism does not penalize inflationary expectations. In short, the payoffs in Brazil’s monetary game are the opposite of what theory would predict (Kamenica 2012, Azriale *et al.* 2018, Gachter *et al.* 2025).

This brings us to the concept of an Evolutionarily Stable Strategy, ESS (Smith and Price (1973), Cowden (2012) [27]). How could this situation ever change? By definition, an ESS is a strategy that, once adopted by a population, cannot be out-competed by any alternative. If a new bank were to enter the market and avoid loading its balance sheet with post-fixed bonds, it would likely underperform its peers in terms of returns. In this monetary ecosystem the result is a stable but suboptimal equilibrium.

Let's look at this point with a little more. As we saw, an Evolutionarily Stable Strategy is a concept from game theory and evolutionary biology. But in finance, it could describe a strategy that, once widely adopted, cannot be outcompeted by a small group of deviators because those deviators would perform worse. In Brazil, banks overwhelmingly hold post-fixed bonds (e.g., Tesouro Selic, CDBs linked to CDI). This has become an ESS due to structural, regulatory, and competitive dynamics. In the Brazilian banking sector, the widespread strategy of holding post-fixed bonds has become an Evolutionarily Stable Strategy (ESS), meaning that once adopted by the majority, any deviation from it leads to competitive disadvantages. Banks primarily fund themselves through liabilities that are also post-fixed, such as savings accounts and CDBs, so aligning assets with liabilities minimizes interest rate risk. A bank that deviates by holding pre-fixed bonds exposes itself to asset-liability mismatches, especially in a volatile interest rate environment, where rising rates would increase its funding costs without a corresponding rise in asset returns, eroding profitability. Additionally, post-fixed bonds are more liquid and widely accepted in the Brazilian financial system, making them easier to trade or use as collateral. Deviating from this norm could reduce a bank's liquidity and increase operational risk. Regulatory frameworks, including stress testing and capital adequacy requirements, also favor post-fixed instruments due to their predictable behavior under rate changes, meaning that deviating banks may face higher compliance costs or need to hold more capital. Performance benchmarking further reinforces the strategy: banks that stick to post-fixed assets tend to perform better during rate hikes, while deviators risk underperformance, affecting investor confidence and internal incentives. Finally, most banking products and client expectations are built around post-fixed instruments, so deviating would misalign the bank's asset base with its offerings, reducing competitiveness. These factors collectively create a lock-in effect, where the costs of deviation are high enough to keep banks committed to the post-fixed strategy, making it evolutionarily stable.

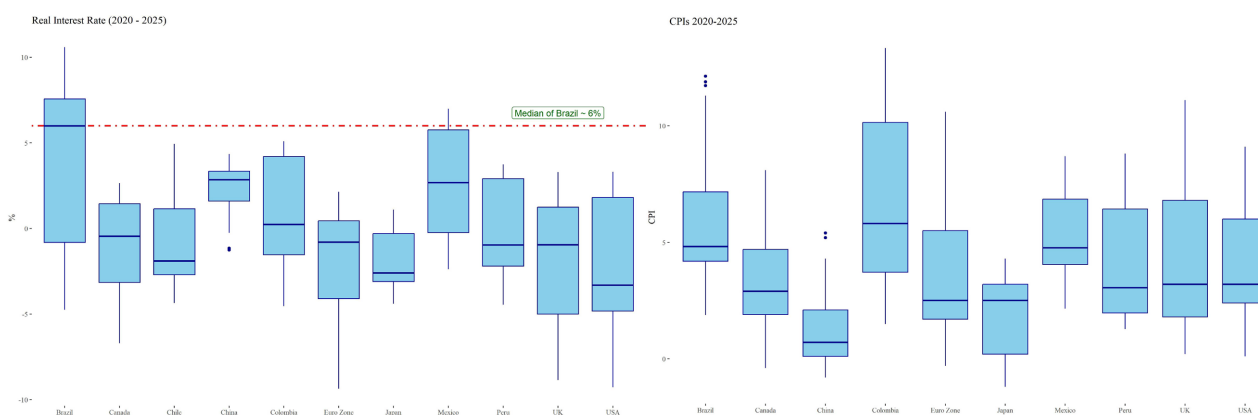
Brazil's real interest rates are among the highest in the world. The Central Bank of Brazil (BCB) has had to apply disproportionately strong monetary tightening to bring inflation and expectations under control. While the system is in equilibrium, it is not an efficient one. The initial conditions matter: when post-fixed bonds were introduced in the 1960s, they may have served a purpose. Today, however, there is little justification for their continued dominance. Yet the system is locked into this structure—it will not change endogenously because it is an ESS.

