Extraordinary Spread Auctions under Volatility

1. **During periods of high volatility in the financial market, whenever there is uncertainty regarding key financial indicators, such as interest rate levels and FX-rate, the price of important financial assets can strongly fluctuate, including sovereign securities.** Under such circumstances, the National Treasury may launch simultaneous buy and sell auctions, aiming at providing liquidity to investors and to facilitate price discovery of the correct parameters at that point. This strategy has been used in many occasions, referred to the 2008 events trailing back from the Lehman Bros and the financial turmoil, as well as in 2013 and 2014, when the Brazilian local market faced instability with the prospects of the Federal Reserve (FED) anticipate the withdrawal of the monetary stimulus in place.

2. **It is worth mentioning that in contrast with others countries, the interest rate future market is much more liquid than the public bonds markets, and is also the reference for pricing.** Almost all fixed-income market relies on DI future market, which is basically a market for swap contracts between fixed and floating rate. Market practice transacts fixed rate bonds spreads over the future DI contract with similar maturity. The purchase operation of a fixed bond security, associated with a purchase of a DI future contract with similar terms results in the investment known as "papel casado" which gives the investor exposure to floating interest rate, unlike what happens when the purchase of the security is not associated with the operation in the interest rate future market.

3. **It happens that in times of volatility, this market is widely used to reverse operations between fixed positions and floating positions in order to hedge against an increase in future interest rate.** Aiming to reduce indirectly the pressure on this market, essential for the pricing of fixed rate securities, the National Treasury has chosen to reduce the supply of bonds, to cancel some auctions and finally act on the repurchase. This last measure brings comfort to holders and balances demands by investments in floating interest rates.

4. **The pronounced volatility observed in the DI future market as of Sep-15, was correlated to uncertainties coming from both political and economic scenarios justified the National Treasury intervention through extraordinary auctions in two sovereign markets: fixed rate (LTN, NTNF) and inflation CPI linked (NTNB), although the latter was relatively well behaved.** The current outlook regarding the Brazilian economy and other countries were associated to dysfunctional behavior of some key market parameters. As such, the National Treasury stepped in and used its instruments to provide the correct price references for market participants and to soften the excess of volatility translated into the abrupt increase in interest rates. In addition, that contributed to diminish the risk of interest rate placed on the market (DV01).

5. **Those actions were presented in the 2015 Annual Borrowing Plan (ABP), where the Treasury details the debt strategy for the Federal Public Debt (FPD).** In that Plan, the Treasury projects the debt structure establishing annual targets for its main indicators expressed in bands. In that fashion, under stressful scenario and, with this reaction mechanism under the PAF, the execution of extraordinary auctions aimed to give support and liquidity to public bond market thus contributing to retrieving functionality to this and other related market.

6. **In contribution to this performance, the liquidity cushion was a fundamental element to the public debt management, as a result of the strategy outlined by the Treasury this year, issuing volumes in excess of their need for funding.** The reinforced of National Treasury cash dedicated to the payment of its obligations seeks to give more flexibility to the public debt management and to reduce the excess liquidity in the local banking system .It is worth to mention that strategy does not affect the Net Public Sector Debt (NPSD) nor the General Government Gross Debt (GGGD)[1].

7. **Therefore, the Treasury revamped its ability to act in a jumpy world,** without necessarily raise more funds to conduct simultaneous purchase and sale auctions, as well as the extraordinary auction of floating rate bonds (LFT).

8. **These actions are not conclusive** in the sense that the Treasury will keep monitoring the market and will intercede as soon as it decides to signal the correct market parameters that are circumstantially missing, or are troubled, contributing to the market functioning.

9. **It's important to note, while acting as price taker, there is no point in fixing or determining price references nor affecting its long-lasting trend.** The objective is merely to avoid sharp short-term fluctuations in prices that may hinder markets well-functioning. The idea is to provide last source liquidity to those who are not able to operate in the secondary market.

10. **As of Sep and Oct-15, a series of measures were carried out by the Treasury to accomplish that.** In the first fortnight, despite the abnormal volatility observed in future interest rates, fixed rate auctions were cancelled followed by another cancelled exchange auction for NTNB.

