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Approach

As with the foreign trade of goods and services, the Colombian economy has a significant degree of openness towards the international capital market. Hence, capital inflows and outflows in the country are very active and respond to countless economic variables and stimuli.

One of the most significant components of such flows are the so-called portfolio flows, which include investments in public debt instruments, stock, and corporate bonds . The economic agents involved in these markets include investment funds, pension funds, commercial banks, and private investors who may be residents or non-residents of the country. Portfolio flows can provide significant benefits to the country because they complement domestic savings, promote the financial sector's competitiveness, and contribute to financing consumption and investment. However, they also create risk and uncertainty due to the speed and ease with which they can be withdrawn from the domestic market and their high sensitivity to changes in economic or other variables. The policymakers' main concern is how to mitigate massive capital outflows and inflows and their high volatility, especially during highly uncertain periods in financial markets. Hence, it is of primary importance for the monetary authority to know the determinants of portfolio flows, their composition and direction, and how they react to monetary and foreign exchange policy actions.

Contribution

To address these concerns, this edition of ESPE (*Ensayos sobre Política Económica* in Spanish) examined the performance of portfolio flows since 2003 and carried out econometric model estimations to determine their responses to various shocks. It also included a box analyzing the recovery of portfolio flows in emerging economies and Colombia after the pandemic. The study period covered by this paper was characterized by major economic shocks such as the Great Recession (2008-2009), the Oil Price Collapse (2014-2015), and the COVID-19 pandemic in 2020. Additionally, there were significant regulatory and market changes regarding the tax treatment of portfolio investments and the inclusion of TES[1] in global bond indexes in local currency. These events determined structural breaks in the performance of portfolio flows that were identified in the first section of the study and were considered in the estimations carried out in the other sections of the document.
In the sections that evaluate the determinants of capital flows, different economic models were used in accordance with the specific questions that each section sought to answer. Likewise, alternative sources of information were used, such as the balance of payments and the foreign exchange balance, which contain substantial differences in the origin of the information, data coverage, and time series frequency. The use of a diversity of methodologies and sources of information allowed for evaluating the responses of portfolio flows to their determinant variables from different angles, thus enriching the results of the study.

> ***Portfolio flows can provide significant benefits to the country because they complement domestic savings, promote the financial sector's competitiveness, and contribute to financing consumption and investment. However, they also create risk and uncertainty due to the speed and ease with which they can be withdrawn from the domestic market and their high sensitivity to changes in economic or other variables.***

Results

In section 2, a meta-analysis technique was used to make a statistical synthesis of the literature associated with the effects of monetary policy on capital flows in emerging economies. The results showed that capital flows have greater sensitivity to shocks in the domestic monetary policy rate than to changes in the external rate. It was also found that such an effect is more significant in economies with a high degree of financial openness. The results placed Colombia in the group of countries with above-average financial openness, where a relaxation of the monetary stance leads to a significant portfolio capital outflow.

In turn, section 3 studied the determinants of non-resident net capital flows, differentiated by financial instruments , including fixed income (TES and corporate bonds) and equities (stocks). Balance of payments statistics were used for this study. The results showed that both domestic and foreign policy interest rates significantly affect TES investments, as do changes in inflation, but less importantly. Moreover, the stock market was not sensitive to changes in the domestic policy rate. On the contrary, portfolio flows into local corporate bonds showed a negative response to FED interest rate increases.

Section 4 analyzed the sensitivity of sovereign debt flows in Colombia to the composition of the foreign investor base between investment funds and pension funds. It was found that the investments of investment funds are particularly susceptible to changes in global factors, including risk aversion and external interest rates. In contrast, investments of pension funds are more stable to these changes, given the long-term nature of their obligations.

Section 5 examined the responses of resident and non-resident investors' portfolio flows to changes in internal and external variables. The estimates based on the foreign exchange balance information showed many mismatches in the sign and significance of the explanatory variables of resident and non-resident portfolio capital flows. This suggests that these groups of investors react differently, and sometimes in opposite ways, to the same economic shocks. As a result, it was found that there is some compensatory behavior between the capital flows of resident and non-resident investors, which tends to smooth the net effect of shocks to external or internal variables on portfolio capital flows in Colombia. Additionally, it was observed that variations in the domestic monetary policy interest rate do not significantly impact the portfolio flows of such investors.

Finally, section 6 showed that the relationship of capital flows in relation to their fundamental determinants changes at different points in the financial cycle in such a way that they respond differently in boom periods (high levels of inflows and/or low levels of outflows) or bust periods (significant reductions in inflows and/or substantial increases in outflows).

[1] The Spanish acronym for Treasury Bonds: Bonds issued by the Colombian government and managed by *Banco de la República* (the Central Bank of Colombia).