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SPECIAL REPORT – MONETARY POLICY

INTRODUCING SANTANDER'S MONETARY CONDITIONS INDEX

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- In this report, we present our Santander Monetary Conditions Index (SMCI). We adapt the methodology proposed by Ericsson, Jansen, Kerbeshian and Nyomen (2017) to estimate the SMCI for Brazil. The purpose of this index is to summarize local monetary conditions in a single number. Hence, we present a brief historical analysis to evaluate the ability of the index to encapsulate monetary cycle conditions. As we see it, the SMCI serves as a complement to our Financial Conditions Index (FCI).
- In our view, the FCI can be seen as a broad measure, but it sometimes fails to capture the current local monetary stance, since it is common for other components to show divergent behavior from that indicated by monetary policy. Even in an alternative breakdown, when we separate domestic and external factors, other local components — such as capital markets and risk — may blur the analysis of monetary policy.
- The FCI and SMCI have been diverging since 2021, illustrating the differences between local and external monetary policy cycles. In Brazil, the most recent tightening cycle started earlier than tightening cycles in most other countries. This led to an early increase in the SMCI, as the FCI remained at stimulative levels for longer, still influenced by external factors and notably loose monetary policies abroad.
- More recently, as the Brazilian Central Bank (BCB) began an easing cycle while monetary policy remained in a tightening stance in most developed markets, it has been possible to observe a decoupling the other way around, as monetary conditions in Brazil have already started to show the impact of a stimulative policy, whereas the FCI remains at highly contractionary levels. It is worth noting that most divergences remain even when we exclude sometimes highly volatile oil prices from the index.
- An important feature of the SMCI is that it is calculated with a different methodology than the one used for the FCI. In our view, this enhances the usefulness of both indexes, since they have more similarities than differences, indicating that both are likely valid measures of the impact of broad monetary and financial conditions on economic activity.
- The comparison between the SMCI, the FCI, and their components indicates that, looking ahead, the main determinant of financial conditions is likely to be the monetary policy in DMs. On the one hand, both the SMCI and the FCI's domestic and local rates components already indicate a local stimulative stance. On the other hand, the external rates component remains high, with additional tightening at the margin, especially after recent statements by the Fed.
- Finally, in our view, the Brazilian interest rate differential against both EM and DM countries is already low. As a result, the possibility of lower terminal rates in the current cycle is more dependent now on a change in the global rates environment toward a more dovish mood.

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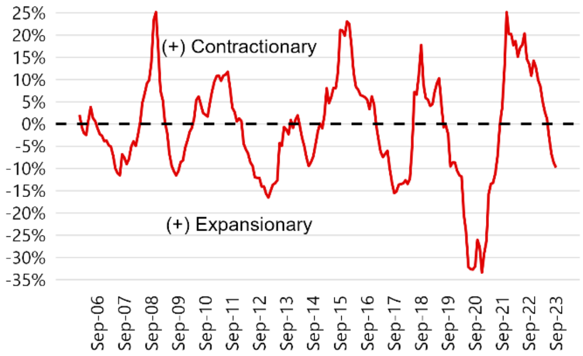
INTRODUCTION AND INITIAL ANALYSIS

In this report, we present our Santander Monetary Conditions Index (SMCI). The purpose of this index is to summarize local monetary conditions in a single number. Hence, we present a brief historical analysis to evaluate the ability of the index to encapsulate monetary cycle conditions. As we see it, the SMCI serves as a complement to our Financial Conditions Index (FCI). Thus, we also analyze both figures jointly. Finally, we end this note with a brief comment on the picture of current conditions painted by both indicators, followed by a short technical appendix detailing the methodology used in the estimation procedure.

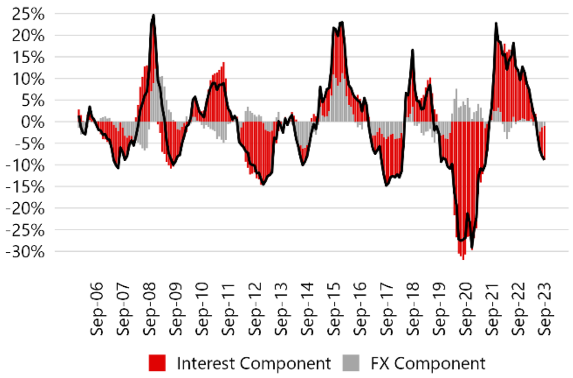
We adapt the methodology proposed by Ericsson, Jansen, Kerbeshian and Nyomen (2017)[1] to estimate the SMCI for Brazil (detailed in the technical appendix at the end of this report). We present our resulting data in Figure 1. A positive MCI indicates contractionary conditions.

