

# The Fiscal and Monetary History of Colombia: 1963-2012\*

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## 1 Introduction

The objective of this paper is to characterize the joint history of monetary and fiscal policies in Colombia after 1963 following the general framework by Kehoe et al. (2013). In doing so, we aim to shed light on the general question of whether bad fiscal and monetary policies in Colombia led to macroeconomic instability, thus hampering long-term growth, as seemed to be the case in several other Latin American economies.

This paper represents the first recent exercise at exploring the history of primary deficit finance and the joint determination of fiscal and monetary policies in Colombia. Existing papers focus separately on the history of debt, fiscal policy, and monetary policy: Junguito and Rincón (2007) constructed long-term data series to study the history of fiscal policy and debt in Colombia since 1900; Lozano (2002) and Lozano et al. (2007) analyze how public debt evolved in the late 90's; work by Avella Gómez (2007a) and Avella Gómez (2007c) contains extensive research on the cycles of foreign indebtedness in Colombia since its Independence in the early XIXth century; Avella Gómez (2009) and Sánchez et al. (2007) study the history of monetary policy in Colombia, together spanning the period between 1886 and the present day.

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Our analysis gravitates around the evolution of the primary deficit of the Colombian central government and its sources of financing during the period between 1963 and 2012. The paper identifies three periods in which primary deficits were financed mainly with foreign debt (1963-1975), monetary emission (1976-1991) and domestic debt (1991-2012). A detailed analysis of these periods will serve as the thread of the discussion of the paper.

Our main argument is that, in the context of a heavily controlled Colombian economy, bad fiscal and monetary policies were the exception rather than the rule: Budget deficits (see Figure 1) were not too large during the period of study, peaking at only around 6% of GDP at the end of the nineties; and budget deficits were only financed predominantly with money emission during the period 1976-1991. This did not lead to huge macroeconomic instability not only because deficits were not large but also because policymakers employed heavy financial repression to control key monetary aggregates. Apart from the period 1976-1991, deficits were predominantly financed with debt (foreign and domestic, depending on the period). Remarkably, the government did not default on its foreign or domestic debts during the period of study.

The rarity of large macroeconomic imbalances in Colombia did not, however, foster long-term economic growth relative to her Latin American peers. Figure 2 demonstrates that the economic performance of Colombia during this period, measured as real per capita GDP, was worse than average among comparable Latin American economies. Additionally, Colombia did not catch up to its peers either (see Figure 3). The roots of relative stagnation in Colombia amidst a stable macroeconomic environment have probably more to do with the heavy use of financial repression and economic management as alternative to fiscal discipline as a means to monetary control.

Before proceeding, a very brief description of a macroeconomic background of the Colombian economy is in order. Figures 4 and 5 present the evolution of real GDP growth and CPI inflation in the period of analysis. The first observation that stands out is that the Colombian economy has been relatively less volatile than several of its Latin American peers: during this period there has not been hyperinflationary episodes (although inflation was high and persistent during the seventies and the eighties) and growth has been relatively stable.<sup>1</sup>

The paper unfolds as follows. Section 2 presents the main focus and characteristics of our data, which is also innovative as we focus only on effective operations of the central government. This allows us to determine the exact finance structure of the primary deficit at annual frequency. Section 3 shows the theoretic framework we use to analyze the financing of the deficit. Section 4 presents the evolution of finance sources for the three subperiods of

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<sup>1</sup>The worst recession since records began occurred in 1998-1999, with a trough real growth of -4.2% in 1999, a relatively small contraction compared to other Latin American economies.

analysis. Section 5 analyses the relation between the nominal exchange rate and the primary deficit, as well as the interaction of financial repression and monetary and fiscal policy. Some elements to define the future research agenda are provided in section 6.

## 2 Data

To understand the role that monetary and fiscal policy have played in Colombia, we focus on how the national central government financed its primary deficit since 1963; that is, ministries, Congress, judiciary system, National Police, administrative departments, superintendencies and other supervisory bodies, among others. We exclude local governments and government-owned firms from our analysis for three main reasons: First, Colombia has a centralized government where local governments finance their expenses mostly with transfers from the central government. Since 1968 the central government is required by law to transfer resources from value added tax and social security to local governments and with the new Constitution of 2001 transfers increased. There are particular local taxes that local governments can levy, and some local governments even issue bonds that are publicly traded, but the latter sources are not the most important sources for financing.<sup>2</sup>

Additionally, the national central government is in charge of shaping fiscal policy and is the only government body that may be able to influence monetary policy. Finally, we are able to collect consistent data for how the national central government finances its fiscal deficit that goes back to 1963. Therefore, when we refer to debt, deficit, expenditures, income, etc we are referring to claims on the central national government.

In this project we will focus on the effective operations that the national central government carried out to finance its deficit. That is, we analyze how each peso of the fiscal deficit was financed. To the best of our capacities we are able to identify the exact sources of financing for every year since 1963. Not only are we able to explain how the fiscal deficit evolved since this year, but with our data we are also able to analyze explicitly the role played by fiscal and monetary policy in financing this deficit.

We rely on various sources to compile data. We use data from García García and Guterma (1988) for the period between 1963 to 1985. We rely on Banco de la República Colombia (1989) and Banco de la República Colombia (1991) to get information for government financing from 1986 to 1989. For the data from 1990 to 2002 we use government financing as calculated by the Technical and Economic Information Department of the Banco de la

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<sup>2</sup>According to the Comptroller General of Colombia by 2014 the debt of local governments represents around 3% of the debt of the national central government. Additionally, local governments are restricted in how much debt they can issue, as explained thoroughly in Sandoval et al. (2000). See Iregui et al. (2004) for an analysis of local taxes in Colombia and Lozano (1998) for an analysis of transfers to local governments.

República Colombia.<sup>3</sup> They rely on information supplied by the Ministry of Finance and Public Credit and calculate back government financing such that it is consistent with the accounting procedure agreed with the IMF since 2001. Finally, since 2003 the Ministry of Finance and Public Credit shows in its webpage detailed information regarding the financing of the fiscal deficit following international standards.

There are a couple of issues that we address when compiling the data. One very important source of financing is debt. We can only discriminate between debt issued in Colombia, which we denote domestic debt, and debt issued abroad, which we denoted foreign debt. We assume that foreign debt is issued in US dollars and domestic debt is issued in Colombian pesos. This assumption is not as strong as it might seem at first: Du and Schreger (2014) estimate that the share of sovereign debt in issued in Colombian pesos and owed to nonresidents, regardless of the country of issuance, was 15.1% in 2012, slightly higher than the share of 2006.<sup>4</sup>

Figure 6 shows the evolution of debt in constant US dollars. Three things are worth noticing: First, since around 1970 foreign debt was greater than domestic debt, up until the 1990's. At that point domestic debt surpassed foreign debt. This point marks the launch of the market for bonds issued by the government. Second, this point also coincided with a big increase in both domestic and foreign debt. Finally, during the last 10 years foreign debt has decreased, while domestic debt has continued increasing. When analyzing debt as a fraction of GDP (see Figure 7), we can observe a similar pattern: Debt increased in the 1990's at a faster rate than the economy. However the decrease in foreign debt in the last 15 years also caused total debt to decrease as a fraction of GDP. In Figure 8 we adjust foreign debt by changes in the real exchange rate. It is worth noticing that in the first years of the XXth century a depreciation of the real exchange rate caused debt to reach more than 50% of GDP.

