ANALYZING COLOMBIA’S EXCHANGE RATE:
IS THE COUNTRY IN A CURRENCY CRISIS?

Master of Arts in Law and Diplomacy
Capstone Project

Submitted by MAURICIO CARDENAS-GONZALEZ
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ACKNOWLEDGMENT

It is my great pride that I hereby present my master thesis. It has been a long journey with several days working on this research, from which I have gained a lot of knowledge. It has been a very productive experience to develop my research and analytical skills analyzing for my future professional career.

This is the opportunity to give all my gratitude to my brilliant professors who were my motivation to continuing learning about economics.

I want to express my gratitude to my mother, whose unconditional support has been fundamental in get my academic goal at The Fletcher School of Law and Diplomacy.
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I. Introduction / Motivation

A Currency Exchange Crisis (CEC) is one of the many sources of destabilization for any economy. Since the second half of 2014, the Colombian peso has been depreciating, with the exchange rate falling over 41% by 2015\textsuperscript{1}. There has been a clear linkage between this phenomenon and the behavior of oil prices. As of August 2015, oil prices had plunged by almost 60% in the previous year\textsuperscript{2}. Because oil exports are one of Colombia’s main sources of foreign reserves, concerns have arisen about the effects of a depreciation on the economy – spike in inflation, increased foreign debt and fiscal deficit –.

Given the difficulties and challenges imposed by the fall of oil prices and its consequent effect on the exchange rate, this paper will assess whether or not the Colombian peso is likely to be in a current currency exchange crisis.

The first section of the paper provides a historic background of Colombia’s exchange rate regimes, and episodes where deep depreciations have also occurred. The second section of the paper encompasses a basic notion of what a currency exchange crisis is. The third section analyses whether or not Colombia’s current exchange rate depreciation may be considered as a case of a currency crisis, and also whether this phenomenon is a symptom or a cause of another economic disease. The fourth section makes a comparative study of similar periods of currency crises in countries such as Brazil, Venezuela and Argentina. The final section draws some conclusions.

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II. Colombia’s Exchange Rate Regimes: A Historical Perspective

Colombia’s exchange rate policy has been characterized as shifting from a fixed to a more flexible exchange rate regime since the second half of the XX century. The main exchange rate regimes since then can be summarized as follows: a) *crawling peg*; b) *exchange rate floating bands*; and c) *free floatation*.

During the period 1967-1991, Colombia adopted an exchange rate system called “*crawling peg*”. In this regime, the currency was allowed to have small, subsequent and predicted devaluations. The goal was to allow a steady, although slow, devaluation of the Colombian peso. The rationale was to promote stability for firms to be able to compete in foreign markets and also to avoid currency crisis and the loss of foreign reserves\(^3\). A strict capital control system was put into practice, where the Central Bank had control over the foreign exchange market\(^4\).

![Figure 1. Real Exchange Rate Index (US Dollar- Colombian Peso)](image)

Source: Central Bank of Colombia, 2010

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\(^3\) VARGAS, Hernando. *Exchange Rate Regimes in Colombia*. Central Bank of Colombia, November 2010. P.6

In 1991, with the establishment of a new political constitution in Colombia, a new era of economic policy was underway, leading thus to a change on monetary and exchange rate regimes. Reforms were adopted to encourage open market (trade and capital), labor and financial policies in the country. The Central Bank was given independence, with the ultimate goal of preserving the purchasing parity power of the Colombian peso\(^5\). Therefore, in 1994, the country adopted a system of *exchange rate bands*, within which the currency would be allowed to float, while giving the Central Bank authority to intervene in the market to maintain the currency within the bands.

![Figure 2. Exchange Rate Bands and Market Representative Exchange Rate](image)

Source: Central Bank of Colombia, 2010

The exchange rate bands system was maintained until 1999. The Russian (default) and Asian Tigers crises led to a capital outflow in the Colombia and a rise in the country risk premium. Even though the authorities tried to keep the currency under control and within the bands by selling foreign reserves and raising interest rates, efforts proved to be insufficient. An economic crisis was underway, with output falling by 4% on average in 1999, and unemployment raising by 16% in 2000\(^6\).

