

## Box 3

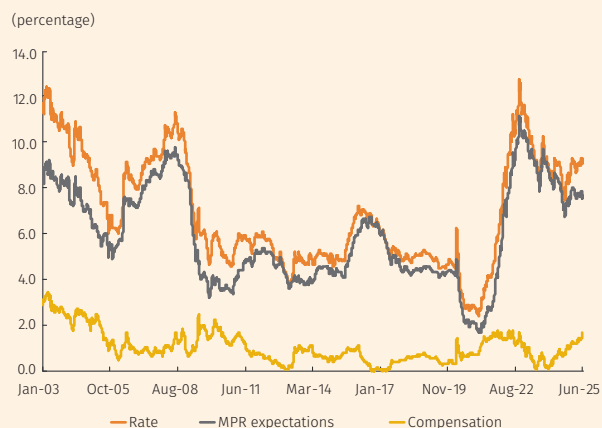
# Determinants of Sovereign Debt Interest Rates at Different Maturities

Graph B3.1  
2-year Monetary Policy Expectations from Financial Markets



Source: Banco de la República.

Graph B3.2  
Decomposition of the Two-Year TES Rate



Source: Banco de la República.

**Interest rates on public debt tend to respond to different determinants, depending on maturity.** Since 2024, short-term interest rates on Colombian peso-denominated public debt (TES) have declined in line with the cuts in *Banco de la República's* monetary policy rate (MPR). On the contrary, long-term interest rates have increased, driven by other structural factors. In this context, this box aims to identify the main factors that have driven this increase over the last year and a half. The evidence suggests that the increase in long-term interest rates is mainly due to the deterioration of the country's fiscal outlook<sup>1</sup>.

**In general, short-term interest rates are mainly influenced by the MPR and by market expectations regarding its future trajectory.** In Colombia, this relationship can be analyzed by breaking down short-term TES interest rates into two factors: market expectations regarding the future course of monetary policy and a compensation for investing over a longer horizon<sup>2</sup>. These monetary policy expectations can be mainly derived from surveys, the TES market, or the financial derivatives market (swaps)<sup>3</sup>, with the latter two sources being highly similar (Graph B3.1). Furthermore, the fact that most movements in the interest rates of short-term securities can be explained by these expectations (Graph B3.2) suggests that monetary policy is the main factor driving their performance (Espinosa, Melo, and Moreno, 2014).

**In turn, long-term interest rates are largely determined by structural factors, as well as by macroeconomic and financial conditions.** Similar to short-term interest rates, they can be broken down into inflation expectations and additional compensation for investing over a longer horizon. The latter reflects the premium that investors demand for holding long-term securities rather than rolling over short-term investments throughout the same horizon (Kopp and Williams, 2018). In other words, the term premium represents the compensation required for assuming the risk of possible interest rate changes over the life of the security (Adrian, Crump, and Moench, 2014). In the case of Colombia, long-term interest rates are generally explained by both the evolution of inflation expectations and this additional premium. However, during the period analyzed, the increase observed in long-term interest rates was mainly explained by the increase in this compensation, while monetary policy expectations have shown some reductions (Graph B3.3).

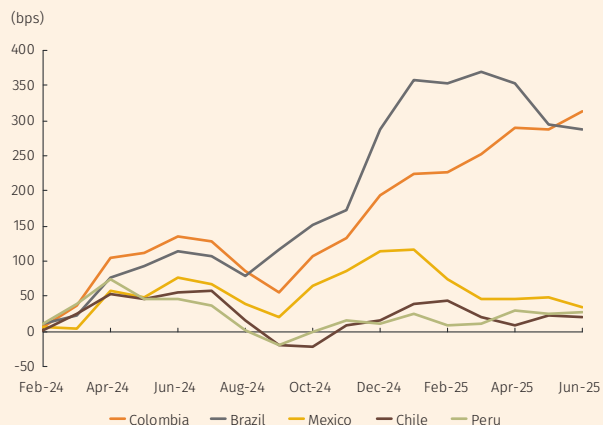
- 1 For this purpose, the approach presented by Botero, Mateus, and Ruiz (2023) is used.
- 2 Prepared based on the methodology proposed by Espinosa, Melo, and Moreno (2014), which, in turn, is based on that of Adrian, Crump, and Moench (2013).
- 3 In Colombia, interest rates swaps are derivative instruments that reflect investors' monetary policy expectations, given that the underlying of these assets is the compounded overnight BBI over the term of the transaction.