Figure 1 – Santander Monetary Conditions Index (SMCI)



Sources: Bloomberg, Santander.

Figure 2 – SMCI Decomposition



Sources: Bloomberg, Santander.

As shown in Figure 1, the contractionary peak for our SMCI results was around 2008, when monetary conditions became extremely tight due to the global financial crisis. Although we see the SMCI as a proxy for local conditions (as will be detailed in the next section), the contraction was so widespread globally that even local markets reacted and saw a rise in rates and (a bit later) a depreciation of the exchange rate. This resulted in a particularly tight environment, as captured by the SMCI.

A similar movement occurred in 2015. In Brazil, the period was marked by increased political instability, rising inflation, and recession. Interest and exchange rates reacted accordingly and in consonance, both leading to a long period of contractionary conditions.

Of the expansionary periods, the relief following the Covid-19 pandemic in 2020-21 is the most noticeable. Unsurprisingly, it was brought about by major easing in the interest rates component. There was a depreciation of the exchange rate in the same period (most likely caused by the same reduction in local rates), but the magnitude of the easing of interest rates compared to their long-term trend was so massive that the net effect amounted to the largest expansion in the SMCI since the beginning of our series.

The change in monetary policy in the aftermath of the pandemic is also visible in the graphs. As the BCB began its fight against inflation, the SMCI responded sharply and switched to a contractionary trend. This time, the exchange rate contribution was around zero, despite the sharp movements in local interest rates. We believe that the overall neutral contribution seen in this cycle can be attributed to the synchronization of monetary policy stances among EM peers.

More recently, there was a change in the SMCI in June 2023, as the underlying variables anticipated the start of the monetary policy easing cycle. As we will show, this contrasts with our FCI estimates, which remain at contractionary levels. Overall, we see our SMCI estimate as properly summarizing the local monetary conditions.

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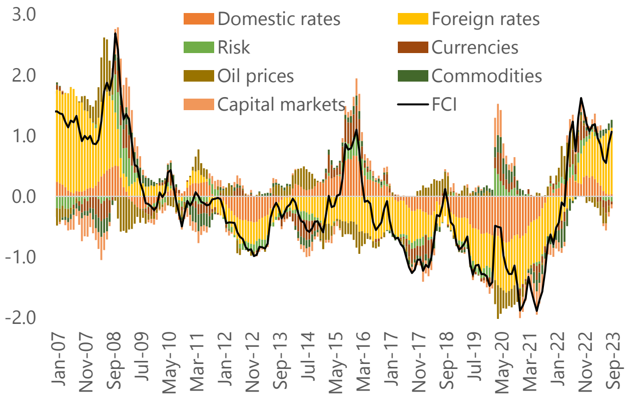
[1] See Ericsson, Jansen, Kerbeshian and Nyomen (2017), Interpreting a Monetary Conditions Index in economic policy - Bank for International Settlements Publications at https://www.bis.org/publ/confp06i.pdf.

MONETARY VS. FINANCIAL CONDITIONS

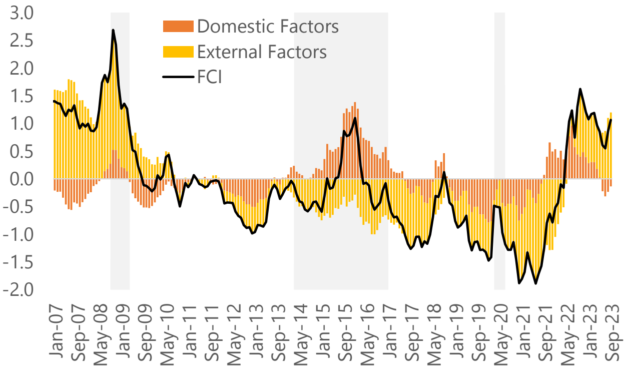
Our Financial Conditions Index is based on a methodology presented by the BCB[2] and encompasses both local and external factors that influence financial conditions. Therefore, the FCI can be seen as a broad measure, but it sometimes fails to capture the current local monetary stance, since it is common for other components to show divergent behavior from that indicated by monetary policy. Even in an alternative breakdown, where we separate domestic and external factors, other local components — such as capital markets and risk — may blur the analysis of monetary policy.