\(^6\) World Development Indicators, World Bank Dataset, 2015.
Not only was the exchange rate band shifted upwards (to allow further depreciation levels), but also abandoned in September 1999. From this time on, the exchange rate was let to freely float and be determined by market forces. The Central Bank intervenes at its discretion, which is the reason why the exchange rate does not fluctuate completely free (“Dirty” Floating Exchange Rate).
The highest level of depreciation during the floatation regime was registered in 2003 (roughly $2,877 COP per dollar), followed by a continuous appreciation of the currency for the following decade. The main factor behind this currency shift—from depreciation to appreciation—may be attributed to the depreciation of the US dollar since 2002. The graph below shows a negative relationship between the US dollar and the Colombian peso Real Effective Exchange Rate. This relationship will also be relevant in explaining the performance of the Colombian exchange rate since the second half of 2014.

Figure 5. Real Effective Exchange Rates, USA and Colombia, 1991-2014

Source: Own Calculations based on World Development Indicators, 2015.

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7 WDI
III. Definition of Currency Crisis

The term “currency exchange crisis” is usually associated to countries whose exchange rates are fixed/pegged, that is, the currency is not freely traded in foreign exchange markets but determined by government monetary authorities (namely the central bank). The crisis comes when the fixed exchange rate breaks, followed by a sudden depreciation of the exchange rate and other costs, both economic and political.9

A currency crisis is related to a surpassing of an exchange rate boundary, which, according to the Council of Foreign Relations, “many economists define as a swift decline of more than 20 percent of a local currency against the dollar.”10 Other authors do not only include the sudden depreciation of the currency into the definition, but also the policies implemented to tackle the disease: “a currency crisis may be defined as a speculative attack on the foreign exchange value of a currency that either results in a sharp depreciation or forces the authorities to defend the currency by selling foreign exchange reserves or raising domestic interest rates.”11

Reinhart, Kaminsky and Lizondo (1998) define a currency crisis as a scenario where either a deep depreciation and/or a loss of international reserves take place, a condition which applies “not only currency attacks under a fixed exchange rate but also attacks under other exchange rate regimes.”12 Colombia holds a flexible exchange rate regime since the end of the 1990s. These definitions will be useful when establishing whether or not Colombia is in a current currency exchange crisis.

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9 FEENSTRA and TAYLOR, International Macroeconomics. P.347.
IV. Is Colombia in a current exchange rate crisis?

a. Colombia’s currency depreciation – Outlook

Looking at Colombia’s exchange rate since 2012, the exchange rate floated around the level of COP $2,000, barely surpassing it just once (February 2014, COP $2,040). The Exchange rate during this period (July 2012-July 2014) was rather stable. However, the exchange rate started depreciating since August 2014 (1,899.07). In August 2015, it reached a level of COP $3,023.29, on average, and COP $3,357.5 in February 2016. This constitutes a devaluation of 59% in a year, and 77% in a year and a half.

![Figure 6. Nominal Exchange Rate - Colombian Pesos per US Dollar, 2012-2016](source)

Based on the performance of the real exchange rate index since early 2014 (2010=100), it can be seen that the Colombian peso lost 37% of its purchasing power in a year and a half (from 102.05 in July 2014 to 64.40 in December 2015).

![Figure 7. Monthly Real Exchange Rate Index, Colombia, - 2014-2015](source)
A further look into the real effective exchange rate index in the last 5 years, shows that this indicator has been falling since 2012, having a slow descent between 2012 and 2014, followed by a sharp fall since 2014 onwards. The real exchange rate has fell by 22% from 2014 to 2015, from 96.44 to 75.58.

![Figure 8. Real Effective Exchange Rate Index, Colombia, - 2010-2015](image)

b. Sources of Crisis

The sharp decline of the Colombian peso lays mainly on the performance of two variables: the strength of the US Dollar and world oil prices.

