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SPECIAL REPORT - CREDIT

Two Views on the Current State of The Credit Cycle

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- This study presents two views on the non-earmarked credit cycle brought to light by two credit gap measures: the outstanding credit-to-GDP ratio gap and another on new monthly loans gap.
- The gap between trend and actual non-earmarked outstanding credit-to-GDP for non-financial corporations reached -3.96% in July. This number is to be expected given the contractionary stance of monetary policy since the end of 2021. For households, the latest figure for non-earmarked outstanding credit-to-GDP shows a fall into negative territory (-0.89%) following months of positive numbers, illustrating that tight monetary policy is now finally beginning to impact households.
- The effects of monetary policy and slower economic activity are much more apparent when we look at the gap between trend and actual new loans for July. The gap for household lending sits at -0.48%, while its equivalent for non-financial corporations is -0.05%; both negative, but not as negative as they have been in the past.
- Comparing July our estimates of the lending gaps for both sectors with the previous 12-month numbers shows that lending to non-financial corporations felt the contractionary effects of tight monetary policy earlier than lending to households, just as the BCB has been suggesting, and in line with our reading of the scenario.
- In line with the credit-to-GDP gap, July's new lending gap shows that households have felt contractionary effects in the last couple of months. On the other hand (and in contrast with the credit-to-GDP gap for non-financial corporations which is significantly negative) the new lending gap for non-financial corporations is almost zero. As we see it, household have started feeling the lagged compressive effects of monetary policy at the margin while corporations are beginning to see the first signs of relief.
- These results support our belief that Brazil is currently experiencing a period of restrictive monetary policy, high consumer indebtedness, slowing economic activity, and record levels of non-performing loans (NPLs), all of which are exerting contractionary pressures on credit markets. Even so, we believe that these results also support our forecast for no 'credit crunch' this year, since, despite the gaps being negative, they are smaller than in previous periods.

Introduction

This study presents two views on non-earmarked credit cycle brought to light by two credit gap measures: the outstanding credit-to-GDP ratio gap and another on new monthly loans gap.

Tightness in the credit market is an important economic indicator. It **captures both the effects of monetary and economic cycles in the credit markets and sums up the state of the financial system's health in a clear, and easy to understand measure.**

In this report, we focus exclusively on the non-earmarked segment in credit markets. Our interest is in what the credit cycle is telegraphing about monetary and economic conditions. Since the earmarked segment is used for countercyclical or distributive purposes, it may be prone to distorting effects. For this reason, we have opted to exclude the earmarked segment from this analysis.

Our results for the outstanding credit-to-GDP and the new lending indicate negative gaps in July for non-earmarked credit for both households and non-financial corporations, albeit at a smaller level for outstanding household credit-to-GDP. These numbers are consistent with our reading that Brazil is currently experiencing a period of restrictive monetary policy, high consumer indebtedness, slowing economic activity, and record levels of non-performing loans (NPLs), all of which are exerting contractionary pressures on credit markets. They also support the Brazilian Central Bank's (BCB) view that the impact on in household credit in this latest monetary policy tightening cycle has been small.

Outstanding Credit-to-GDP Gap - BIS View

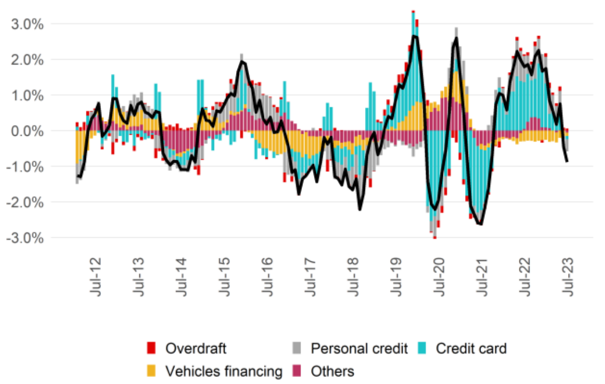
According to the Bank for International Settlements (BIS) Quarterly Review of 1Q2014, Basel III guidelines advocate the use of the gap between credit-to-GDP as an indicator for macroprudential policy[1]. Its usefulness comes from its ability to easily capture stress in credit markets, anticipating financial instability issues and acting as an early warning indicator for banking crises. Recently, De Moraes and Costa (2023) have shown that the credit gap measure is a good measure of risk to anticipate financial instability in Brazil[2]. With that in mind, we present our estimates of the gaps below.