When we analyze the role that monetary policy played in financing the fiscal deficit, we are in fact analyzing how independent the central bank has been. In our analysis monetary emission is not the change of money stock, since this doesn't necessarily correspond to the exact source of financing. In our work monetary emission comes from three sources: net credit from the central bank to the government, profits from the central bank and some components from the Special Exchange Accounts (CEC, for its name in Spanish). The importance of each of these components in the monetary emission changed across time, depending on the degree of independence of the central bank.

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<sup>3</sup>We thank Johanna López Velandia for giving us access to this data.

<sup>4</sup>The Colombian government issues bonds abroad, known as *TES Global*, that are denominated in Colombian pesos. Similarly, there have been bonds issued in Colombia that are indexed to US dollars. Unfortunately we can only identify the currency of the bonds issued until very recently.

According to the law, the central bank of Colombia (Banco de la República) has had some degree of independence from the government since its creation in 1923. Even though there was a cap in the financing that the government could get directly from the Central Bank through monetary emission, the Central Bank indeed financed the government by buying government debt in a primary emission.<sup>5</sup>

In 1963 there was a law reform that established a board of directors, called Monetary Board, so that the Central Bank could be the monetary, credit and foreign exchange authority. Nonetheless, all but one of the members, the manager of the central bank, were members of the government. One of the consequences of this was that the central bank lent directly to the government. In fact, in the 1980's, debt to the central bank represented half of the total domestic public debt (Banco de la República Colombia, 2013). This lasted until a new political constitution was written in 1991 that explicitly established an independent central bank.<sup>6</sup>

Monetary emission prior to 1991 also includes some components from the CEC. These accounts were established in 1938 to use fiscal resources to balance losses due to movements in the exchange rate. They included taxes on coffee and remittances, as well as profits or losses derived from management of foreign exchange and from foreign exchange reserves.<sup>7</sup> García García and Guterman (1988) recalculate the fiscal deficit taking into account that the first component of the CEC should be accounted for as income for the government, while the second component is a way to finance the fiscal deficit that can be classified as monetary emission. We use their calculations for the fiscal deficit and its financing from 1963 to 1985, as well as their calculations of monetary emission. The CEC ended in 1993; however, as Steiner Sampedro (1991) mentions, in the last years the CEC only include the monetary emission component.

Since 1991, the central bank has been independent from the government. From that year on, monetary emission refers exclusively to the profits of the central bank, that are transferred to the government at the end of the fiscal year.

Finally, we are able to gather information regarding the fiscal deficit, not the primary deficit. To analyze the primary deficit we use interest payments on public debt compiled by Junguito and Rincón (2007). This information discriminates between interest payments on foreign debt and on domestic debt. It is worth mentioning that domestic debt includes loans by the central bank to the government before 1991. However, we are not able to discriminate this data any further. Similarly to how we deal with domestic and foreign debt, we assume

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<sup>5</sup>We thank Mauricio Avella Gómez for pointing this out.

<sup>6</sup>According to the law the central bank can still lend to the government, but this has to be decided unanimously of its board of directors. This has not occurred since 1991.

<sup>7</sup>Jaramillo and Montenegro (1982) include a thorough explanation of how CEC work.

that interest payments on foreign debt are indexed to US dollars, while interest payments on domestic debt are in Colombian pesos.

### 3 Conceptual framework

We start with the budget constraint of the government as portrayed in Kehoe et al. (2013). Given data availability for Colombia, we modify it slightly. That is, our starting point is given in equation (1):

$$B_t - B_{t-1} + b_t^* - b_{t-1}^* + M_t - M_{t-1} + T_t = D_t + B_{t-1}R_{t-1} + b_{t-1}^*r_{t-1}^*, \quad (1)$$

where  $B_t$  denotes the outstanding stock of debt issued in Colombia, which we will refer to as domestic debt,  $b_t^*$  is the outstanding stock of debt issued abroad, which we call foreign debt,  $M_t$  stands for monetary emission used to finance the government,  $T_t$  denotes net transfers to the government,  $D_t$  is the primary deficit and  $R_{t-1}$  and  $r_{t-1}^*$  are the interest rates on previously acquired domestic and foreign debt, respectively.

We normalize (1) by the nominal GDP at  $t$ , which we denote by  $Y_t$ . The right hand side of the resulting expression, shown in equation (2), is the fiscal deficit as a percentage of GDP. The left hand side shows how the government finances the deficit.

$$\frac{\Delta B_t}{Y_t} + \frac{\Delta b_t^*}{Y_t} + \frac{\Delta M_t}{Y_t} + \frac{T_t}{Y_t} = \frac{D_t}{Y_t} + \frac{B_{t-1}R_{t-1}}{Y_t} + \frac{b_{t-1}^*r_{t-1}^*}{Y_t}. \quad (2)$$

Figure 1 shows the evolution of the fiscal deficit. We identify three main cycles: the first one ranges from 1963 to 1975; the second spans from 1976 to 1991, when a new political constitution was written, and the last one begins in 1991, until the most recent data we found. When we analyze each of the components of the fiscal deficit, we observe that until the early 90's most of it was due to the primary deficit. Beginning in 1992 payments on interests on domestic debt as a share of the fiscal deficit increased, as did the share of interest payments on foreign debt a few years later (see Figure 9). Additionally, we observe that the maximum deficit reached in each of the cycles is increasing in time. When we analyze how each source of financing evolves, Figure 10, we find that each cycle was financed mainly using a different source: from 1963 to 1975 the government financed mainly through foreign debt; in the second cycle the most important source was monetary emission; and from 1991 until today domestic debt has played the main role. We analyze in detail each of these periods in the following section.

## 4 Periods of analysis

In this section we analyze three periods of the history of monetary and fiscal policy in Colombia. Our analysis begins in 1963. However, during this year inflation reached 33.5%, which is the highest observation in our data (See Figure 5). Therefore we briefly mention events that led to this high level.

The second half of the 1950's was characterized by monetary and fiscal expansion. There were two reasons for this: First, from 1953 to 1957 Colombia had its only military dictatorship of the XXth century. Even though it was not as harsh as dictatorships in other military countries, it still caused political instability. Second, the price of coffee increased to 180 US cents per kilo in 1956 (see Figure 12). Since coffee represented around 70% of exports, the extra dollars from exports caused a downward pressure on the fixed exchange rate, which implied increases in money supply.