We have also observed that inflation tends to emerge and recede across countries within similar timeframes. Many central banks have tightened monetary policy in recent years, but none to the extent of the BCB. In the U.S., for example, the federal funds rate rose from near zero to over 4% between Q1 2022 and Q1 2023. This has had a significant impact on bank balance sheets, with asset values declining by over \$2 trillion due to mark-to-market losses. In Brazil, by contrast, the Selic rate increased from 2% to over 14% between Q3 2020 and Q3 2022. Yet in-

stead of balance sheet contraction, Brazilian banks experienced an aggregate expansion of nearly 20%. This does not mean that the LFTs must be eliminated entirely. If their issuance were limited to retail investors through programs like Tesouro Direto—which aims to promote a savings culture—there would be no major issue. The problem arises when financial institutions, particularly banks, heavily invest in these instruments. By the end of 2024, LFTs accounted for approximately 46% of the total federal debt in circulation. This is detrimental to the effectiveness of monetary policy transmission.

The consequence of this particular monetary ecosystem is a higher real interest rate than the international average. As shown in **Figure 4** (right), Brazil's Consumer Price Index (CPI) follows a pattern similar to other countries CPIs, indicating that our inflation regime aligns with global trends—experiencing relatively high and low inflation periods in tandem with others and we observe that both the amplitude and median of Brazil's inflation are not significantly different from the group average.

However, when we examine the real interest rate, **Figure 4** (left), a notable divergence emerges. Brazil's median real interest rate exceeds 6%, a level that only Mexico has briefly reached for a couple of months. This means that for over 30 months since 2020, Brazil has maintained a real interest rate higher than the maximum observed in the other countries.



Source: Bloomberg.

Figure 4. Real interest rate and CPI analysis. Real interest left and CPI at the right.

Again, when we look at the conventional available explanation for why this happens we are not satisfied. There must be something in the Brazilian monetary environment that is particular to it. The dependence of post-fixed type of bonds is peculiar to Brazil and we think this could be the piece of puzzle that is messing to better explain the Brazilian real interest rate problem. This is the key difference of Brazil: the widespread use of LFTs, because this significantly weakens the monetary policy transmission. In short, in Brazil the balance sheet channel—a crucial pathway through which interest rate changes affect the economy—does not function effectively. As a result, the BCB must apply more aggressive monetary tight-

ening than is typically observed in peer countries.

Table 1. Summary of financial conditions during tightening periods.

Relatório de Estabilidade Financeira (REF)	Situation
2020q4 REF Volume 19 N.2	“The measures taken by the federal government, the CMN, and the BCB were important to preserve the solvency and resilience of the banking system in addressing the adverse effects of the pandemic... and allowed the National Financial System (SFN) to navigate the acute period of stress caused by Covid-19 with consistently low liquidity risk.” (pg. 9)
2021q2 REF Volume 20 N.1	“The liquidity level of banks remained adequate throughout 2019, and the actions promptly announced and implemented by the CMN and the BCB ensured the necessary liquidity for the proper functioning of the National Financial System (SFN) in the face of the stress and effects caused by Covid-19.” (pg.9)
2021q4 REF Volume 20 N.2	“Analyses conducted by the BCB indicate that there is no significant risk to financial stability. Capital stress tests show that the banking system is prepared to withstand all simulated macroeconomic shocks.” (pg. 5)
2022q2 REF Volume 21 N.1	“Analyses conducted by the BCB indicate that there is no significant risk to financial stability. Capital stress tests demonstrate that the banking system is prepared to withstand all simulated macroeconomic shocks. The National Financial System (SFN) maintains provisions that are adequate for the expected level of credit losses, as well as comfortable levels of capitalization and liquidity.” (pg. 5)
2022q4 REF Volume 21 N.2	“Analyses conducted by the BCB indicate that there is no significant risk to financial stability. Capital stress tests demonstrate that the banking system has adequate resilience. The National Financial System (SFN) maintains provisions that are appropriate for the expected level of losses, along with comfortable levels of capitalization and liquidity.” (pg. 5)
2023q2 REF Volume 22 N.1	“Analyses conducted by the BCB continue to indicate that there is no significant risk to financial stability. Capital and liquidity stress tests demonstrate that the banking system remains resilient. The National Financial System (SFN) continues to show comfortable levels of capitalization and liquidity, as well as provisions that are adequate for the expected level of losses.” (pg. 5)
2024q2 REF Volume 23 N.1	“The Central Bank considers that there is no significant risk to financial stability. The National Financial System remains comfortably capitalized and liquid, with provisions adequate to the level of expected losses. Moreover, capital and liquidity stress tests demonstrate the robustness of the banking system.” (pg. 5)
2024q4 REF Volume 23 N.2	“The Central Bank considers that there is no significant risk to financial stability. The National Financial System remains comfortably capitalized and liquid, with provisions adequate to the level of expected losses. Furthermore, capital and liquidity stress tests demonstrate the robustness of the banking system.” (pg. 5)
2025q2 REF Volume 24 N.1	“The Central Bank considers that there is no significant risk to financial stability. The National Financial System remains comfortably capitalized and liquid, with provisions adequate to the level of expected losses. Furthermore, capital and liquidity stress tests demonstrate the robustness of the banking system.” (pg. 5)

Source: <https://www.bcb.gov.br/publicacoes/ref>.