**US Dollar**

Since July and August 2014, the US economy was doing better compared to other main world economies. This, in addition to political instability by the time (war in Ukraine) and among uncertainty about other regions of the world that were still in recovery (EU, with quantitative easing). This led investors to allocate their resources in the U.S. and taking them out from other economies.

*Figure 9. US GDP in USD billions, 2009-2016*

*Source, FRED, US bureau of economic analysis*

*Figure 10. GDP Growth Forecasts (Annualized Quarterly Percent Change)*

Since September 2014, there were expectations from the Federal Reserve that it would “soon stop its bond-buying program — a change that would lift interest rates and buoy the dollar.”\textsuperscript{13} A final announcement was also made in December 2015, where the FED expressed that it “would raise rates to a range between 0.25 percent and 0.5 percent — (a) beginning of the end for the central bank’s stimulus program”\textsuperscript{14}.

This also contributed to the depreciation of the Colombian Peso in the beginning of 2016. This suggests that both GDP performance in the US and monetary policy expectations of higher interest rates not only had an effect on Colombia’s currency but also other countries’ currencies. The graphs below show GDP growth of the US economy and also how its currency compared vis-à-vis with those from other main economic powers.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Percentage Change of other currencies against the dollar from Dec 31, 2013 levels}
\end{figure}

\textbf{Source, Federal Reserve, New York Times}


**World Oil Prices**

Taking a look at the level of oil prices, the following graph depicts a sharp fall in oil prices since June 2014. The graph shows the fall of the crude oil price index by 69% in January 2016, the lowest level of this index. There is a relation between the rise of the US dollar and the fall of oil prices, as investors see the US currency as a safe haven for investments.

![Crude Oil Price Index (June 2013-February 2016)](image)

Source: Own Calculations, data from IMF Primary Commodity Prices, IMF, 2016.

Another reason is a lower demand for fuel, which corresponds to lower economic activity overall. The following graph shows the decrease in demand for oil by OECD countries, which corresponds to the fall of oil prices. This is true for the second half of 2014. We see that even though the demand for oil rises from 2015, it seems that this was not enough to keep the COP from depreciating. Another reason that explains the downfall in oil prices in a bigger supply of it, mainly, from the United States.

![Demand – 12 Mth moving average demand vs Y/Y growth](image)

Source: OECD/IEA

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15 Crude Oil (petroleum). Price index, 2005 = 100, simple average of three spot prices; Dated Brent, West Texas Intermediate, and the Dubai Fateh
Colombia and Oil

Colombia’s foreign revenue is highly dependent on oil. In this regard, a decline in oil prices negatively affects Colombian sources of income. The charts below show a high share of fuel exports in Colombia’s total merchandise exports (around 70%). Also, oil revenues are a significant source of income for the country, as they contribute to almost 9% of the GDP. This is important, since the performance of oil exports impact negatively on the currency.
c. Symptoms (Indicators) of a Currency Crisis

i. Key Currency Crisis Indicators

Based on the methodology used by Reinhart, Karminsky and Lizondo in their report *leading indicators of currency crisis*, 1998), a number of indicators will be used in the Colombian case. Those indicators are, aside from the real exchange rate, the level of a) international reserves; b) domestic inflation; c) credit to the public sector; d) export performance; e) real GDP growth and f) fiscal deficit.

*International Reserves*

The level of international reserves has reported a different dynamic from that of the real exchange rate. A significant decline of the level of international reserves would be a warning. However, the amount of I.R. has increased from July 2014 to March 2016. International reserves grew until October 2014, followed by a steady, low decline. The level of international reserves has been almost unchanged. In fact, there has been an increase of 2% of international reserves, from 45.501.6 USD Million in July 2014 (beginning of currency depreciation) to 47.225 USD Million in March 2016.