11. **From the second fortnight on, the stronger deterioration in the FX-rate and DI futures markets had led** the Treasury to announce simultaneous purchase and sale auctions in both fixed rate and CPI-linked markets, soothing liquidity and retiring DV01, especially in the long-end of the curve – NTNF.

12. **After the second auction of NTN-F and one of NTN-B , it was observed that there a strong volatility prevailed in many correlated markets, posing investors to increase their risk aversion.** Although the rates were going upward, the lack of liquidity and reduced inclination from investors to position in any direction, there was observed both positive and negative oscillations in the interest rate, reaching a 160 bps of amplitude in a single day (09/24th).

13. **By the end of that day, the National Treasury announced that would conduct a series of buyback and sale simultaneous auctions starting in the following day – 09/25th until 10/02nd , specifically in the NTNF, covering maturities from 2017 to 2025, besides including an extraordinary LFT auction**. The objective was to give predictability over the possibility of retrieving risk from the market under these special circumstances. The fact the sovereign has a liquidity cushion that allows it to stay out of the market for barely 6 months, including even the possibility to operate in the near term to redeem those maturities under more pressure by the market. Adding a LFT auction aimed to fulfill the supply for public securities with low duration, which turned out to have a considerably high demand given the fact that the supply had reduced in the weeks that preceded the program.

14. **The important coordinated signaling given by the MoF and BCB about the possibility of using all available instruments[1] contributed to sooth the relative volatility.** Given the intersection between the FX-rate and interest rate market both institutions acted promptly in each of these markets, within their fields.

15. **The schedule below sums up the extraordinary auctions over the past few weeks, while the financial values are reported in the Annex:**

Table 1 –Extraordinary Auctions Schedule – Sep and Oct-15

SEPTEMBER/OCTOBER 2015						
sun	mon	tue	wed	thu	fri	sat
		1	2	3 ~~SELLING LTN~~ ~~SELLING NTN-F~~	4	5
6	7 Independence of Brazil	8 SELLING NTN-B REDEMPTION NTN-B	9 ~~EXCHANGE NTN-B~~	10 ~~SELLING LTN~~ SELLING LFT	11	12
13	14	15	16	17 SELLING LTN/NTN-F REDEMPTION NTN-F	18	19
20	21 EXT: BUYING NTN-F EXT: SELLING NTN-F	22 ~~SELLING NTN-B~~ EXT: BUYING NTN-B EXT: SELLING NTN-B	23	24 ~~SELLING LTN~~ EXT: COMPRA NTN-F EXT: VENDA NTN-F	25 EXT: BUYING NTN-F EXT: SELLING NTN-F	26
27	28 EXT: BUYING NTN-F EXT: SELLING NTN-F	29 EXT: SELLING LFT EXT: BUYING NTN-F EXT: SELLING NTN-F	30 EXT: BUYING NTN-F EXT: SELLING NTN-F	1 ~~VENDA LTN~~ ~~VENDA NTN-F~~ EXT: BUYING NTN-F EXT: SELLING NTN-F	2 EXT: BUYING NTN-F EXT: SELLING NTN-F	