**Graph B3.3**  
Decomposition of the Ten-Year TES Rate



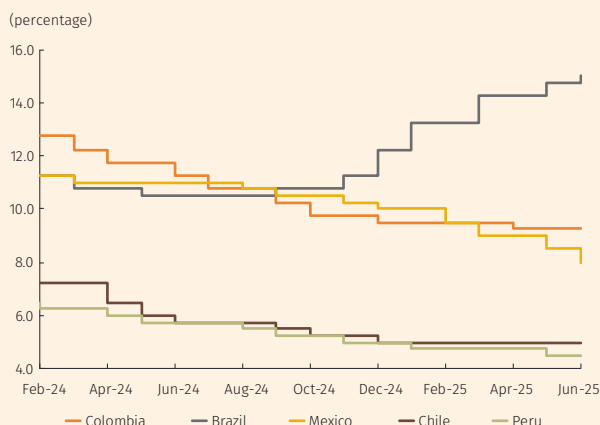
Source: Banco de la República.

**Graph B3.4**  
Cumulative Variation (bps) in the 10-Year Rate in Local Currency since January 2024



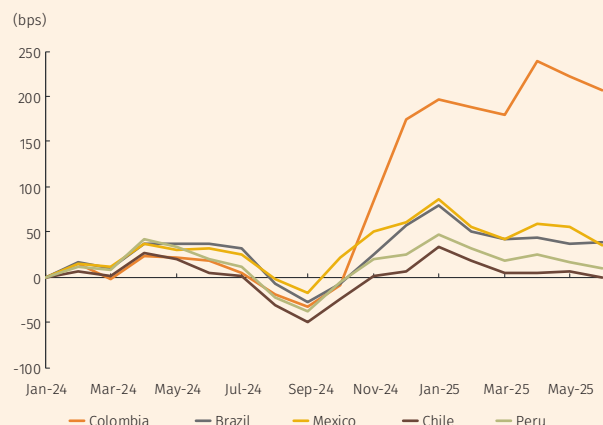
Source: Bloomberg.

**Graph B3.5**  
Monetary Policy Rate of the Central Banks in the Region



Source: Bloomberg.

**Graph B3.6**  
Cumulative Variation (bps) of the 10-Year Rate in Dollars since January 2024

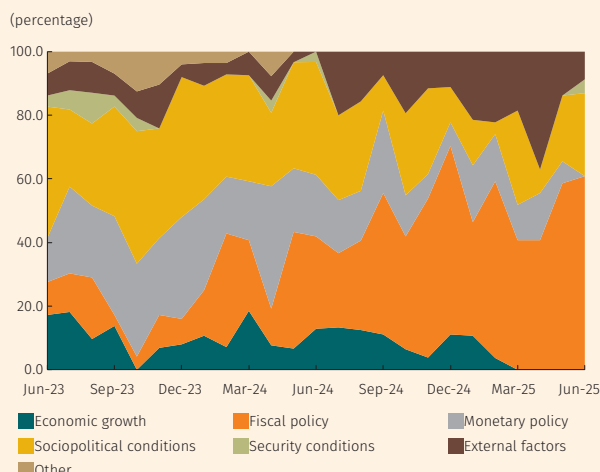


Source: Haver, Bloomberg.

**The increase in interest rates has occurred in both local currency and US dollars.** In the case of local currency interest rates (Graph B3.4), this upturn has occurred while *Banco de la República* has reduced its MPR by 375 basis points (bps) during this period, a larger reduction than that implemented by other central banks in the region. In contrast with Brazil, where the increase of more than 300 bps in local currency interest rates can largely be attributed to the 325-bps increase in the MPR over the same period (Graph B3.5). Regarding dollar interest rates, Colombian securities have shown increases greater than those observed in other countries in the region (Graph B3.6).