![Figure 16. International Reserves in Colombia (USD Million) July 2014-March 2016](source: Own Calculations, Central Bank of Colombia)
Domestic Inflation

By comparing the levels of inflation by annual variation prior and after the sharp decline of the exchange rate in July 2014, it can be seen an increase in the inflation index (December 2008=100), from 2.51% in July 2014 to 5.91% in March 2016. A greater level of inflation in the economy encourages capital flows from foreign investors to allocate their funds overseas, as their assets priced in Colombian currency lose value, thus deepening the depreciation of the currency.

Figure 17. Colombian Inflation Index, Annual Variation, January 2014- March 2016

Credit to Public Sector

Looking at the levels of credit to the central government (domestic and foreign credit), we can see an increase in the overall level of government debt. Prior to the beginning of the attack on the Colombian peso in July 2014, the domestic credit had a bigger share than the foreign credit of the government’s total debt (72% vs 28% in 2013). In 2015, foreign debt reached a share of 40% on the total debt. The total debt increased by 35% between the levels prior and after the depreciation, with foreign debt increasing by 88% between 2013 and 2015. It almost doubled the level prior the crisis.
Table 1. Colombia National Government – Total Debt
COP Thousands of Million
2013- 2015

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Debt</th>
<th>Internal Debt</th>
<th>External Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>244.714.2</td>
<td>175.877.3</td>
<td>68.836.9</td>
</tr>
<tr>
<td>2014 (pr)</td>
<td>285.400.3</td>
<td>195.610.2</td>
<td>89.790.1</td>
</tr>
<tr>
<td>2015 (pr)</td>
<td>330.715.6</td>
<td>201.106.7</td>
<td>129.609.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Δ 2013-2014</th>
<th>Total Debt</th>
<th>Internal Debt</th>
<th>External Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>17%</td>
<td>11%</td>
<td>30%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Δ 2014-2015</th>
<th>Total Debt</th>
<th>Internal Debt</th>
<th>External Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>16%</td>
<td>3%</td>
<td>44%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Δ 2013-2015</th>
<th>Total Debt</th>
<th>Internal Debt</th>
<th>External Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>35%</td>
<td>14%</td>
<td>88%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Own Calculations, Central Bank of Colombia

Export Performance

The fall in oil prices adversely affected Colombian revenue from oil exports. Since September 2014, oil exports fell from 2,605.7 to 630.9 USD Million in February 2016, leaving the country with a loss of 76% in the value of exports.

Figure 18. Colombian Oil Exports, USD Million
January 2014-February 2016

Source: Own Calculations, Central Bank of Colombia, Colombia National Statistics Agency
Oil exports have, as it was mentioned before, a close relationship with total exports. As the graph shows, the country went from having a total amount of oil exports worth $5.49 USD Billion in May 2014 to having a total amount of exports worth $1.84 USD Billion in February 2016 (decline of 66% in value). This loss of foreign revenue had a negative effect in Colombia’s exchange rate.

**Figure 19. Exports in Colombia, USD Billions, January 2014-January 2016**

![Graph showing exports in Colombia from January 2014 to January 2016.](image)

Source: Trading Economics, Colombia National Statistical Agency

**Real GDP Growth**

The chart below shows that GDP started falling since 2013, with a bigger decrease from 2014 to 2015. This was the result of a combination of a number of reasons, including fewer income from exports, higher inflation, spike in foreign debt, among other issues.

**Figure 20. Total GDP in Colombia, Constant Prices, Annual Variation (%)**

![Graph showing total GDP in Colombia from 2010 to 2015.](image)

Source: Own Calculations, Central Bank of Colombia, 2016
Fiscal Deficit

Data from Colombia’s central bank suggests that the fall in oil prices, oil and total exports, and sharp depreciation of the Colombian peso were also related to a considerable fall of government revenue. Big deficit levels were reached by December 2014. Although there was a recovery after that, it lasted just one semester. The deficit started growing again by September 2015.