By the beginning of the 1960's, economic conditions had changed. In 1959 the price of coffee was under 100 US cents per kilo, and continued to fall. This caused a lower value in exports and pressures to devalue the currency. Junguito and Rincón (2007) mention that a law in 1960 caused both a reduction in tax revenue and an increase in government expenditures.<sup>8</sup> As a consequence the deficit increased. An important source of financing of this deficit was money emission (Sánchez et al., 2007), which may have caused an increase in inflation.<sup>9</sup> Another source was external debt: The launch of the Alliance for Progress and of the US Agency for International Development in 1961 allowed further ways of financing (Avella Gómez, 2007d).

### 4.1 1963-1975

The first cycle we analyze begins in 1963 and ends in 1975. This one is the smallest of the three cycles we analyze, in the sense that at its peak the deficit reached only 1.24% of GDP. Similar to what occurred in other emerging markets, during this period the government financed using mainly foreign debt. It is worth mentioning that this cycle begins after a short period in which the government relied heavily on monetary emission to finance its deficit. As a result, inflation increased and there was a currency crisis (see Sánchez et al. (2007)). This might be a reason why monetary emission was not the primary source of financing during the period that we analyze in this section.

Since 1963 the Monetary Board was in charge of foreign exchange, monetary and loan

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<sup>8</sup>The law included tax rebates to economic sector that were considered important, as well as increased resources to maintain public order.

<sup>9</sup>Gómez-Pineda (2015) blames the high inflation of 1964 in an increase in wages that averaged 25%.

policy in Colombia. Until 1967 the exchange rate had a fixed price. In that year, the Colombian Government approved a new law: law 444 of 1967. This law ruled the foreign exchange policy and trade policy until 1991. Among other things, this law established that the Central Bank was in charge of determining the exchange rate on a daily basis by means of a crawling peg (See Figure 11). One of the motives for this was to stimulate exports. However, the Central Bank needed a tight control of all transactions in foreign currency.

With respect to loan policy, the Monetary Board made the Central Bank to be effectively a development bank. This might explain the lack of this type of banks in Colombia. The financial sector in Colombia was underdeveloped, and, as a consequence, some economic sectors relied on loans given through the Central Bank. Of course, this affected monetary policy. Interestingly, inflation seemed to be under control, although at high levels.

One of the consequences of an underdeveloped financial system was that there were no long term loans available. To address this, in 1974 the Colombian government established special financial institutions whose objective was to supply mortgages. These loans were not issued in pesos, but rather in real units called *UPAC*'s (constant power purchasing units). The establishment of this system was one of the causes of the financial crisis that Colombia suffered in 1999.

1963-1975 is characterized by a series of fiscal reforms aimed to counteract the fact that the government relied heavily on the income generated by exports, and especially from coffee. As shown in Figure 12, during this period the price of coffee (in nominal terms) was low relative to our sample. In part due to this, the Special Exchange Accounts (CEC, for its name in Spanish) were used to balance fiscal losses in coffee exports due to movements in the exchange rate. The government hired two economic missions in 1965 and 1968 to get advice on how to implement a fiscal reform that could increase its revenue. These missions were known as Taylor mission and Musgrave mission, since they were led by professors Milton Taylor and Richard Musgrave. Due to this, revenue from income tax increased during these years. Nonetheless, the fiscal deficit increased since government expenditure did as well (see Figure 13). One of the reasons for this was the establishment in 1968 of a law that required the national central government to transfer to local authorities resources aimed for primary education and health.

The primary deficit in Colombia increased from -0.01% of GDP in 1968 to 1.24% four years later. As seen in Figure 9, this increase was mostly due to a higher fiscal deficit. Figure 10 shows that the main source of financing of the primary deficit was net foreign debt.

According to Avella Gómez (2007a), Colombia was not the exception among emerging economies in taking advantage on foreign financing opportunities during these years. The early 1970's witnessed an increase in foreign flows to emerging markets, especially from

foreign banks. In fact, during this time long term bonds and foreign direct investment were replaced by intermediation by international banks. This came at a cost of exchanging long term fixed-rate bonds with short term loans with floating interest rates. Among the reasons for this increase in flows are the development of new foreign capital markets, as the eurodollar market. Additionally, floating exchange rates, due to the end of the Bretton-Woods system allowed new investment opportunities in foreign currencies.

Avella Gómez (2007a) mentions that Colombia had similar cycles in foreign lending as other emerging markets. Nonetheless, contrary to other emerging economies, the boom in lending by foreign banks reached Colombia only in the early 1980's, right before lending to Latin American countries began decreasing. In 1974 the stock of public foreign debt lent by foreign banks accounted for only 13% of total foreign debt. Most of the stock of foreign debt was in the form of bonds, or loans from multilateral entities, such as the Development Bank of Latin America (CAF) or the Inter-American Development Bank (IDB). This helps to explain why interest rates on foreign loans received during these period were below 6% on average for most of the 1970's. Also, the implicit interest rate paid on foreign debt was even lower (see Figure 14). Additionally, before 1974 Colombia also took advantage of the nascent eurodollar market to finance public investment.

During 1975 economic growth decreased to 2.3% in real terms. This was the lowest number in over 10 years. Also, the government wanted to tackle what was considered a large fiscal deficit. For this reason a law reform was approved by which tax exemptions for big firms were lowered. Additionally the government considered that foreign debt could increase inflation. Therefore it aimed to rely on domestic debt as an alternative to finance its deficit by issuing short term bonds, which were known as Economic Emergency Promissory Notes (PAS, for its name in Spanish). Nonetheless, at the same time the government removed tax exemptions on domestic bonds. Therefore it ended relying on loans from the central bank to finance its deficit, as discussed in the next section.

## **4.2 1976-1991**

The second period of interest starts in 1976 and finishes with the promulgation of a new Constitution in 1991. Its main characteristic is the predominant use of monetary emission to finance increasing primary deficits in a context of economic boom, subsequent financial crisis and expansion.

From a macroeconomic perspective, this period starts with the most spectacular increase in the global price of coffee in history. After decades of stability around US\$1/kilo, the price of Colombian coffee would rise to slightly more than US\$7/kilo in the course of just

two years, from March 1975 to March 1977 (see Figure 12). These developments would help to bring about a period of fast economic growth (see Figure 4), for coffee was at the time the most important export commodity produced in a relatively undiversified Colombian economy. At the peak of the boom in 1977, the economy grew at almost 8.5% in real terms. A financial crisis hit the economy in 1982 (coinciding with the Latin American debt crisis), reducing real growth to just 1%, but the economy would recover swiftly (with the help of a short-lived hike in the price of coffee at the beginning of 1986). In fact, it cannot be said the decade of the 1980s was a “lost” decade for the Colombian economy, insofar as economic growth between 1980 and 1991 averaged 3.31% per year (more than double that of Latin America as a whole).