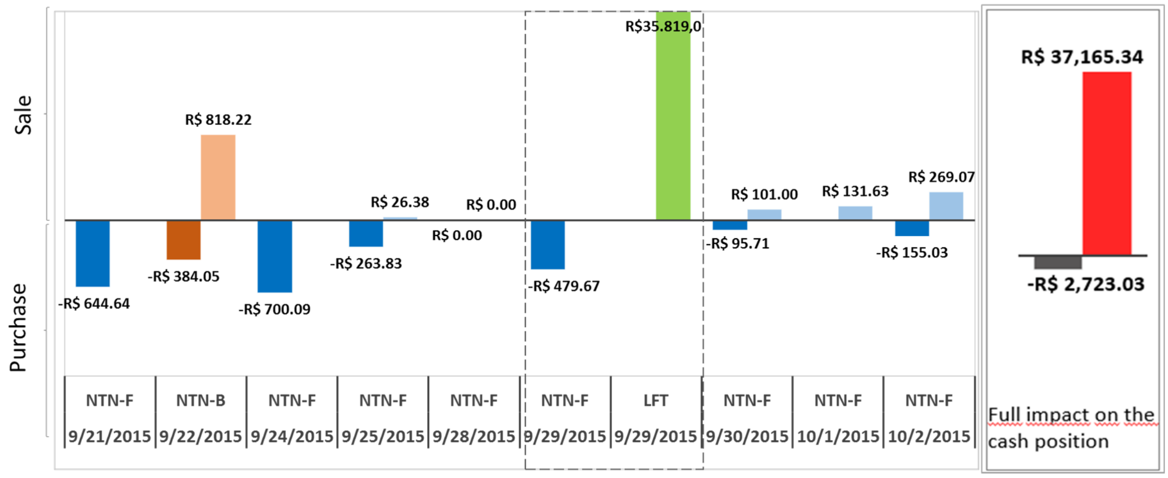
Source: National Treasury

16. **Regarding the impact of these operations in the Treasury's liquidity cushion, there was an overall net issuance of BRL 34.44 bn (sell vs buyback, considering NTNF, NTNB, LFT), thus with a positive impact in the liquidity cushion.** Focusing on the NTNF market, there has been a net repurchase of BRL 1.81 bn, which does not harm the financial position of the Treasury given the fact that traditional

[1] One may recall that FX reseves reached USD 370.44 bn as of 09/25th.

fixed rate auctions are far more substantial in terms of volume. The graph below display the results not only for NTNFs, but also for NTNB and LFT, though the latter does not add DV01 to the market.

Graph 1 – Results of Buyback and Sell Auctions expressed in BRL mn



Source: National Treasury

17. **Although the financial values of these operations are important, the key parameter to assess the program is a metric which reflects the interest rate risk which is retired from the market, which was one of the main objectives of the intervention.** To qualify this point, the results below are expressed in DV01.

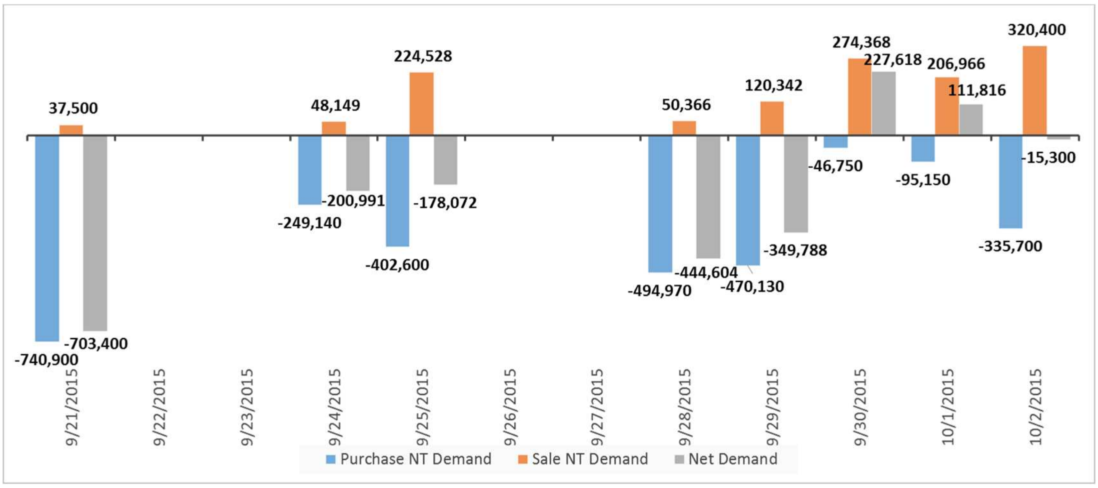
18. **It is widely known that, with the increase in fixed rate issuances, the Treasury transfers part of the market risk to investors.** However, in moments of turmoil, keeping high issuance volumes is equivalent to increase the risk and volatility to the market, whereas the cost of this risk transfer may be high for the Treasury. In that sense, the higher the fixed rate share of the debt, the higher would be the risk in the hands of the public and consequently, the higher the interest rate charged on the Treasury in its roll-over operations.