To make this section more useful, we have opted to untangle the data a little bit and show not only the headline non-earmarked outstanding credit-to-GDP results for households and non-financial corporations, but their main sub-components as well. This way, we can tell which sub-sectors in the segment have been responsible for the most significant exacerbating/offsetting pressures in each period.

As a technical note, it is important to point out that to attenuate/amend endpoint bias in the HP filtering process, we extend each series by 18 months using ARIMA forecasts on their differences (discarded after filtering for presentation). Below, we present our results for each category together with a brief discussion.

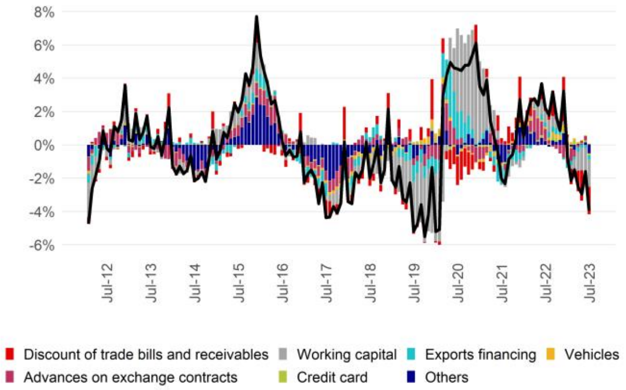
[1] See Drehmann and Tsatsaronis (2014), *The credit-to-GDP gap and countercyclical capital buffers: questions and answers* - BIS Quarterly Review at https://www.bis.org/publ/qtrpdf/r_qt1403g.pdf.
[2] See Moraes and Costa (2023), *Credit behavior and financial stability in an emerging economy* - Economic Systems 47 at https://www.sciencedirect.com/science/article/pii/S0939362522000619.

Figure 1 – Non-earmarked Outstanding Credit-to-GDP Gap for Households (% of Potential)



Sources: Brazilian Central Bank, Santander.

Figure 2 – Non-earmarked Outstanding Credit-to-GDP Gap for Non-financial Corporations (% of Potential)



Sources: Brazilian Central Bank, Santander.

From Figure 2, as of July, **non-financial corporations presented substantially below trend results (-3.96%),** with the main drivers for this effect being discount of trade bills and receivables (-1.65%) and working capital financing (-1.63%). **These numbers are to be expected given the contractionary stance of monetary policy since the end of 2021**. What is more of a surprise is that **the same does not hold for our household credit result** (see Figure 1). This suggests **that the effects of the tight monetary policy have not disrupted the credit market for households**. However, **the most recent data has shown a reversal of the households' gap and it now sits at negative territory (-0.89%), indicating that monetary policy has merely been operating with a lagged effect.**

Credit Concessions Gap - BCB View

In its most recent Inflation Report, the BCB proposed a methodology to estimate the non-earmarked credit lending cycle[3]. Their procedure is the following:

1. Extract an initial estimate of a gap from monthly new loan numbers using a standard HP filter (as done in the previous exercise);

2. Use the initial gap estimate as a dependent variable on a regression with the output gap and real rate gap (and, potentially, their lags) as the explanatory variables; and

3. Extract the fitted values from the previous step as the final estimate of the credit concessions gap and extend the series using the dependent variables as feeds to the estimated model.

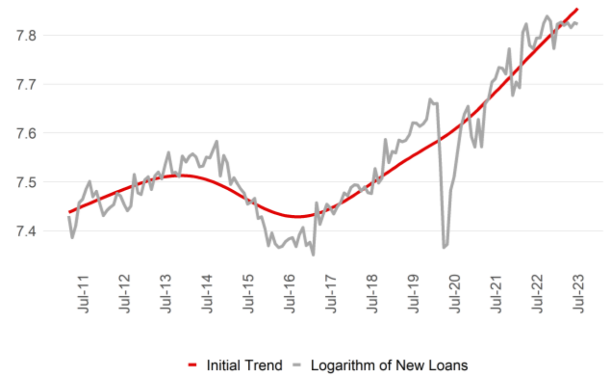
In the original proposal, the BCB used quarterly seasonally- and inflation-adjusted data for lending ranging from 2003 to 2019 for steps 1 and 2, and then extending until 1Q23 for step 3. We, on the other hand, make slight alterations to the approach. We use monthly data from 03M11 to 06M23, and we are not worried about overfitting issues. Our focus is solely on the lending gap that is closely related to monetary and economic cycles. Therefore, we use our whole sample in step 2 and extract only the fitted values in step 3[4]. To circumvent the potential disruptive effects of the pandemic on our analysis, we include in step 2 a covid-19 dummy on the regressions. Thus, the estimated equations in step 2 are:

$$y_t = c + \gamma d_t + \sum_{j=0}^{N} \beta^j x_{t-j} + \sum_{j=0}^{N} \delta^j \left(r_{t-j} - r^*_{t-j}\right) + \varepsilon_t,$$

[3] See *Cycles of credit granting with non-earmarked resources and of economic activity* - BCB Inflation Report 2Q23 at https://www.bcb.gov.br/content/ri/inflationreport/202306/ri202306b3i.pdf.
[4] Despite these modifications, the model used still cannot be seen as a causal relationship between the metrics, as is the case in the BCB's approach.

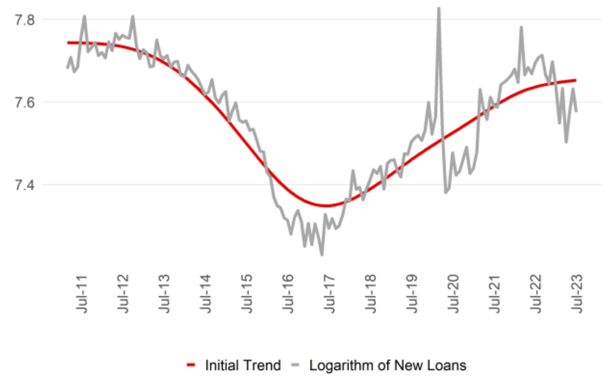
where y_t is the initial estimate of the non-earmarked new lending gap in month t for either households or non-financial corporations, d_t is the covid dummy parameter, x_t is Santander's estimate of the output gap, r_t is the ex-ante real policy rate, and r_t^* is Santander's estimate of the natural real rate. We have evaluated several possibilities for N ranging from 0 to 12 to determine the regressors lags and used, as the BCB did, the Akaike Information Criterium (AIC) to choose among the possibilities considered.

Figure 3 – Non-earmarked New Loans to Households (log and log trend)



Sources: Brazilian Central Bank, Santander.

Figure 4 – Non-earmarked New Loans to Non-Financial Corporations (log and log trend)

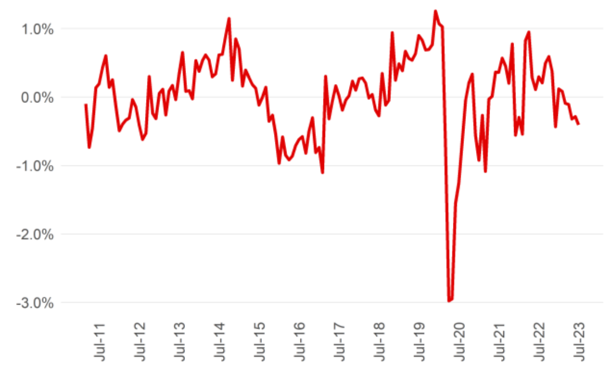


Sources: Brazilian Central Bank, Santander.

Even in this early stage, the initial estimates of trends paint a picture of the evolution of new lending in Brazil (see Figures 3 and 4). In the last 10 years, the non-earmarked sector has been able to grow steadily and substantially for households. For non-financial corporations, the same did not hold, as advances in capital markets created competition in funding for the national financial system.

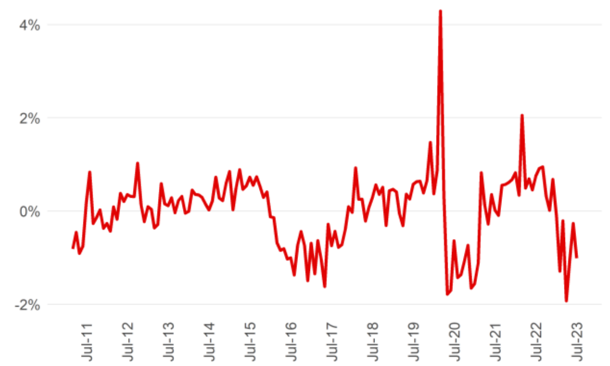
Contrary to our previous credit gaps, **the new lending gap estimate results are extremely volatile** (see Figures 5 and 6). This is to be expected, since **the underlying variables are flows as opposed to stock-flow ratios used in the last section**. Still, when considering the relationship between the new lending gap and monetary and economic cycles, one should expect a smoother gap estimate. For this reason, we continue our analysis following the methodology presented before.