At the same time, this period witnessed the consolidation of high and persistent levels of inflation, which fluctuated around 25% until the beginning of the 1990's. This can be partly explained by foreign exchange policy. Despite the fact that the increase in the price of coffee caused dollar inflows to rise, the nominal exchange rate did not decrease. In fact, it kept increasing, although at a lower level. Due to this there was an appreciation in real terms (See Figures 15 and 16).

From 1977 until 1982, government expenditures expanded quickly, increasing the relative size of the state almost by half (the ratio of government expenditures to GDP grew from 5.32% to 7.72% during these 5 years). Given that this occurred with falling tax revenues, the Colombian government ran increasing primary deficits, which would reach 2.6% of GDP in 1984. After the financial crisis of 1982, though, the government adjusted both by increasing tax revenue and by reducing expenditures, thereby reducing primary deficits to almost zero in 1987-1991.

The keys to understanding the financing of primary deficits during this period are likely to be the following. First, since 1977 the Colombian government faced increasing interest rates in the international capital markets (see Figure 14). Despite the fact that the government did not default on its obligations throughout the 1980s, both the marginal and implicit interest rate on external public debt more than doubled from 1977 (4.5%) to 1982 (9.7%), and it would remain at historically high levels throughout the 1980s. Second, the institutional design of the Central Bank since 1963 and the composition of the Monetary Board caused that the government and private sector officials to give monetary policy an inflationary bias. Finally, a shallow domestic financial market prevented the use of domestic debt instruments at large scale.

The combination of these elements forced the Colombian government to rely on money emission from the Central Bank as its main source of finance during the period between 1977 and 1984. This was especially the case after 1981, when international capital markets dried

up in the wake of the Latin American debt crisis. In that year, monetary financing reached 2.46% of GDP (the primary deficit that same year amounted to 2.36% of GDP).

Monetary emission during this period took place under two guises. On the one hand, the Central Bank made increasing profits on its dealing in the state-controlled foreign exchange market. These profits were transferred to the government by law. On the other hand, and in particular during the domestic financial crisis of 1982 (which implied, among other things, the nationalization of key financial institutions by the government), the Central Bank offered direct loans to the government financed with primary emission.

In summary, during the period between 1976 and 1991, the Colombian economy experienced a relatively volatile macroeconomic and international environment. The consequent difficulties to finance increasing primary deficits using foreign or domestic debt forced the government to turn to monetary financing sources. The prevailing institutional arrangement at the Central Bank at the time facilitated this, as the Monetary Board decision-making structure was not independent from the central government. The heavy use of primary emission sources could have been the driving force behind the increase and the persistence of inflation throughout this period.

### **4.3 1991-2012 via 1999**

The final period of interest in our story begins in 1991, with the promulgation of the new Political Constitution of Colombia, and finishes in 2012. This period was mainly characterized by the predominant use (for the first time) of domestic debt instruments to finance primary deficits and the virtual disappearance of monetary financing sources. Also during this period the Colombian economy experienced the worst economic and financial crisis of the XXth century, a result of the financial crisis engulfing emerging economies after 1997 in a context of a heavily managed exchange rate and large primary deficits.

The promulgation of a new Political Constitution of Colombia in 1991 would radically change the set of institutions governing the design of and interaction between fiscal and monetary policies. Among these institutional reforms, the following two stand out as the most important for the topic of our paper. First, the Constitution entailed a new arrangement between the central and the regional governments as to their economic and political role. In particular, the Constitution committed the central government to transfer increasing resources to the regional governments, who would in turn spend them in public goods and services at the local level. Second, the Constitution changed the nature and structure of the Central Bank, making it far more independent from the central government than at anytime in its previous history. The Central Bank was given technical independence as to

the instruments employed to achieve its main task, which was defined solely as the control of inflation. In addition, the Monetary Board was replaced by a Board of Governors where the Minister of Finance only had one vote (of seven) and no veto power. Finally, the Constitution prescribed that any loan from the Central Bank to the central government would require unanimous approval by the members of the Board, thus all but forbidding monetary financing in this guise. To date, the independent Central Bank has never granted any loan to the central government.

One major change was the foreign exchange policy. After 24 years, law 444 of 1967 seized to govern foreign exchange policy. Instead, the foreign exchange rate started to be determined by the market price. However, the exchange rate was not completely free: In 1992 the Central Bank established bands between which foreign exchange had to lie. Originally bands were 7% around a medium level established by the Central Bank. However the level of the bands was changed multiple times, and in June 1999 the width of the bands was increased to 14%. This occurred a few months before the bands were eliminated in September 1999. The red dotted lines in Figure 17 show the bands.

The transfers commitments provided by the Constitution to the regional governments caused a rapid increase in central government expenditures (see Figure 13). The size of the government increased by more than half between 1991 and 1999, as the ratio of central government expenditures to GDP increased from 7.7% to 12.8%. Tax revenues did not increase at the same pace, though, thereby generating an increasing primary deficit. In 1999 the primary deficit reached 3.6% of GDP, the highest mark in our sample.

Figure 10 documents the finance structure that characterizes this period. First, as a result of the Constitutional reform to the Central Bank, monetary financing virtually disappeared. According to the law, seigniorage financing would be limited to the transfer of the profits of the Central Bank to the central government, which became positive (if small) only after 1998. Second, and especially during the first half of the 1990s, the government decided to privatise key industries (mainly energy and coal), thus obtaining temporary finance worth up to 1.6% in 1996 (see the line  $\frac{T}{Y}$  in Figure 10). Lastly, and perhaps most important of all, early in the decade of the 1990s the government decided to turn to the domestic financial market to finance its increasing primary deficit through the use of debt securities (TES). These securities would give a boost to the development of domestic money markets and would become the predominant source of government finance until the present (by 2005, TES net emissions reached 3.7% of GDP). Given the high inflation prevailing at the time, the government had to pay a relatively high interest rate on domestic debt (26.7% implicit in 1995) in a context where financial repression in the form of forced investments in public debt was gradually being abandoned (see Figure 14). Foreign debt finance would lag behind

domestic debt until 2000.