19. **Quantitatively, DV01 is a risk measure, associated to interest rate volatility, commonly used in the fixed income market.** Its evolution, thus, has direct impact on the demand for those securities.

20. **As pointed earlier, the objective of these operations consisted in stalling the excess of volatility, retiring part of DV01 in the market.** The graph below shows an overall view of the auctions bids, to the fixed rate market (multiple maturities), and from the National Treasury perspective, a snapshot of the demand to buy (redeem) securities, but also to sell (place) them, as well as the net issuance. It is important to note the high demand to buy (redeem) bonds in the first few days,

while the following days showed a reverse on that trend. In fact, there were net issuances in the final days, with higher demand for sales auctions.

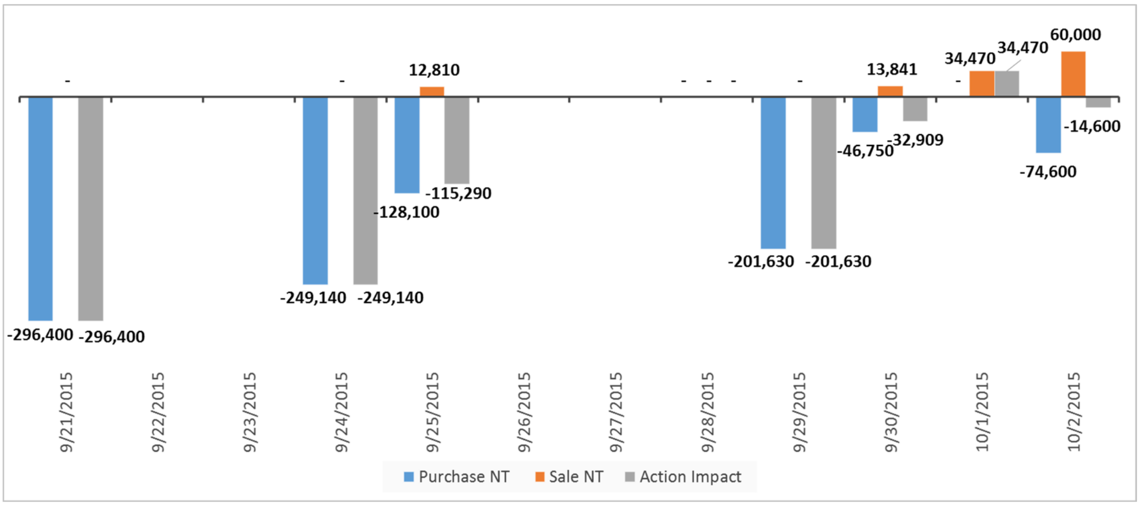
Graph 2– Demand for Buyback and Sell Auctions expressed in DV01



Source: National Treasury

21. **The effective result of these operations, after the proposals scrutiny, led to a net sale in 09/30th , 10/01st and 10/02nd.** The graph below is also expressed in DV01, reflecting the aforementioned events and Treasury's announcement contribution towards stability[2].