Figure 5 – Non-earmarked New Loans to Households Initial Gap (% of Potential)



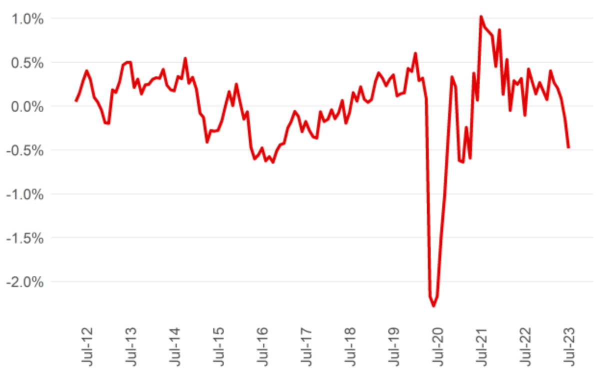
Sources: Brazilian Central Bank, Santander.

Figure 6 – Non-earmarked New Loans to Non-Financial Corporations Initial Gap (% of Potential)



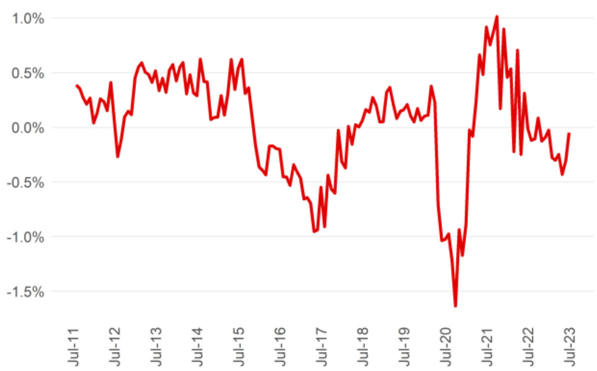
Sources: Brazilian Central Bank, Santander.

Figure 7 – Non-earmarked New Loans to Households Gap (% of Potential)



Sources: Brazilian Central Bank, Santander.

Figure 8 – Non-earmarked New Loans to Non-Financial Corporations Gap (% of Potential)



Sources: Brazilian Central Bank, Santander.

Our final estimates of the new lending gaps paint a much smoother picture than the initial estimate (see Figures 7 and 8). Also, **the effects of monetary and economic activity cycles are much more apparent here when compared to our credit-to-GDP gaps** from Figures 5 and 6. As of July, **the gap for household new lending sits at -0.48%, while its equivalent for non-financial corporations is -0.05%.** Thus, both are now in negative territory, but **not as negative as they have been in the past**. Like the results from figures 1 and 2, figures 7 and 8 **also serve as evidence that new lending to non-financial corporations has felt the contractionary effects of the tight monetary policy earlier than new lending to households**. This is consistent **with the BCB's communications,** both in the Inflation Report and in interviews/presentations made by board members.

In line with the credit-to-GDP gap, July's new lending gap shows that households have felt contractionary effects in the last couple of months. On the other hand (and in contrast with the credit-to-GDP gap for non-financial corporations which is significantly negative) the new lending gap for non-financial corporations is almost zero. As we see it, household have started feeling the lagged compressive effects of monetary policy at the margin while corporations are beginning to see the first signs of relief.

Concluding Remarks

The figures presented here can easily capture and provide timely evidence on credit market conditions. We have found negative gaps as of July for non-earmarked credit for both households and non-financial corporations using two methodologies. These results support our belief that Brazil is currently experiencing a period of restrictive monetary policy, high consumer indebtedness, slowing economic activity, and record levels of non-performing loans (NPLs), all of which are exerting contractionary pressures on credit markets. Even so, we believe that these results also support our forecast for no 'credit crunch' this year, given the improvement in non-financial corporation lending.

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