Table 2. Government Spending Balance, Thousands of COP Million

<table>
<thead>
<tr>
<th>Month</th>
<th>Income</th>
<th>Expenditures</th>
<th>Interests</th>
<th>Deficit (-) or Surplus (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>March-2014</td>
<td>30.137,5</td>
<td>29.611,5</td>
<td>3.198,3</td>
<td>526,0</td>
</tr>
<tr>
<td>June-2014</td>
<td>35.522,0</td>
<td>34.945,9</td>
<td>3.881,3</td>
<td>576,1</td>
</tr>
<tr>
<td>September-2014</td>
<td>31.598,3</td>
<td>36.674,6</td>
<td>7.167,2</td>
<td>(5.076,3)</td>
</tr>
<tr>
<td>December-2014</td>
<td>28.640,8</td>
<td>43.028,0</td>
<td>2.732,6</td>
<td>(14.387,2)</td>
</tr>
<tr>
<td>March-2015</td>
<td>28.631,7</td>
<td>31.810,1</td>
<td>3.112,6</td>
<td>(3.178,4)</td>
</tr>
<tr>
<td>June-2015</td>
<td>38.666,5</td>
<td>37.474,0</td>
<td>4.731,9</td>
<td>1.192,5</td>
</tr>
<tr>
<td>September-2015</td>
<td>33.656,4</td>
<td>39.553,5</td>
<td>8.141,9</td>
<td>(5.897,1)</td>
</tr>
</tbody>
</table>

Source: Own Calculations, Central Bank of Colombia

A preliminary conclusion that can be stated is that, unlike international reserves, all other indicators (real exchange rate, inflation, credit to public sector, fiscal deficit, export performance, real GDP growth) reported warning signals. Fiscal Deficit is the variable that has reported some progress. This is not the case, however, for the remaining variables evaluated in this section of the paper. Exports performance (oil mainly), the exchange rate, and the foreign debt (credit to public sector) are the most sensitive indicators in the case of Colombia. Their performance suggest that the country displays most of the symptoms of a currency crisis, although not all of them are severe.
d. Is the Currency exchange syndrome a Symptom of Crisis or a Cause of Crisis? Is this a Twin-Triple Crises scenario?

The currency exchange crisis in Colombia was originated by the falling oil prices and is an opposite effect to the US dollar appreciation, under expectations that interest rates would be increased in the United States. In this regard, the currency exchange crisis is a symptom of these two phenomena.

On the other hand, it might be argued that the deep depreciation of the Colombian peso may pave the way for other type of crises, namely a banking crisis or an external debt crisis.

A potential Banking Crisis?

Before reaching preliminary conclusions, nonetheless, the data suggests that the banking sector is experiencing difficult times, although not severe. Because the Colombian peso has considerably depreciated, there has been a pass-through on inflation, as discussed before. The interest rate doubled in a period of 2 years, from 3.50% April 2014 to 7.0% in April 2016. Notice that the Central Bank decided not to raise interest rates for a year, following the start of the depreciation rate (July 2014). After August 2015, the bank has been raising interest rates gradually, but on a more frequent basis.

Figure 22. Colombian Central Bank Policy Rate, 2014-2016

Source: Own Calculations, Central Bank of Colombia
To assess whether or not the country’s depreciation may lead to other type of crisis, a set of indicators (Reinhart, Karminsky, “The Twin Crises: The Causes of Banking and Balance-of-Payments Problems”) will be used. Those indicators, for the case of banking crisis are bank runs and/or nationalization or takeover of financial institutions by the State. Data from financial and banking institutions also suggests that overall economic conditions have proven to be more difficult for economic agents in Colombia. Increases in the level of credit provided by the government to the financial sector after the depreciation. Credit from central bank to financial institutions has become more volatile and greater, compared to periods prior the beginning of depreciation (July 2014).

It is also worth mentioning that the percentage of non-performing loans to total gross loans has also increased. If this worsens, the Government would have to rescue (in a severe scenario) the banks, which may constitute a signal of banking crisis in the future.