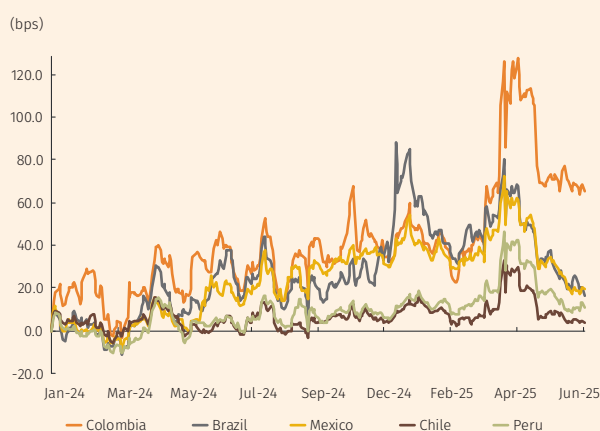
**The decomposition of these interest rates into monetary policy expectations and a compensation for investing over longer terms indicates that the latter factor explains the increase in Colombian long-term securities during 2024 and so far in 2025.** In order to analyze the determinants of this compensation, Botero, Mateus, and Ruíz (2023) analyze the Colombian case and find that, historically, it has been explained by five factors: 1) greater

**Graph B3.7**  
Most Relevant Factors in Investment Decision-Making



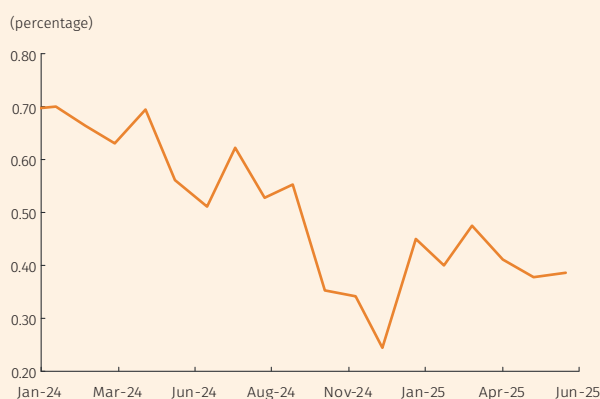
Source: Financial Opinion Survey (EOF in Spanish).

**Graph B3.8**  
Cumulative Variation (bps) of the Five-Year CDS since January 2024



Source: Bloomberg.

**Graph B3.9**  
Inflation Uncertainty



Note: Measured as the standard deviation of one-year inflation expectations, based on Banco de la República's monthly expectations survey.  
Source: Banco de la República.

uncertainty about future inflation<sup>4</sup>; 2) the fiscal deficit (as a share of GDP); 3) risk appetite in emerging economies<sup>5</sup>; 4) lower liquidity<sup>6</sup>; and 5) to a lesser extent, sociopolitical risk, as measured by the *Financial Opinion Survey*<sup>7</sup> (EOF in Spanish).

**The deterioration of the country's fiscal outlook is a factor that may explain the increase in long-term interest rates observed since 2024.**

On one hand, the fiscal deficit increased from 4.2% of GDP in 2023 to 6.7% in 2024. Furthermore, the *Medium-Term Fiscal Framework* (MTFF) published in June by the Ministry of Finance activated the escape clause of the fiscal rule for a three-year period, forecasting a deficit of 7.1% of GDP in 2025 and 6.2% in 2026, levels significantly higher than the 2.5% recorded in 2019, before the COVID-19 pandemic. This contributed to the recent downgrade of the sovereign credit rating by S&P and Moody's, announced at the end of June, which resulted in the loss of investment grade<sup>8</sup> of TES (foreign currency bonds had already lost it in 2021).

**This challenging outlook for public finances is also reflected in the perceptions of analysts and the market.**

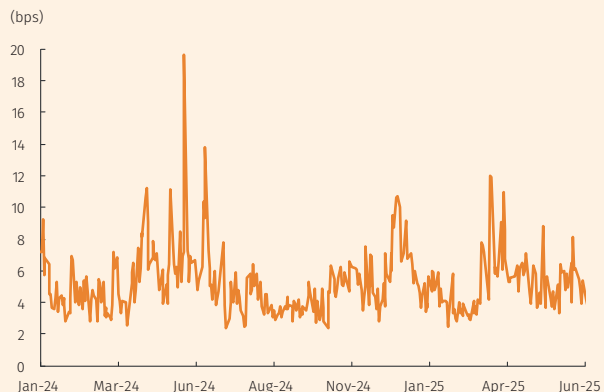
The EOF shows that over the past two years, the number of agents identifying the fiscal front as the main risk to the local market has increased significantly (Graph B3.7). Likewise, the country's risk premium, measured by the five-year credit default swaps (CDS), has increased considerably over the same period, exceeding that of other countries in the region (Graph B3.8).

