

Box 1

The transmission of the Monetary Policy Interest Rate and Its Expectations to Certificate of Deposit and Credit Interest Rates¹

As part of the inflation-targeting framework governing monetary policy in Colombia, *Banco de la República* uses the monetary policy interest rate (MPR) as an instrument. By changing the MPR, *Banrep* induces variations in market interest rates at different terms and in asset prices, thereby influencing spending and investment decisions of households and firms. The mechanisms through which monetary policy decisions affect various economic variables are called *monetary policy transmission channels*, which ultimately impact growth and inflation. The main channels are the interest rate channel, the credit channel, the exchange rate channel, the asset price channel, and the expectations channel.

This box describes the interest rate and credit channels and highlights the importance of the transmission of changes in the MPR and its expectations to the economy's interest rates. It also presents some results from estimates for Colombia regarding this transmission to the interest rates on certificate of deposits (CDT) and credit.

1. Two Monetary Policy Transmission Channels: Interest Rates and Bank Credit

The economic literature points to the interest rate channel as an important mechanism for transmitting monetary policy through which changes in short-term interest rates, driven by movements in the MPR, have effects on economic activity and inflation. In a first stage, variations in the current MPR are directly transmitted to money market interest rates² (typically overnight rates), but they also affect market expectations regarding future MPR values and uncertainty about them, which affects longer-term interest rates.³ These changes in interest rates at all terms affect consumption and investment decisions, which, in turn, alter price dynamics.

The transmission of the current MPR and its expectations to interest rates at different terms of savings and credit is reinforced by the bank credit channel. This operates when bank loans are a very important source of financing for economic agents,⁴ and when financial institutions do not have another asset on their balance sheets that can replace credit.⁵ Under these conditions, variations in the MPR, in addition to being transmitted to the different terms of the savings and loan interest rates, also affect the credit supply.

1 This is a summary of some sections of the technical document that will be published in *Borradores de Economía* (Working Papers on Economics).

2 See Box 3: "Liquidity Provision by *Banco de la República*, 2023-2024", in the *Report of the Board of Directors to the Congress of Colombia*, July 2024.

3 A long-term interest rate is equal to the sum of the observed and expected short-term interest rates to term, plus a risk premium that reflects the uncertainty around future short-term interest rates (interest rate expectations hypothesis). For example, a one-year interest rate would be equal to the sum of the observed daily rate and the expected daily rates for each day that contains the year, plus a premium paid to the investor for the risk that future daily rates deviate from projected levels.

4 Households and companies do not have a substitute funding for bank credit, since other types of financing are more expensive or difficult to access.

5 When a bank observes an increase in the demand for credit, it prefers to increase deposits to fund the operation; this because having resources with the sale of another asset (e. g., sale of securities, physical assets, etc.) is more expensive.

For example, reductions in the MPR decrease the return on bank deposits at the central bank or on loans to other banks, and thus create incentives for them to increase the supply of loans. This reinforces the impact of the MPR change on loan interest rates, as well as its effect on aggregate demand and inflation.

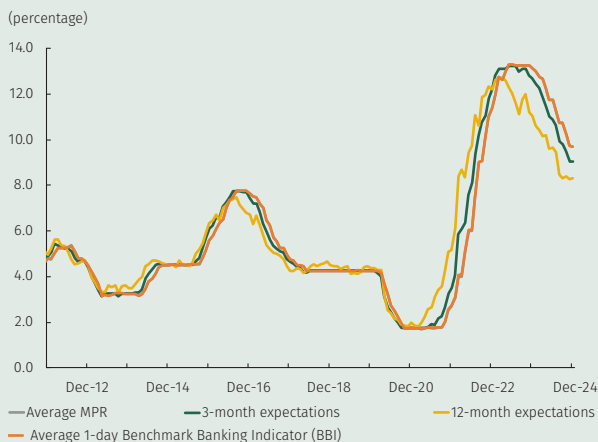
The transmission of monetary policy through interest rate and credit channels can be affected by factors such as financial regulation (bank reserves, capital requirements, interest rate limits, etc.), asymmetric information, market power, the share of fixed versus variable interest rates in the market, the degree of uncertainty regarding future MPR adjustments, and the credibility of the Central Bank, among others.