Figure 3 – Santander's FCI Proxy



Sources: Bloomberg, BCB, FGV, Santander.

Figure 4 – Santander's FCI Proxy



Sources: Bloomberg, BCB, FGV, Santander.

The joint analysis of FCI and SMCI shows the benefits of monitoring the latter, as in several periods one can observe divergences between the two indexes. Figures 5 and 6 indicate that, in the 2006-08 period, the FCI indicated a much more contractionary stance than the SMCI, especially due to the large contribution from external interest rates. Even when the 2008 global crisis hit, the gap between them remained, as risk indicators made a strong positive contribution to the FCI.

Another case of divergences between the indexes has been happening since 2021 and illustrates the differences between local and external monetary policy cycles. In Brazil, the most recent tightening cycle started earlier than it did in most other countries, which led to an early increase in the SMCI, as the FCI remained at stimulative levels for longer, still influenced by external factors and notably loose monetary policies abroad.

More recently, as the BCB began an easing cycle while monetary policy remained in a tightening stance in most developed markets, it has been possible to observe a decoupling the other way around, as monetary conditions in Brazil have already begun to show the impact of a stimulative policy, whereas the FCI remains at highly contractionary levels. It is worth noting that most divergences remain even when we exclude sometimes highly volatile oil prices from the index.

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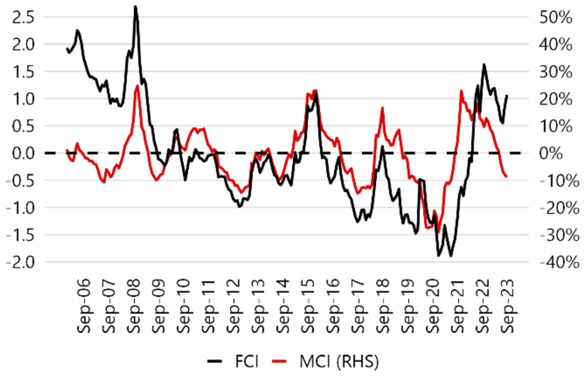
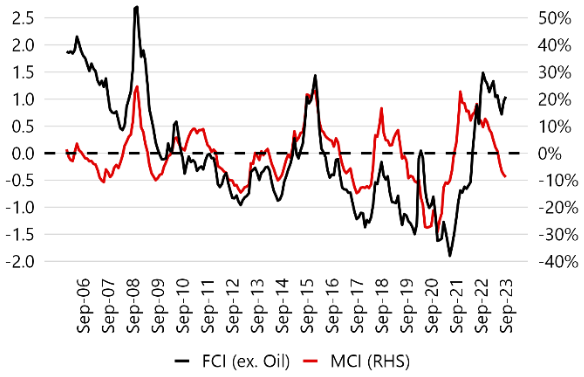
[2] See "Financial Conditions Indicator – 1Q20 BCB's Quarterly Inflation Report" https://www.bcb.gov.br/content/ri/inflationreport/202003/ri202003b8i.pdf.

Figure 5 – SMCI x FCI



Sources: Bloomberg, BCB, FGV, Santander.

Figure 6 – SMCI x FCI ex Oil

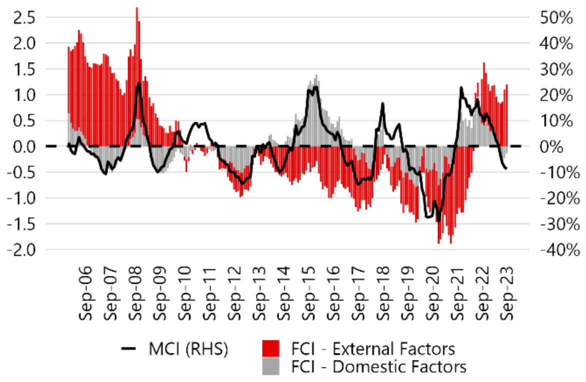


Sources: Bloomberg, BCB, FGV, Santander.

Finally, even when we look at the domestic component of the FCI, we see some divergences with the SMCI, as pictured in Figure 7. In 2020, for example, the pandemic led the BCB to take the Selic rate to its lowest historical levels, which is reflected in the SMCI, as the index reached its most stimulative position since the beginning of the historical series. However, this behavior was not fully reflected in the domestic component of the FCI, since risk factors and capital markets prevented a larger drop in the domestic component of the index.