Figure 23. Colombian Central Bank Policy Rate, 2014-2016

Source: Own Calculations, Central Bank of Colombia

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17 The Dashed line represents the beginning of the sharp depreciation of the Colombian peso.
Looking at the number of deposits from private clients in the banks, data suggests that there has not been a radical change in deposits after the depreciation of the exchange rate. There are no signs of bank runs. In sum, for the time being, indicators show the banking sector may be facing a tough time in the future. The link between the exchange rate, inflation, and loans/credit may be more evident as time goes by. There are some symptoms that may translate into a banking crisis later, if not addressed appropriately.

\[\text{Figure 23. Colombian Central Bank Policy Rate, 2014-2016}^{18}\]

\[\text{Figure 24. Non-Performing Loans to Total Gross Loans (\%) Colombia, 2013-2015}\]

\[\text{Source: Own Calculations, WDI}\]

\[\text{Source: Own Calculations, Central Bank of Colombia}\]

\[\text{Ibid.}\]
A potential External Debt Crisis?

As for a possible external debt crisis, data shows that the country has experienced a negative effect of the exchange rate depreciation on the country’s foreign debt. The graph below shows both an increase at the level of foreign debt, in US dollars and in Colombian pesos. The increase in US-dollars-denominated debt may correspond to fill the revenue gap from fewer income from exports due to falling oil prices -which may also explain the lack of decrease in international reserves as one might expect-. The increase in the Colombian-pesos denominated debt corresponds to the significant increase in the exchange rate.

Figure 24. Colombian Central Government External Debt, 2014-2016

![Graph showing Colombian Central Government External Debt, 2014-2016](Source: Own Calculations, Central Bank of Colombia)

This is a worrisome figure. The uncertainty about the exchange rate crisis has also led to increases in the EMBI for Colombia, as well. This indicator has also reported a similar upward trend, as well as the increase in the exchange rate and the amount of foreign debt.

Figure 25. Emerging Market Bond Index, Colombia 2014-2016

![Graph showing Emerging Market Bond Index, Colombia 2014-2016](Source: www.ambito.com)

19 http://www.ambito.com/economia/mercados/riesgo-pais/info/?id=4
The Graph below shows us how the external debt has increased, particularly the public debt. As of 2016, the total foreign debt accounts for 40% of Colombia’s total GDP. It went from 25% in 2013, to 40% in 2016. It almost doubled in 3 years.

In sum, the results suggest that the country is in a risky position with regard to a possible sovereign default. As long as the exchange rate keeps depreciating, risk perceptions will also, which will affect the level of foreign debt. In that regard, one may argue that the country is not in a triple crises scenario (exchange rate, banking and external debt), but arguments can be made to state that the country is likely to experience a twin-crisis scenario (exchange rate and external debt). While there have been warning signals from the banking sector, the risks are more imminent in the case of the external debt.
V. Cross-Country Comparative Analysis - Currency Exchange Crises

In order to make the analysis stronger, further research was conducted. In this sense, the cases of other countries with currency crises were useful to provide a benchmark for comparing the data of Colombia to determine whether or not Colombia’s currency depreciation may deepen into a more severe exchange rate crisis.

Based on the currency crisis indicators methodology developed by Reinhart, Karmisnky and Lizondo, a comparative analysis is shown, where a set of indicators from two Latin American countries experiencing currency crises in the past (Argentina and Brazil) are analyzed and compared to Colombia’s performance in such indicators. A period of crisis may encompass 2 to 3 years; in some cases, the indicators report considerable changes two years before the beginning of a currency crisis. The results are shown below as follows.

a. Nominal and Real Exchange Rates

Looking at the nominal exchange rates before and after the sharp depreciation in all three Countries, Argentina shows the worst performance (206% depreciation in one year). Colombia’s depreciation is smaller than those from Argentina and Brazil. However, Colombia’s depreciation is somewhat close to that of Brazil (37% to 56%). Looking at the real exchange rate indexes, Argentina is the weakest, followed by Brazil and Colombia. The distances between theses indexes are not as big as in nominal terms, which may be a reason to be concerned.

Table 3. Nominal and Real Exchange Rates. Brazil, Argentina, Colombia by Period of Currency Crisis.