2. The MPR, Its Expectations, and Its Effect on CDT and Credit Interest Rates

First, Graph B1.1 shows that the MPR series and the overnight money market interest rate (BBI) align over time, indicating that any change in the MPR is immediately transmitted to the overnight money market rate. The graph also shows the expected paths that MPR agents⁶ have for the next three and twelve months, expectations extracted from a money market indicator called overnight index swap (OIS).⁷ It highlights how the agents anticipated both the period of increases in the MPR that began at the end of 2021 and the period of reductions that started at the end of 2023.

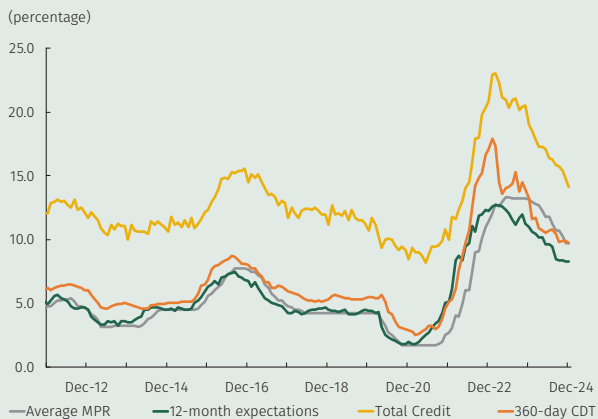
Graph B1.2 shows the expectations for the MPR over one year (according to the OIS), along with the interest rate on CDTs at the same term and the average credit interest rate.⁸ This graph shows a relationship between the movements of the MPR and its expectations relative to changes in deposit and credit rates. During the final stages of the MPR increase (Sept. 2021 to April 2023) and decrease (Dec. 2023 to Dec. 2024), the rates of the financial system began to react earlier, partly due to agents' expectations of future changes in the cost of liquidity offered by *Banco de la República*. In other words, banks anticipated future MPR movements, which were reflected in the performance of savings and credit rates. It is important to note that, during these periods, in addition to the supply and demand conditions in the savings and credit markets, there were also regulatory changes that affected the transmission process.⁹

Graph B1.1
Monetary Policy Interest Rate (MPR) and Its Expectations according to the OIS^{a/}
(effective annual rates, monthly averages of daily values)



a/ Calculated using the overnight index swap.
Sources: Bloomberg and Banco de la República.

Graph B1.2
MPR (OIS) Expectations^{a/} and CDT and Credit Interest Rates^{b/}
(monthly average effective annual rates)

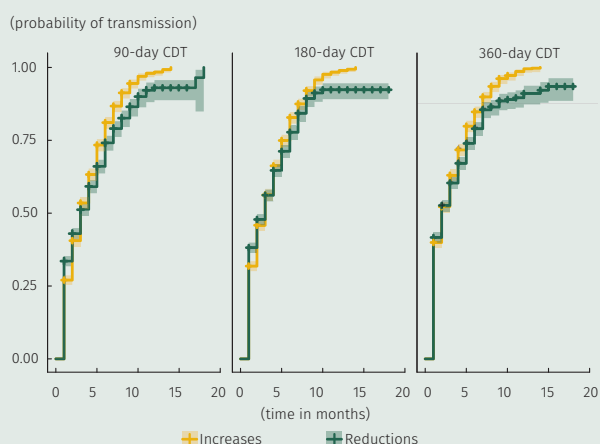


a/ Calculated using the overnight index swap.
b/ The total credit interest rate corresponds to the weighted average interest rate by amount for loans: consumer, ordinary, preferential, and treasury loans.
Sources: Bloomberg and Banco de la República.