A similar (but less stark) divergence has happened in the past couple of months. Despite the notable easing in the SMCI, which is also influenced by future rate cuts already priced in by the market, financial components remain restrictive, preventing similar behavior in the FCI. Both domestic and external components still show more restrictive (or less stimulative) stances than the SMCI.

Figure 7 – MCI x FCI Factors



Sources: Bloomberg, BCB, FGV, Santander.

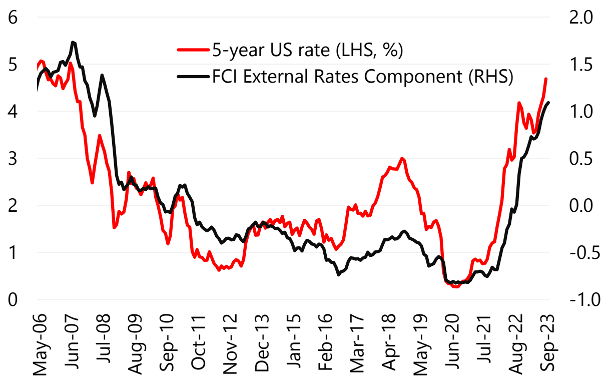
CONCLUDING REMARKS

In this report, we presented Santander’s Monetary Conditions Index and indicated the advantages of following this index as a complement to our already established Financial Conditions Index. In our view, this analysis is even more valuable in periods when domestic and external monetary cycles are not synchronized, such as can be observed currently.

Another important feature of the SMCI is that it is calculated with a different methodology than the one used for the FCI. In our view, this enhances the usefulness of both indexes, since they have more similarities than differences, indicating that both are likely valid measures of the impact of broad monetary and financial conditions on economic activity.

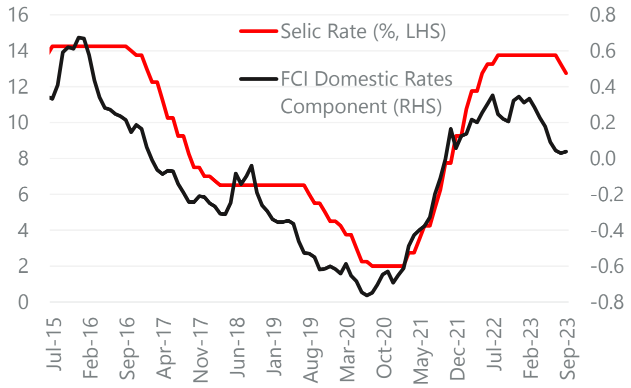
A comparison between the SMCI, the FCI, and their components indicates that, looking ahead, the main determinant of financial conditions is likely to be monetary policy in DMs. On the one hand, both the SMCI and the FCI's domestic and local rates components already indicate a local stimulative stance. On the other hand, the external rates component remains high, with additional tightening at the margin, especially after recent statements by the Fed.

Figure 8 – Santander's FCI Proxy – External Rates



Sources: Bloomberg, BCB, Santander.

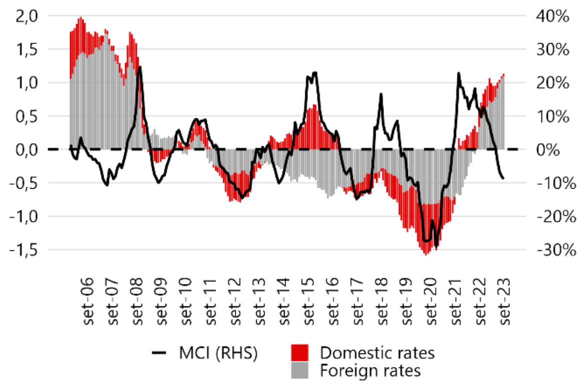
Figure 9 – Santander's FCI Proxy – Domestic Rates



Sources: BCB, Santander.

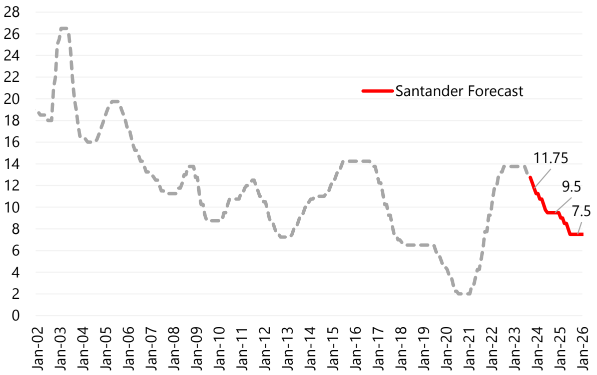
Finally, in our view, the Brazilian interest rate differential vs. both EM and DM countries is already low. As a result, the possibility of lower terminal rates in the current cycle is more dependent now on a change in the global rates environment toward a more dovish mood.