Since 1996 the symptoms of a massive crisis in external funding were being observed at the same time that a number of emerging economies were encountering difficulties in international capital markets. In particular, the government experienced an increase in the interest rate of foreign debt (see Figure 14) and a consequent increase in interest payments to international capital markets (Figure 9). The dramatic fiscal consequences of the eventual sudden stop are evident in Figure 10 as a sharp reduction in foreign debt finance from 1999 to 2002. The recession would last from 1998 to 2000; real GDP would fall by 4.2% in 1999, the worst contraction since records began. The central government entered a stand-by agreement with the International Monetary Fund which forced a macroeconomic adjustment via the gradual reduction of the primary deficit. This would be achieved through a reform of the transfers arrangements to regional governments and a series of tax reforms starting in April 2000, which would gradually increase tax revenue (the effect of this reform on tax revenue is evident in Figure 13 as a change in the slope of the ratio of revenues to GDP). Both the interest expenditure and the stock of foreign debt would fall gradually, whereas the interest expenditure and the stock of domestic debt would stabilize, with net TES emissions fluctuating around 2.5% of GDP in subsequent years.

A side effect of the recession was the sharp decline in inflation, from 31% in 1990 to 9% in 2000, thereby reducing also the implicit interest rate on domestic debt (Figure 14) to around 10%, from where it has fallen even further until the present day. After the crisis, the economy entered a long expansionary period, which lasts until today. Unlike the previous booms discussed in this paper, in this occasion economic growth was not accompanied by increasing primary deficits. This is probably the direct consequence of a new institutional arrangement introduced at the end of 2003, namely, the commitment to an explicit fiscal rule that constrains the exercise of fiscal policy on a 10-year horizon and presents the government with a debt ceiling. The success of this arrangement in ensuring the stability of public finance is perhaps evident in the stability of the implicit interest rate on public debt (domestic and foreign) amidst the global financial crisis of 2008-9 and the continued ability of the central government to finance primary deficits throughout the period.

## 5 Analyzing uniqueness of Colombia

In this section we analyze two aspects of monetary and fiscal policy in Colombia that might explain why Colombia was not characterized by having bad policies. In other words, we highlight some aspects that make Colombia unique among Latin American peers. We first study the relation between the budget finance the exchange rate. During most of the time

period we analyze, the exchange rate was determined by the central bank at a time when the central bank was not independent from the government. Therefore foreign exchange policy, monetary policy and fiscal policy were determined jointly. We then study how Colombia avoided hyperinflation by means of financial repression.

## 5.1 Budget finance and exchange rate

A salient feature of the thread of our story is the extreme importance of exchange rate policy. As discussed, for most of the period of analysis the level of the exchange rate was a heavily exploited instrument of economic policy. This feature is common to several Latin American economies during the same period. In such context, the theory of open economy macroeconomics indicates that complex relationships between monetary, fiscal, financial and exchange rate policy are to be expected.

This section provides a first pass at identifying the historical links between the level and finance sources of budget deficits, on the one hand, and the nominal exchange rate, on the other. A couple of preliminary conclusions arise from this effort. First, there has been a historical, positive link between budget deficits and nominal depreciations. Second, and especially for the period after 1991, external shocks became the main driving force to determine the nominal exchange rate in a context of an independent monetary authority, a managed floating regime and increasing budget deficits.

Figure 18 presents the evolution of the budget deficit (as a percentage of GDP) and the annual percentage change in the nominal exchange rate. Although the contemporaneous correlation between the series is not statistically significant, a number of interesting patterns emerge from the figure. The first is the statistically significant correlation between nominal depreciation and the lagged budget deficit. In other words, a higher budget deficit in a given period is associated with a higher nominal depreciation in the future. The correlation coefficient between the current nominal depreciation and the 3-year lag of the budget deficit is 0.37 (see Table 1). The reasons for this positive association merit further research; at the moment, we will catalog this as a puzzle of our story, insofar as traditional models of short-run exchange rate determination predict that higher budget deficits are followed by nominal appreciations rather than depreciations.

In order to further explore the relationship between budget deficits and the exchange rate, it is useful to follow the approach of the previous section and study each of the three subperiods of analysis separately. Tables 2 to 4 present the set of contemporaneous and lagged correlation coefficients for the same variables for each of the periods 1963-1975, 1976-1991 and 1992-2012. The first important conclusion to emerge is that the positive association

between deficits and depreciation is only statistically significant before 1991. During this period, Colombia embraced international capital markets, eventually abandoning, by and large, the control of the nominal exchange rate. After 1991, when the long-held policy of heavily controlled exchange rate was abandoned in favor of a managed floating regime, the contemporaneous, positive correlation becomes statistically significant. Although the nominal exchange rate did appreciate somewhat at the beginning of the nineties, it later suffered strong depreciations amid a series of confidence shocks in international financial markets. This points to the importance of external shocks to determine both the size of the deficit and the path of the nominal exchange rate.

Between 1963 and 1991, the conclusion is the opposite in key respects (before 1991, monetary and fiscal autonomy were kept together with variations of a fixed exchange rate regime at the cost of heavy controls on international capital). First, the contemporaneous correlation is not statistically significant. Second, it is during this period (which, as discussed, involves two cycles characterized by the use of different financing sources) that there is a strong positive correlation between current budget deficits and future nominal depreciations. For the case of the period between 1976 and 1991, nominal depreciation could potentially be the result of higher budget deficits through the persistence of monetary emission used to finance deficits in the first place. In this sense, both inflation and nominal depreciation would be the result of heavy primary emission during the period. The problem with this conclusion is precisely that the same structure of correlations for these two variables is observed for the period between 1963 and 1975, when external finance was used to finance the budget deficit. The relationship between budget deficits and nominal depreciations before 1991 merits therefore further exploration, perhaps delving into the political economy behind nominal exchange rate determination in the context of budget deficits and fixed exchange rates.

## 5.2 Financial repression

Hernández and Jaramillo (2015) find a negative correlation between the growth of the monetary base and the money multiplier. This suggests that as the monetary base increased, the growth of credit did not follow it. This might be a reason why inflation in Colombia never went beyond 30% per year during this period. To analyze this data we calculate the annual percentage growth of the monetary base and we denote it by  $\widehat{MB}$ . We estimate the money multiplier as the ratio of M1 to the monetary base and we calculate its annual change,  $\Delta m$ . Figure 19 shows how these two numbers evolved from the first quarter of 1961 to the last quarter of 1991. Their comovement is evident. In fact, the correlation of  $\widehat{MB}$  and  $\Delta m$  over

this period is -0.76.

The reason for this negative comovement might be the active use of reserve requirements. In fact, the (inverse of the) money multiplier moves hand in hand with the reserve requirements (see Figure 20).<sup>10</sup> Together Figures 19 and 20 suggest that when the monetary base increased, the monetary authorities also increased reserve requirements. In this way the extra cash that was printed by the Central Bank did not necessarily translate into more loans.

In particular, reserve requirements were actively used to counteract economic events which caused a rapid accumulation of foreign exchange reserves. For instance, Avella Gómez (2007b) mentions during the coffee boom of late 70's, foreign reserves doubled in 1975-1976 and reached US\$1.0 billion (b). Two years later they reached US\$2.5 b. In 1977 the Monetary Board imposed a marginal reserve requirement of 100% on deposits over the level observed by January 31st, 1977. Additionally reserve requirements increased from 34% to 46.5% in various reforms in the following two years.