- 6 Similar results were obtained when constructing the paths of the expected MPR based on the monthly survey of economic analysts of *Banco de la República*.
- 7 This is an exchange contract (swap of the index overnight) which has a fixed part and a floating part. One party agrees to pay floating interest on a national principle based on a certain overnight rate (e.g., the effective monetary policy rate) during the contract period. In return, the other party agrees to pay the mutually agreed fixed rate until the end of the swap or exchange agreement. On the previously agreed date, after the two parties' floating and fixed interest payment obligations accumulate during the period, the monetary difference is settled.
- 8 Weighted average rate by amount of credits: consumption, ordinary, preferential, and treasury.
- 9 In 2023, the Financial Superintendency modified the net stable funding ratio (NSFR), increasing the requirements to have a better match between the deposit terms and credit. As a result, some banks increased the demand for long-term CDTs to comply with the regulation and put upward pressure on interest rates on these deposits. In addition, in August 2024 *Banco de la República* reduced the bank reserve requirement by one percentage point, reducing the "opportunity cost" for intermediaries to have these deposits in *Banrep*.

In general terms, econometric exercises¹⁰ show that the transmission of MPR changes and its expectations (OIS) to CDT and credit interest rates occurs at different speeds. CDT interest rates react as quickly as or faster than loan rates to changes in the MPR and its expectations. CDT interest rates take between eight and twelve months to show significant transmission (90% of a MPR change) at the different terms. In this market, shorter-term deposits show faster transmission. As for loans, significant transmission (90% of a MPR change) takes between nine and more than fifteen months, depending on the loan type. Commercial interest rates, which are more highly indexed to the BBI or Fixed-Term Deposit (DTF in Spanish) compared to other loan types, exhibit faster transmission (between nine and twelve months), followed by consumer loan rates (between twelve and fifteen months), and mortgage rates (more than fifteen months). Depending on the size of the credit institutions, the transmission to both CDT and loan interest rates is faster in large financial institutions, followed by medium-sized and small ones.¹¹

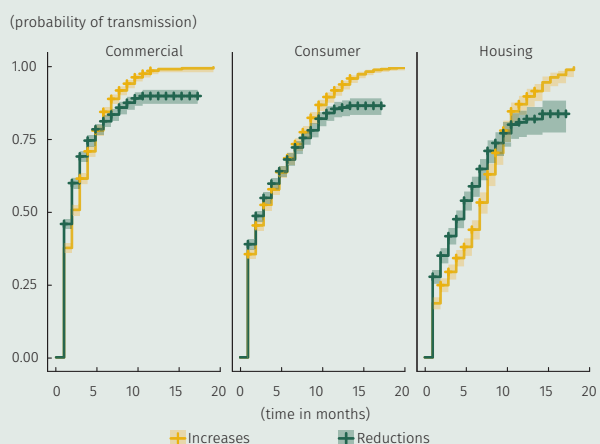
Graph B1.3
Probability of Transmission of the MPR and Its Expectations to Deposit Interest Rates



Source: Authors' own calculations.

An additional exercise seeks to estimate whether the transmission of interest rates and their expectations differs during periods of MPR increases compared to reductions (asymmetry). Graph B1.3 shows the results of a methodology that analyzes interest rates for each credit institution, highlighting asymmetries in deposit interest rates. These asymmetries show a greater likelihood of transmission in the months following TPM increases (over ten months). In the case of credit (Graph B1.4), commercial and housing loan interest rates show a faster transmission during TPM reduction periods in the first six months of the year, whereas after one year, all types of credit exhibit more likely transmission during periods of TPM increases.¹²

Graph B1.4
Probability of Transmission of the MPR and Its Expectations to Credit Interest Rates



Source: Authors' own calculations.

10 The results of these exercises will be published in more detail in *Borradores de Economía* (Working Papers on Economics). These were made with the interest rates of new CDTs and those of credit disbursements. As of December 2024, 78.8% of new deposits and 59.3% of disbursements from the financial system were at a fixed rate. About 80% of commercial credits are indexed to the BBI or DTF.

11 This classification by size considers the information on the assets of financial institutions.

12 Another methodology, which uses the aggregate interest rates of the CDT and credit weighted by the amount, indicates that in consumer and commercial interest rates, transmission is faster during periods of reductions in the MPR compared to periods of increases; In contrast, deposit and housing rates do not show asymmetries.

References

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