

Box 1 - RECENT PERFORMANCE OF THE EXCHANGE RATE IN COLOMBIA

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Introduction

The Colombian peso depreciated 39.4% against the dollar between July 2014 and March 2015. During that period, the exchange rate rose from a monthly average value of COP 1,858 per dollar to COP 2,591. In April, despite some turnaround in the weakening of the peso, the exchange rate was well above the levels observed in June 2014 (COP 2,496) (Graph B1.1). Given the importance of this variable to Colombia's economic performance and inflation rate, this section looks at several factors that can explain the behavior of the exchange rate in the latest period and verifies, through the use of statistical models, its relationship with those factors during the last decade.

Factors Recently Affecting the Exchange Rate

As illustrated in graphs B1.2 and B1.3, the exchange rate shows a close relationship with the movement in the price of oil and in the United States Trade Weighted

Graph B1.1
Exchange Rate of the Colombian peso against the Dollar



Source: Banco de la República.

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Dollar Index (USTWI), which compares the behavior of the US dollar to the currencies of the country's major trading partners. Both correlations have increased substantially since mid-2014.¹

As mentioned, the first factor that caused the peso to depreciate to such an extent against the dollar was the sharp drop in the price of oil.² For example, the Brent reference went from an average price of USD 112.2 per barrel (bl) in June 2014 to USD 59.8 / bl in April 2015, reaching its lowest average level since 2009 in January (USD 48.9 / bl). The bulk of this reduction is attributed to an increase in the global supply of oil, thanks to added production of unconventional extraction, especially in North America, since the Organization of Petroleum Exporting Countries (OPEC) decided not reduce quotas in an effort to preserve its share of the global market. This drop also would have been accentuated by less demand for oil, mainly due to the slowdown in the emerging economies.

The high correlation between the exchange rate and the price of oil is explained by the importance of the oil industry to the Colombian economy. Regarding the average figures for 2014, exports of oil and its derivatives account for approximately 50% of Colombia's total exports of goods, while foreign direct investment (FDI) in the Colombian oil sector accounts for approximately 30% of the total. Furthermore, both the current account and capital account in the oil sector have posted a surplus in recent years. This shows that a considerable proportion of the foreign currency that flows into the country is destined for the oil industry. In addition, national government revenue from this item represents about 14.7% of the total. This implies expectations of a possible fiscal downturn, which have led the government to adjust part of its budget and to raise its fis-

1 This behavior persisted during the course of April and part of May 2015, months when this report had not yet been published.

2 See Box 1: "Determinantes de la disminución reciente del precio del petróleo, evaluación de pronóstico y perspectivas" in the December 2014 edition of the *Inflation Report* and Box 1: "Comportamiento del precio del petróleo desde junio de 2014" in the April 2015 edition of the *Financial Markets Report*.

cal deficit forecasts for the coming years.³ Therefore, and because an important part of the drop in oil prices appears to be permanent, the country's risk indicators have deteriorated and foreign earnings are expected to decline. This caused the peso to lose value with respect to the dollar, which explains the high correlation that was observed between the price of oil and the exchange rate (Graph B1.2).

However, the evolution of the Colombian peso against the dollar cannot be explained entirely by the trend in oil prices. Between July 2014 and March 2015, the dollar appreciated against the vast majority of the world's currencies, not only against the Colombian peso or the currencies of oil-exporting countries. As a result, the USTWI index increased 19.8% in value (Graph B1.3).

This widespread gain in strength for the dollar is attributed largely to the difference between the stance of monetary policy in the United States and that of other developed countries. To begin with, improvements in the job market and positive signs for the performance of real activity in the United States have enabled the Federal Reserve (Fed) to indicate it soon will begin to normalize its monetary policy. The Fed also ended its buying program in October 2014 and is expected to

raise its benchmark rate during the second half of this year. This would be the first increase since the most recent global financial crisis. In contrast, the weakness of economic recovery in other developed countries and the risk of deflation in some of them have prompted their monetary authorities to implement a variety of expansionary measures. Accordingly, the European Central Bank (ECB) adopted a financial asset purchase program, including government bonds, which would continue at least until September 2016. It also cut its intervention rates to record lows and has provided liquidity to the banking system in an effort to revive the credit channel.

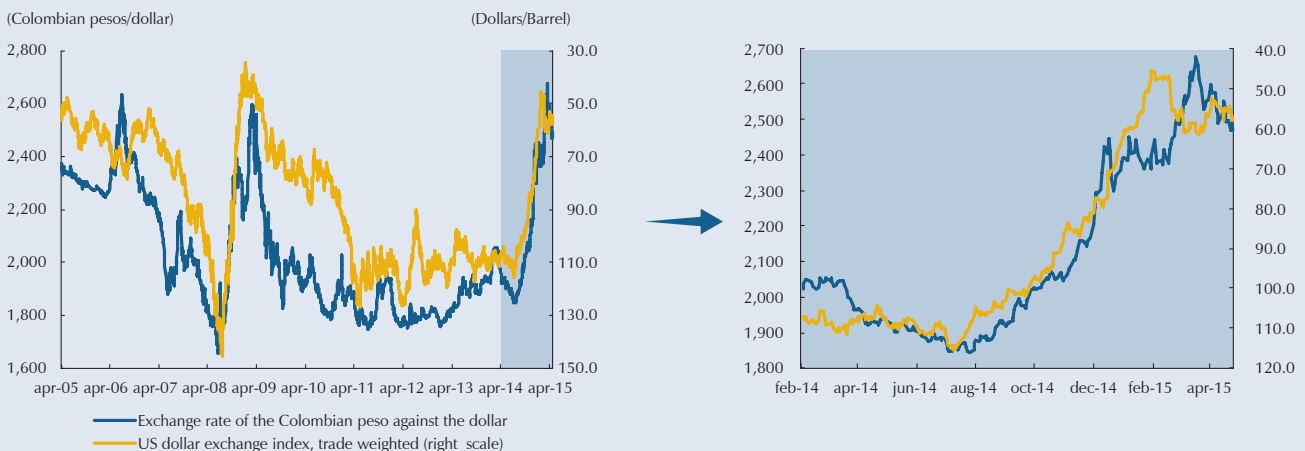
Some central banks, such as those of Switzerland, Canada, Norway and Australia, among others, also have taken their rates to historically low levels, even registering negative benchmark rates in some cases. In addition, the Central Bank of Japan has increased the amounts of financial assets it is prepared to acquire under its quantitative easing plan.