Figure 10 – SMCI x FCI Components



Sources: Bloomberg, Santander.

Figure 11 – Selic Rate, Santander's Forecast (% pa)



Sources: Brazilian Central Bank, Santander.

Technical Appendix

As explained, we have estimated our SMCI based on our adaptation of the methodology proposed by Ericsson, Jansen, Kerbeshian and Nyomen (2017). In this paper, the authors aim at estimating the MCI following the equation below:

$$MCI_t = \theta(R_t - R_0) + (1-\theta)(e_t - e_0),$$

where the subscript t is a time index and $t = 0$ denote the chosen base period, θ and 1- θ are the weights of interest rate and exchange rate respectively, R is the nominal interest rate, e is the log of the exchange rate and (variables in lower case represents the logarithms). In the original paper, the data used by the authors were Canadian 90-day commercial paper and the nominal G-10 bilateral trade-weighted exchange rate index.

The authors extract the weight θ based on the coefficients of an aggregate demand regression. The estimated equation was:

$$\Delta y_t = \alpha + \beta_1 \Delta y_t^* + \beta_2 \Delta y_{t-1}^* + \beta_3 \left[\frac{\Delta_8 RR_t}{8}\right] + \beta_4 \left[\frac{\Delta_{12} q_t}{12}\right],$$

where Δy_t is the log of Canadian GPD in first difference, Δy_t^* is the log of US GDP in first difference, RR_t is the real interest, which is constructed as the nominal 90-day Canadian commercial paper interest rate (R) minus the one-quarter lag in in the annual rate of change the Canadian GDP deflator (P), being that $RR_t = R_t - \Delta_4 p_{t-1}$, and finally, the real exchange rate (Q) is derived from the product of the nominal bilateral U.S.-Canadian exchange rate and the ratio of Canadian GDP deflator to the U.S. deflator. The subscripts in the difference operator (Δ), indicate that they used the 8-quarter difference in the real interest rate and the 12-quarter difference in the real exchange rate component to account for the long and variable monetary policy lags. Finally, once the parameters from the above equations are estimated through OLS, the weight θ is thus extracted as $\theta = \beta_3/(\beta_3 + \beta_4)$.

In our view, though remarkably insightful and useful, this methodology could cause some issues if replicated as is for emerging economies, which are characterized by (relatively) lower openness to international markets and higher volatility. For this reason, we have adapted the above equation to the equation below:

$$\Delta y_t = \alpha + \beta_1 \Delta y_{t-1} + \beta_2 \left[\frac{\Delta_x RR_t}{x}\right] + \beta_3 \left[\frac{\Delta_y q_t}{y}\right].$$

Note that we removed the U.S. GDP factors from the equation, replacing them with the autoregressive domestic GDP difference. For the real interest rate, we used the Selic rate (after subtracting the expected IPCA 12-month-ahead inflation from the BCB’s Focus Survey), and for the real exchange rate, we used the Real Broad Effective Exchange Rate for Brazil from the Federal Reserve Bank. We have accounted for several possibilities of lags in the real rate and exchange rate components (x and y), ranging from 1 to 15 quarters. The final selection was based on the combination of lags that delivered the most robust regression results.

We also made slight adjustments to the MCI equation to account for local volatility. Instead of choosing a base period, we ran HP filters on the underlying variables and used their short-term cycle components as a percentage of their long-term trend components. Hence, our SMCI is built as:

$$SMCI_t = \theta \widehat{RR}_t + (1-\theta)\widehat{E}_t,$$

where $\widehat{RR}_t$ is the nominal interest rate cycle component as a percentage of its trend component and $\widehat{E}_t$ is the equivalent for the exchange rate. It is important to note that to reduce endpoint bias, even at the cost of lookahead bias, we extended the underlying series by six months using Arima projections, and, after filtering, we eliminated those from the analysis. For the data, we used one-year Overnight Swap (OIS) pre-DI as the nominal interest rate, and the spot USD/BRL as the exchange rate in this part of the analysis.

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