<table>
<thead>
<tr>
<th>Country</th>
<th>Brazil</th>
<th>Argentina</th>
<th>Colombia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1*</td>
<td>1.16</td>
<td>1.00</td>
<td>2.001,78</td>
</tr>
<tr>
<td>Year 2*</td>
<td>1.81</td>
<td>3.06</td>
<td>2.741,88</td>
</tr>
<tr>
<td>% Δ Nominal Exchange Rate</td>
<td>56%</td>
<td>206%</td>
<td>37%</td>
</tr>
<tr>
<td>Year 1**</td>
<td>93,59</td>
<td>274,55</td>
<td>96,44</td>
</tr>
<tr>
<td>Year 2**</td>
<td>62,23</td>
<td>124,77</td>
<td>75,58</td>
</tr>
<tr>
<td>% Δ Real Exchange Rate</td>
<td>-34%</td>
<td>-55%</td>
<td>-22%</td>
</tr>
</tbody>
</table>

*National Currency per US Dollar, Period Average
** Real Exchange Rate. Index, 2010=100. Data from IMF, and St Louis, FRED for Argentina, average computed by the author
b. **International Reserves**

Argentina and Brazil report a significant loss of foreign reserves. It is worth noting that the level of international reserves started falling even two years before the currency crisis took place. In the Colombian case, International Reserves even increased despite the depreciation of the Colombian peso. In this regard, the good performance of this indicator in the Colombian case has not contributed to a further depreciation of the currency and not been a source of further instability.

| Table 4. International Reserves. Brazil, Argentina, Colombia by Period of Currency Crisis. |
|----------------------------------|-----------------|-----------------|-----------------|
| *International Reserves*         | Brazil          | Argentina       | Colombia        |
| Year 1                           | 50.826          | 25.147          | 42.758          |
| Year 2                           | 35.269          | 10.489          | 46.104          |
| % Δ                              | -31%            | -58%            | 8%              |

*US Million, Total Reserves excluding Gold. Source: IMF

c. **Inflation**

Inflation reports a very bad performance for Argentina in 2002. Colombia’s inflation rate is, however, bigger than Brazil’s. An increase in inflation for the Colombian case may not be a leading signal of a currency crisis, but it might be in the long run.

| Table 5. Inflation. Brazil, Argentina, Colombia by Period of Currency Crisis. |
|----------------------------------|-----------------|-----------------|-----------------|
| *Inflation*                      | Brazil          | Argentina       | Colombia        |
| Year 1                           | 3.20            | -1.07           | 2.90            |
| Year 2                           | 4.86            | 25.87           | 4.99            |
| % Points Δ                       | 1.66            | 26.93           | 2.09            |

* Average consumer prices. Units: % Change. Data from WEO, IMF
d. \textit{Exports}

Exports fell in all of the three countries, but Colombia reports the weakest performance in this indicator. This explains that, unlike Argentina or Brazil –where the currency crises were associated with losses in foreign reserves–one of the main factors of Colombia’s current depreciation is an external shock, coming from the fall in oil prices, Colombia’s main source of foreign revenue. This makes the depreciation of the Colombian peso different from those of the Argentinian peso and the Brazilian real.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|}
\hline
\textbf{Exports*} & \textbf{Brazil} & \textbf{Argentina} & \textbf{Colombia} \\
\hline
\hline
\textbf{Period of Crisis Covered} & 51.139.86 & 26.542.70 & 54.788.00 \\
\hline
\textbf{Year 1} & 48.012.79 & 25.649.50 & 35.606.30 \\
\hline
\textbf{Year 2} & -6\% & -3\% & -35\% \\
\hline
\end{tabular}
\caption{Exports. Brazil, Argentina, Colombia by Period of Currency Crisis.}
\end{table}