**In turn, other factors that contribute to explaining the compensation paid for holding long-term sovereign securities have recently performed favorably and therefore would not explain the upturn observed since 2024.**

In particular, measures of inflation uncertainty (Graph B3.9) and market liquidity (Graph B3.10) have shown a downward trend, although they remain above their historical averages. Similarly, the relevance of sociopolitical conditions has declined, although it continues to be the second most relevant factor for agents when making investment decisions (Graph B3.7). While these three factors have performed favorably during this period, their still-high levels could contribute to long-term interest rates remaining high relative to their historical averages. Finally, risk appetite toward emerging economies has rebounded during 2025, in line with the favorable performance of public debt securities in most countries in the region (Graph B3.11).

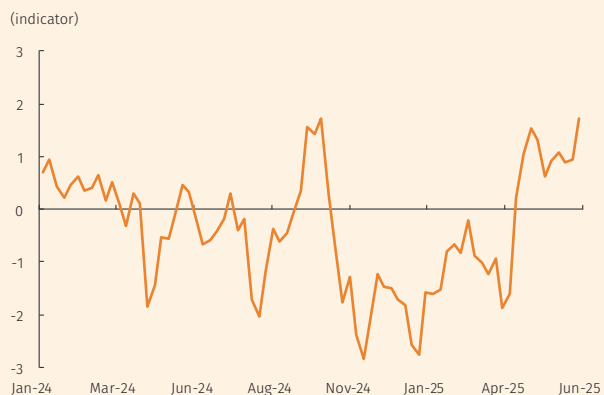
- 4 Measured as the standard deviation of one-year inflation expectations from *Banco de la República's* monthly expectations survey. Studies such as that by Ceballos, Naudon, and Romero (2016) use this variable to measure compensation for inflation risk.
- 5 Measured using the variable of appetite for currency risk toward emerging countries calculated by JP Morgan.
- 6 Measured using the bid-ask spread (BAS) of TES. A lower level of this variable indicates greater liquidity in the TES market.
- 7 Each month, Fedesarrollo and the Colombian Stock Exchange (BVC in Spanish) publish the Financial Opinion Survey EOF, in which one of the questions posed to analysts and portfolio investors is about the most relevant factors when making their investment decisions. One of the possible answers is sociopolitical conditions.
- 8 On 26 June, Moody's downgraded the government's credit rating from Baa2 to Baa3 (stable outlook), still one notch above investment grade. One the same day, S&P Global Ratings also downgraded the foreign currency rating from BB+ to BB, and the local currency rating from BBB- to BB+ (both with negative outlooks). S&P's decision means that TES (local currency debt) has lost its investment grade, as two out of three ratings are now below investment grade (Fitch Ratings had already downgraded Colombia's local and foreign currency debt to below investment grade in 2021).

Graph B3.10  
BAS<sup>a/</sup> of TES  
(illiquidity measure)



a/ The Bid-Ask Spread (BAS) is calculated as the median of the difference between the best bid price and the best ask price for each second between 9:00 a.m. and 12:30 p.m. each day, for all peso-denominated TES in the market.  
Source: Banco de la República.

Graph B3.11  
Exchange Rate Risk Appetite toward Emerging Economies



Note: Positive values of this variable indicate appetite for emerging economies; negative values indicate an aversion to these economies.  
Source: JP Morgan.

**In conclusion, the increase in long-term interest rates on Colombian public debt is mainly explained by an increase in the compensation for investing over longer terms, which would particularly be associated with the deterioration of the country's fiscal outlook.**

### References

Adrian, T.; Crump, R. K.; Moench, E. (2013). "Pricing the term Structure with Linear Regressions," *Journal of Financial Economics*.

Botero, Ó.; Mateus, J.; Ruíz, C. (2023). "Factors That May Influence the Resistance to Inversion of the Yield Curve in Colombia," *Financial Markets Report 2023, Q2*.

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