Avella Gómez (2007b) states that monetary authorities used reserve requirements actively for two main purposes: As a monetary policy instrument and as a way to redirect credit. We already discussed the first purpose. The second one reinforced one of the objectives of the Central Bank at the time. For instance, in 1980 banks that invested in assets of the Industrial financial fund were exempted from reserve requirements on term deposits.

## 6 Discussion

In this section we discuss issues that we will address in a close future. The first issue regards data. The data we present in this draft was collected at annual frequency. It is possible (if time consuming) to construct similar series at quarterly frequency since 1963. The extent to which quarterly data would provide strong additional insights to the analysis presented here is an open question.

Furthermore, the series we presented so far exhibit a form of endpoint problem towards the beginning. We begin our analysis in 1963 due to two main reasons: First, that year marks the beginning of the Monetary Board. This was the monetary, foreign exchange and credit authority in Colombia until 1991. The establishment of the Monetary Board represented a change in monetary and credit policies, which determined how the government financed its deficit for the following 28 years. Therefore, it seemed natural to begin our analysis on that year. Additionally, one of our main data sources shows data series starting in 1963.

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<sup>10</sup>Colombian regulation has stated different reserver requirements for different types of deposits. Figure 20 shows reserver requirements for private savings accounts. Avella Gómez (2007b) shows how reserve requirements for all types of deposits have evolved since the 1940's.

Nonetheless, it seems that prior to 1963 an omitted element was causing high inflation, interest rates and primary deficit. This could have determined the choice of foreign debt as the predominant source of finance after 1963. We are intending to explore more carefully the historical experience in the years prior to 1963 to shed light on this issue.

Finally, the analysis presented in this draft has been predominantly descriptive, and the listing of historical variations in institutions and international conditions have provided us with a thread of argumentation. We would like, however, to be able to explore more systematically the effect of these changes on government finance. To this extent, we could explore the setup of a model that could complement the basic framework by Kehoe et al. (2013) and capture the salient characteristics of the history of fiscal and monetary policy in Colombia, and the relationship between the latter and institutional change and international financial conditions.

**Table 1: Correlation between change in exchange rate and primary deficit**

Lag	Pearson	Spearman
0	0.264 (0.064)	0.269 (0.059)
1	0.386 (0.006)	0.394 (0.010)
2	0.386 (0.008)	0.342 (0.018)
3	0.374 (0.010)	0.338 (0.205)

*p*-value in parenthesis

**Table 2: Correlation between change in exchange rate and primary deficit: 1963-1975**

Lag	Pearson	Spearman
0	-0.195 (0.523)	-0.159 (0.604)
1	-0.014 (0.966)	0.175 (0.588)
2	0.428 (0.189)	0.555 (0.082)
3	0.743 (0.014)	0.721 (0.024)

*p*-value in parenthesis

**Table 3: Correlation between change in exchange rate and primary deficit: 1976-1991**

Lag	Pearson	Spearman
0	0.173 (0.522)	0.171 (0.527)
1	0.521 (0.046)	0.471 (0.078)
2	0.665 (0.009)	0.552 (0.044)
3	0.707 (0.007)	0.632 (0.024)

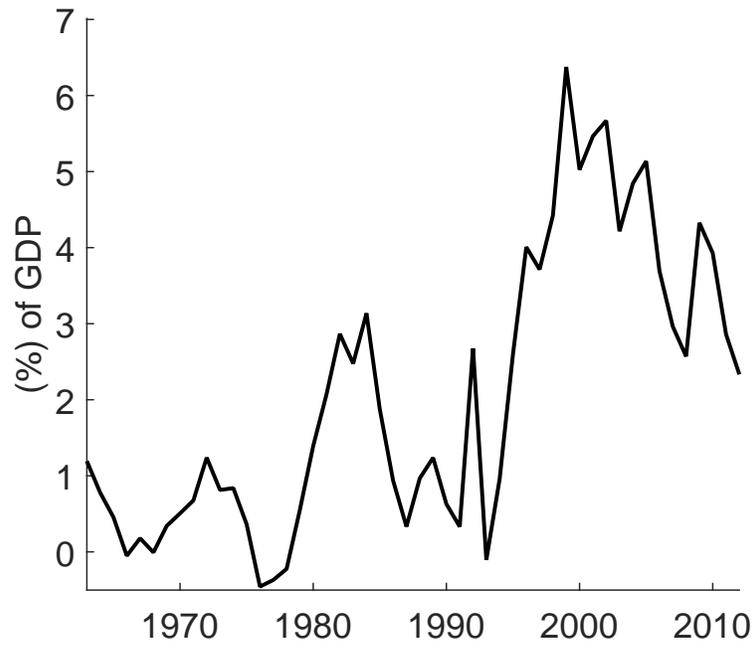
*p*-value in parenthesis

**Table 4: Correlation between change in exchange rate and primary deficit: 1991-2012**

Lag	Pearson	Spearman
0	0.414 (0.056)	0.403 (0.064)
1	0.475 (0.030)	0.555 (0.010)
2	0.296 (0.206)	0.341 (0.141)
3	0.257 (0.288)	0.307 (0.201)

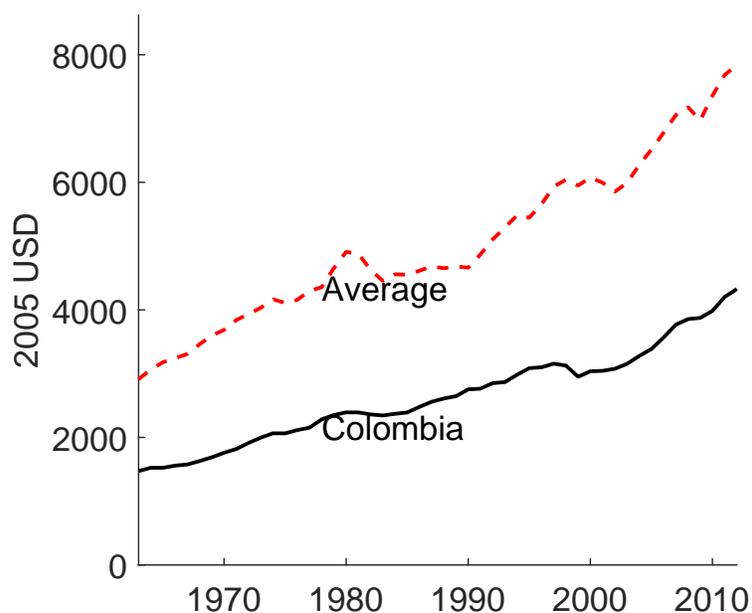
*p*-value in parenthesis

**Figure 1:** Fiscal deficit



Source: 1963-1985: García García and Guterman (1988); 1986-1987: Banco de la República Colombia (1989); 1988-1989: Banco de la República Colombia (1991); 1999-2002: Technical and Economic Information Department of the Banco de la República Colombia; 2003-2012: Ministry of Finance and Public Credit. Authors' calculations.