So far, we have examined the balance sheets of Brazilian banks from a rather naïve perspective. One could argue that a more thorough analysis is necessary before drawing any conclusions about the solidity of banks in Brazil during monetary tightening periods. We agree—and fortunately, this type of research is conducted twice a year by the Central Bank of Brazil (BCB), with results published in the Relatório de Estabilidade Financeira (REF).

During the recent tightening cycle, nine editions of the REF were published. In none of them did the increase in the basic interest rate produce a significant impact on financial stability. A typical statement found in these reports reads:

“Analyses conducted by the BCB indicate that there is no significant risk to financial stability. Capital stress tests demonstrate that the banking system has adequate resilience. The National Financial System (SFN) maintains provisions that are appropriate for the expected level of losses, along with comfortable levels of capitalization and liquidity.”

This particular excerpt comes from the REF published in Q4 2022, marking the end of the most intense tightening cycle since 2020. Even after the basic interest rate rose from 2% to over 13%, financial stability remained intact.

In **Table 1**, you can find statements from all REF editions published during the periods relevant to our analysis. The findings presented in these reports paint a consistently positive picture: Brazil’s financial system is portrayed as robust, with stress tests revealing no significant risks—even during periods when the Central Bank was actively contracting the economy and interest rates were surging.

Is this a good thing? That depends on your perspective.

From the viewpoint of the regulator—whose mission is to ensure the soundness of financial institutions—this is excellent news. It suggests that the system is resilient and that regulatory efforts are effective.

However, from the perspective of the monetary authority, whose mandate is to control inflation, the picture is more complex. The REF results suggest that the balance sheet channel of monetary policy may not be functioning in Brazil. Without this transmission mechanism, the BCB must rely more heavily on other channels—such as the credit channel, the exchange rate channel, and others—to achieve its inflation targets.

5. Conclusions

As we saw, the Brazilian monetary policy framework, shaped in part by the widespread use of post-fixed bonds, presents a unique and problematic case in the global financial landscape. While these instruments may have served a purpose in the past, their continued dominance has created a structural misalignment between monetary policy objectives and financial sector incentives. Unlike in other economies, where interest rate hikes impose discipline through balance sheet effects, Brazil’s financial institutions are often rewarded for holding assets that benefit from such tightening.

This misalignment undermines the effectiveness of monetary policy transmission. The concept of an Evolutionarily Stable Strategy helps explain why this equilibrium persists: any deviation from the dominant strategy—namely, loading balance sheets with post-fixed bonds—results in competitive disadvantage. As a result, the system is locked into a suboptimal but stable configuration.

International comparisons further highlight the anomaly. While U.S. banks faced significant stress and even collapse under moderate monetary tightening, Brazil-

ian banks expanded their balance sheets during a much more aggressive cycle. This apparent resilience masks a deeper inefficiency: the absence of meaningful transmission of monetary policy through the financial sector.

Restricting the use of LFT within the financial sector could help realign incentives and improve the effectiveness of monetary policy and brings Brazil ecosystem closer to what happens in the rest of the world. After all, Brazil has demonstrated its capacity for innovation in areas such as digital payments and financial inclusion. It is time to bring that same spirit of modernization to its monetary policy architecture. The continued reliance on instruments designed for a different era is no longer justifiable in a dynamic and globally integrated economy.

A portion of caution could also be needed. Yes, restricting the use of LFTs within the financial sector could help realign incentives and enhance the effectiveness of monetary policy, bringing Brazil's ecosystem closer to international norms. However, any transition away from post-fixed bonds must be approached with caution. The entrenched nature of these instruments means that abrupt changes could pose short-term financial stability risks and disrupt established market dynamics. Policymakers should therefore design a gradual and well-communicated transition strategy, ensuring that the shift strengthens monetary policy transmission without undermining confidence in the financial system.

Disclaimer

This paper should not be reported as representing the views of any institution the authors are affiliated with. The views expressed are those of the authors only.

Conflicts of Interest

The authors declare no conflicts of interest.

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