Graph 3– Results of Buyback and Sell Auctions expressed in DV01

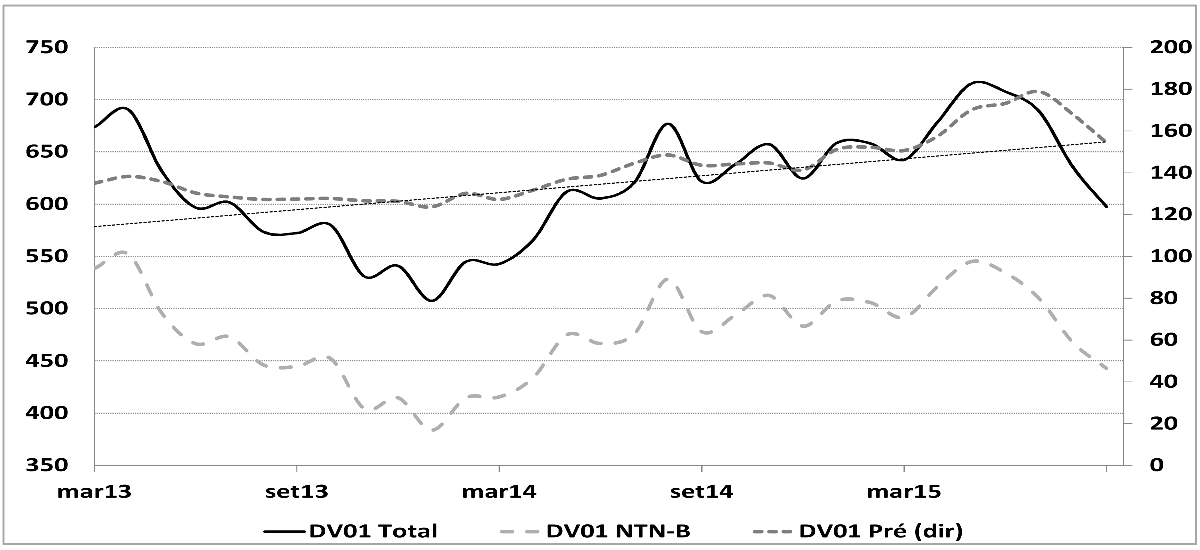


Source: National Treasury

[2] NTNF concentrated the redemptions in 2021,2023,2025, while issuances were centered in 2018 and 2019 on 09/30th , but also adding 2025 on 10/01st and 10/02nd .

22. **The scarcity in the supply side tandem to the repurchase put in place reduced the risk outstanding in the market.** This can be seen in the following graph.

Graph 4 – Evolution in Market DV01

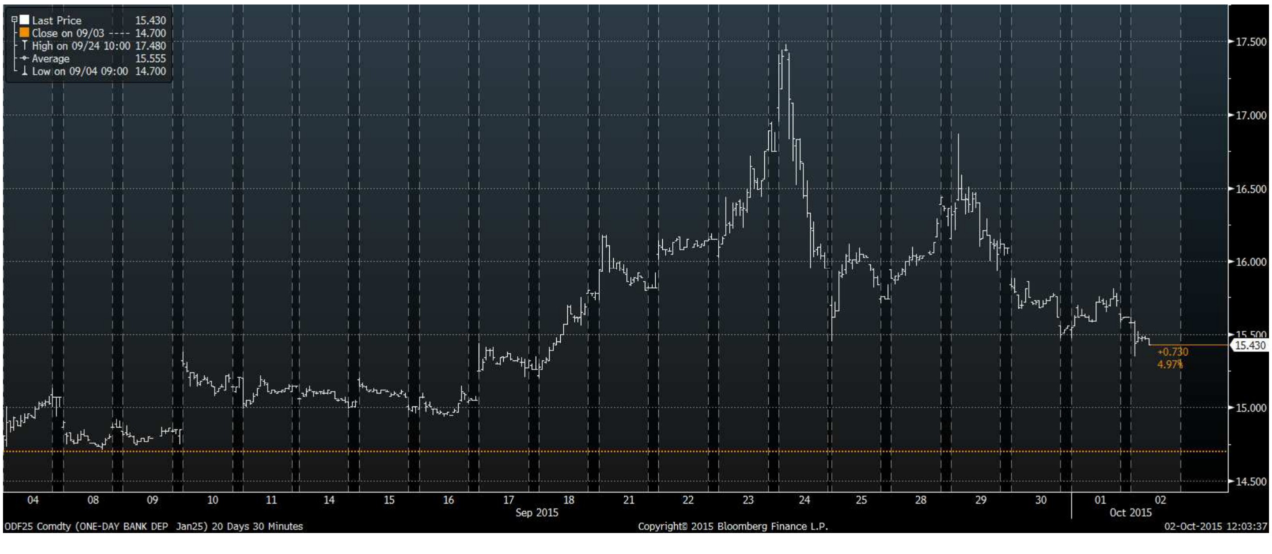


Source: National Treasury

Note: Pré is equivalent to fixed rate securities.