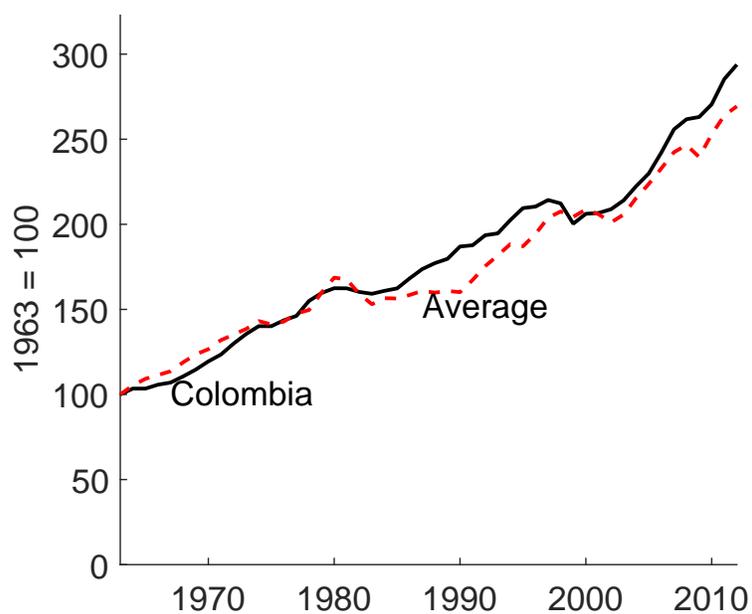
**Figure 2:** Real GDP per capita



Source: World Bank. Authors' calculations.

Average is the simple average of GDP per capita in 2005 dollars of Argentina, Brazil, Chile and Mexico.

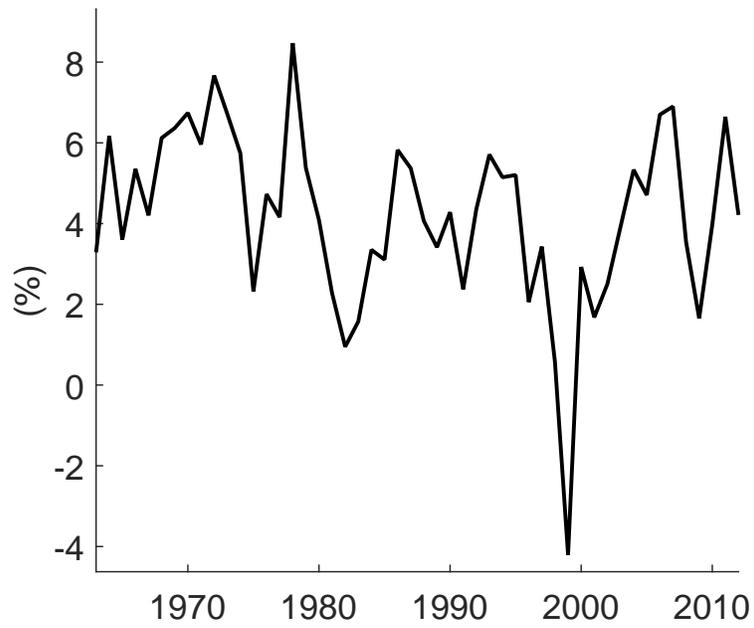
**Figure 3:** Real GDP per capita growth



Source: World Bank. Authors' calculations.

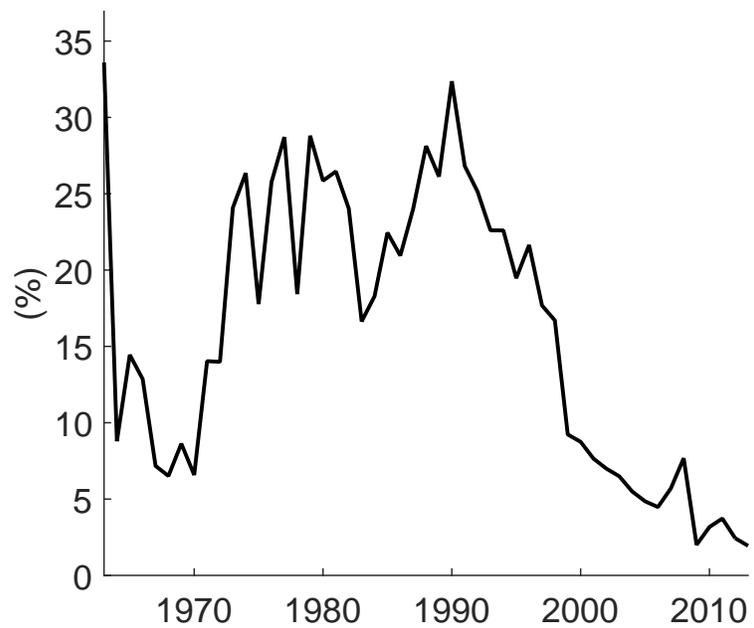
Average is the simple average of GDP per capita in 2005 dollars of Argentina, Brazil, Chile and Mexico.

**Figure 4:** Real GDP growth



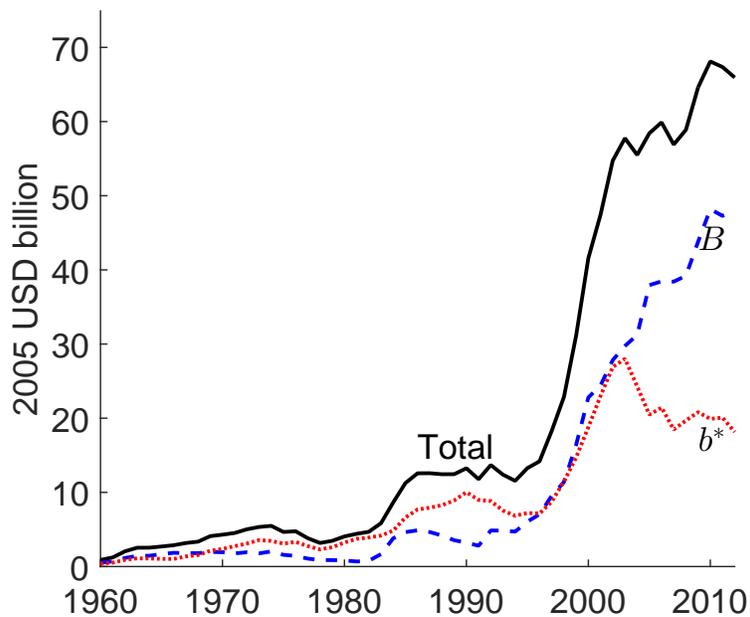
Source: Junguito and Rincón (2007). Authors' calculations.