\textit{Note: * Goods, Value of Exports, FOB, US Dollars. Data in Million, IMF}

e. \textit{GDP Growth}

Argentina shows the biggest fall in output. It is worth mentioning that the fall in output had even begun 2 years prior to the sharp depreciation of the currency in Argentina and Brazil, which is why a 2-year benchmark was used to compare these data with Colombia’s data as well. In the Colombian case, we can also see that GDP has been falling since 2013 (almost 2\% points). This shows a relationship between the depreciation and fewer economic activity.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|}
\hline
\textbf{GDP Growth*} & \textbf{Brazil} & \textbf{Argentina} & \textbf{Colombia} \\
\hline
\hline
\textbf{Period of Crisis Covered} & 3.40 & -0.79 & 4.874 \\
\hline
\textbf{Year 1} & 0.47 & -10.90 & 3.082 \\
\hline
\textbf{Year 2} & -2.93 & -10.11 & -1.792 \\
\hline
\end{tabular}
\caption{GDP Growth. Brazil, Argentina, Colombia by Period of Currency Crisis.}
\end{table}

\textit{Note: * Gross domestic product, constant prices (Percent change), Data from WEO, IMF}
f. Public Debt

<table>
<thead>
<tr>
<th>Period of Crisis Covered</th>
<th>Brazil</th>
<th>Argentina</th>
<th>Colombia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>32.84</td>
<td>38.08</td>
<td>49.55</td>
</tr>
<tr>
<td>Year 2</td>
<td>48.50</td>
<td>137.72</td>
<td>62.24</td>
</tr>
<tr>
<td>% Δ</td>
<td>48%</td>
<td>262%</td>
<td>26%</td>
</tr>
</tbody>
</table>


* Source: Colombian Central Bank, Own Calculations

* Source: WEO, IMF

As for the levels of Public Debt, data showed that increases in the Debt to GDP ratio started 2 years prior to the currency crisis in Argentina and Brazil. Taking a look at the numbers, all three countries reported increases in the amount of debt, Argentina being the country with the biggest increase in the ratio. While Colombia’s debt to GDP ratio is smaller compared to the other countries, is still a matter of concern. Debt increased by one quarter of Colombia’s GDP in 2 years.

To conclude, Argentina reported the worst performance in most of the indicators (inflation, Public Debt, International Reserves, GDP Growth, Exchange Rate depreciation). Brazil and Colombia have a similar performance in most of the indicators (inflation, Public Debt, GDP Growth) being Brazil’s performance worse than Colombia’s. Colombia does not have a problem of international reserves compared to the other countries, but it does, however, in exports. Colombia’s performance is, however distant from Brazil’s, still similar to this country’s, which does not prevent Colombia’s indicators from worsening in the future.
VI. Conclusions

- The data suggests that Colombia is indeed in a currency crisis. Although the country has not depleted its stock of foreign reserves (which is very favorable), a number of indicators reveal that overall economic conditions have deteriorated and may worsen in the future.

- Colombia’s currency crisis is strongly linked to fewer income from exports, mainly, from falling oil prices. The appreciation of the US dollar has also contributed to the deepening of the depreciation of the Colombian currency.

- The currency crises may also lead to other kind of crises. Although there is not enough evidence to conclude that the banking sector is in an immediate danger, increases in inflation rates, interest rates and non-performing loans may place the government under stress. Regarding a debt crisis, there is a high concern that the country may be in a current twin crises scenario (exchange rate – sovereign debt), as the level of foreign debt has increased considerably since the beginning of the depreciation.

- It is worth highlighting the fact that reserves have remained untouched, despite strong speculative attacks against the Colombian peso. This suggests that the Central Bank may be using other sort of mechanisms to intervene (may be loans) rather than reserves. The fact that Colombia is in a free floating regime also contributes to not depleting reserves, which is good for the economy, as well.

- Although the Colombian crisis does not seem to be as severe as Argentina’s or Brazil’s, there are some reasons to be concerned. Colombia’s performance has been very similar – although not as severe- to Brazil’s by the time of its crisis.

- Colombia’s high dependency on oil exports has put it under stress. As long as the price of oil continues to be low, Colombia will continue to suffer. The country will need to find new products/sources of revenue to move forward, although it is always easier said than done.
VII. Bibliography