The Relationship between the Exchange Rate and the Price of Oil and the Global Performance of the Dollar in Recent Years

Graphs B1.2 and B1.3 show the correlations described herein were observed in previous periods as well, not just during the last twelve months. As of 2005, one sees a correlation with the price of oil and the USTWI, particularly during episodes where there are major changes in any of these indicators.

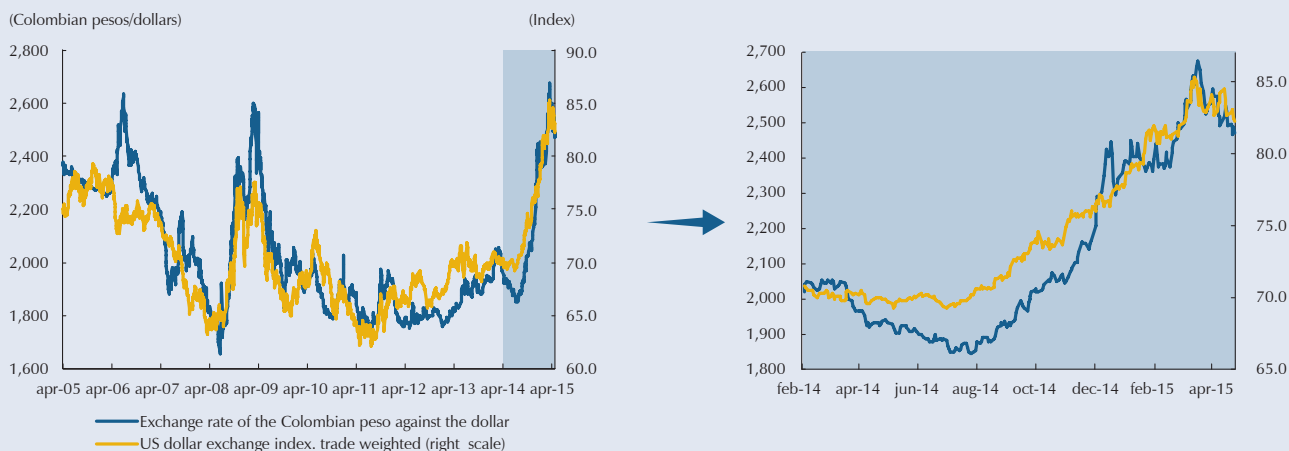
3 The government issued a decree on December 2, 2014 that eliminated approximately USD 6.2 billion from the general budget for 2014 and set the guidelines for an austerity plan. It also announced, on December 23, a revised version of the financial plan for 2015, which indicates the deficit for that year will amount to 2.8% of GDP. This is higher than the estimate outlined in the *Mid-term Fiscal Framework*, which was introduced in June 2014.

Graph B1.2
Price of Oil (Brent Crude) and the Exchange Rate of the Colombian Peso against the Dollar



Sources: Banco de la República and Datastream.

Graph B1.3
Exchange Rate of the Colombian Peso against the Dollar and the US Dollar Exchange Index (Trade weighted)



Sources: Banco de la República and Bloomberg.

The relationship between the exchange rate and the price of oil and the USTWI was estimated with different econometric models⁴ to arrive at a more precise analysis. The linear regression method is used, taking into account the effects of daily volatility,⁵ and a VARX-MGarch model⁶ is used with the aforementioned variables. Other variables that can affect the behavior of the exchange rate were controlled as well. In the first case, the VIX (a measure associated with international risk) and US Treasury bonds⁷ were added as exogenous variables. In the second model, we added credit default swaps (CDS), the net position in derivatives of foreign agents with local agents, and the own cash position⁸ of exchange market intermediaries as endogenous variables, along with the controls for the first exercise.

As expected, a statistically significant relationship was found between the exchange rate and oil prices and

the USTWI. In other words, a lower oil price and a general strengthening of the dollar depreciate the exchange rate. It also was found that the exchange rate responds more to the behavior of oil prices than to changes in the USTWI.

Conclusions

The recent behavior of the exchange rate was explained mainly by the movement in oil prices and by a stronger dollar. Statistical evidence for this correlation was found with data as of 2005. This being the case, it is important to monitor these variables in an effort to anticipate possible movement in the exchange rate and, therefore, in the principal Colombian macroeconomic variables that might be affected.

4 Specification tests were performed and, in general terms, no evidence of misspecification was observed.

5 Through Garch models.

6 For details on the model, see Melo & Rincón (2012), "Choques externos y precios de los activos en Latinoamérica antes y después de la quiebra de Lehman Brothers," *Borradores de Economía*, No. 704, Banco de la República.

7 Ten-year rates taken from <http://www.federalreserve.gov/pubs/feds/2006/200628/200628abs.html>

8 The own cash position of exchange market intermediaries is defined as the difference between all assets and liabilities denominated in foreign currency (External Regulatory Circular DODM-139 dated March 20, 2015).