23. **The impact of these operations can also be noted through the evolutions of the interest rate curve, revealed by the DI 2025- Jan.** Though it's Treasury's objective to fix levels or determine trends, it can be observed the huge variation in the last 30 days, however with a declining trend in the last days of the program.

Graph 5 –Intra-day Interest Rate curve – DI Jan-25 -%



Source: Bloomberg

24. The volatility was also reduced to acceptable levels considering the past 6 months. This indicator shows that momentary interventions accomplished one of its goals: stabilizing parameters and contributing to price discovery.

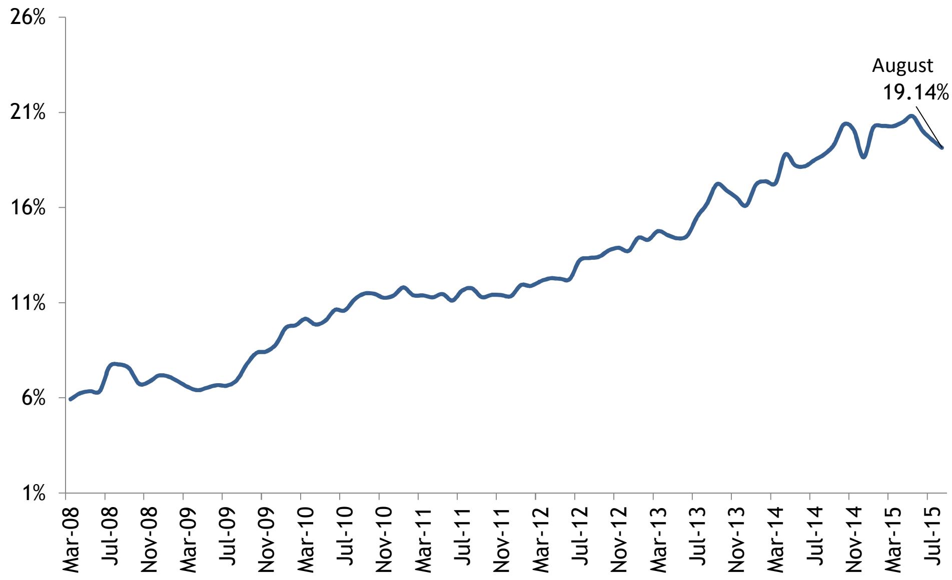
Graph 6 – 6-month Interest Rate Volatility

Source: Bloomberg

25. There is a fundamental difference between the current stage of the Brazilian public debt market when compared to 2008 (subprime crisis and its effects overseas). Currently, the local market is considerably deeper with a more diversified investors' base (pension funds, mutual funds, sovereign funds, central banks, besides hedge funds) compared to the past. Throughout the dealership system, and contact to non-resident investors, it's possible to infer the presence of large institutional investors with preference for duration and capacity to cope with short-term volatility and weather these periods, without necessarily unload their positions. These actors find important local counter-parties who may take advantage of the opportunities that come up in times like these. For instance, local pension funds bought a great deal of securities to fulfill their regulatory actuarial obligations.

26. As such, no sell-off movement has been observed in the local market. In contrast, this period has proven to be a good entry point for non-residents, given the historical highs in both FX-rate and interest rate.

Graph 7 – Non-Resident Investors Holdings in Local Debt



Source: National Treasury

27. **In sum, the Brazilian local public debt market has presented volatility throughout September, likewise in other markets. Treasury's performance aimed to add transparency, predictability and stability to the market.** This behavior is in line with the overall debt management guidelines which bounds the strategy and pace of debt issuances. The liquidity cushion, which was reinforced throughout the year and the capacity to finance itself in the market show there are conditions to do the crossing under stressful scenarios.

28. **Last, it's important to recall that, while the Treasury will return to its normal issuances referred by its annual calendar as of 10/05th , it will keep monitoring market conditions and will use the instruments if necessary: liquidity cash position and extraordinary auctions.**

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[3] Note: The primary information is presented by Codip – Front Office.

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