**Figure 5:** Inflation



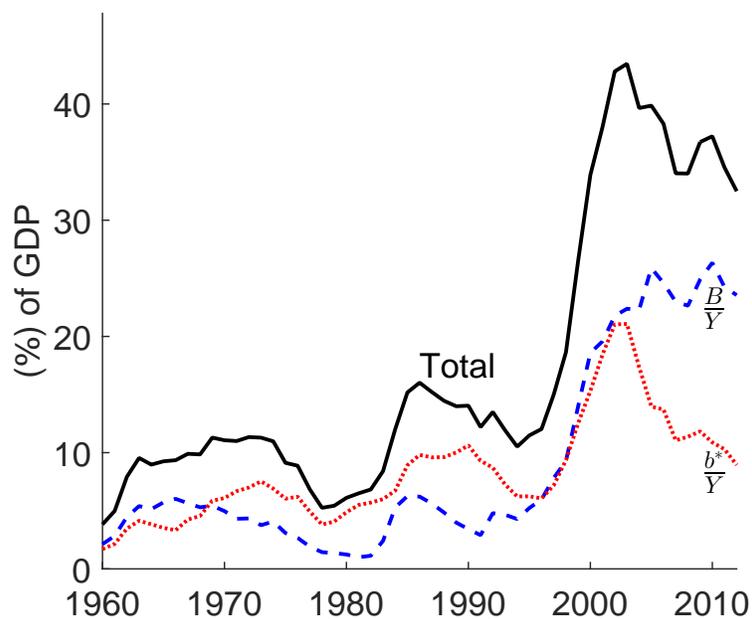
Source: Banco de la República Colombia. Authors' calculations.

**Figure 6:** Debt in constant USD



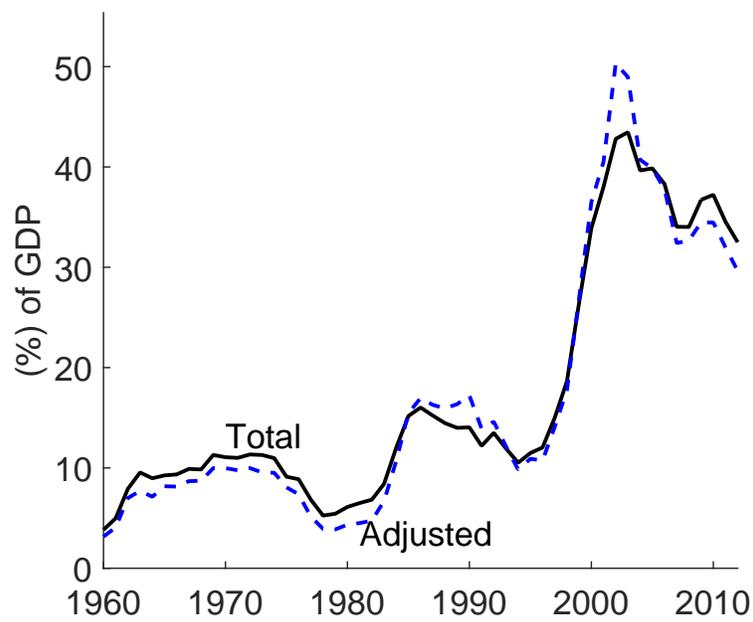
Source: Junguito and Rincón (2007) and World Bank. Authors' calculations.

**Figure 7:** Debt to GDP



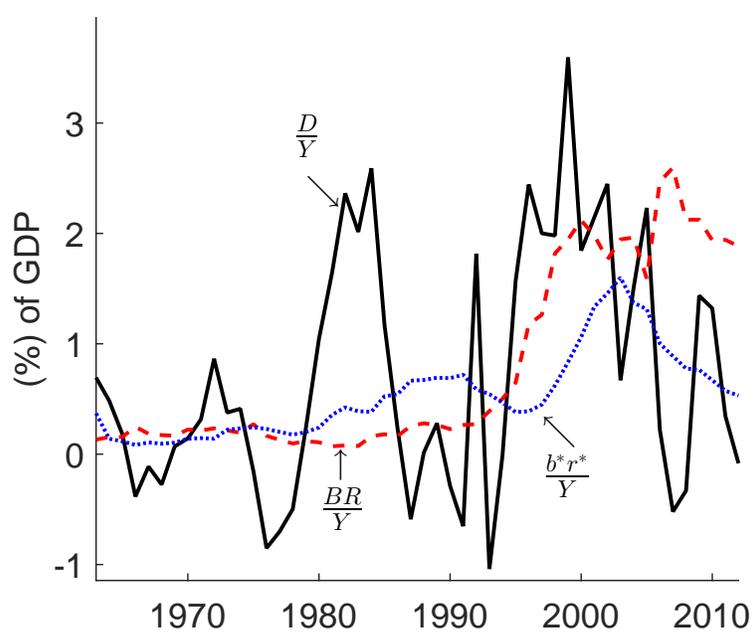
Source: Junguito and Rincón (2007). Authors' calculations.

**Figure 8:** Debt and adjusted debt by RER to GDP



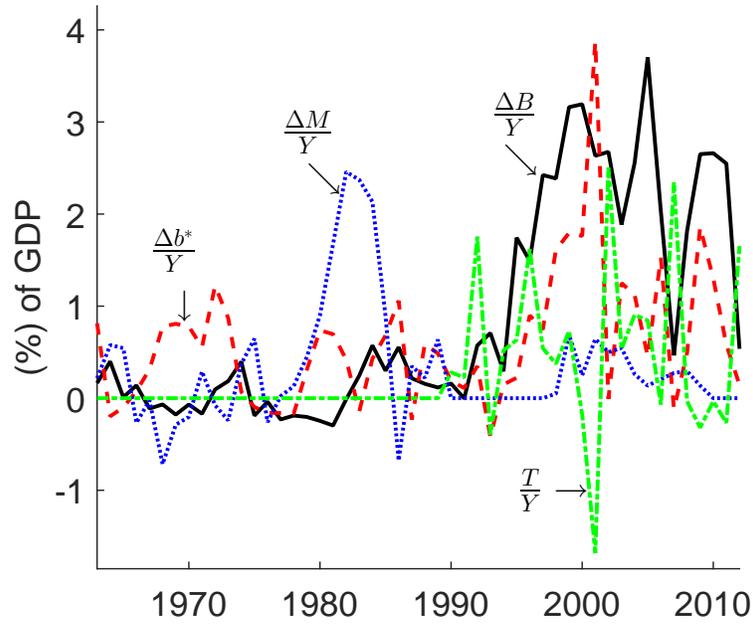
Source: Junguito and Rincón (2007), Banco de la República Colombia, BLS and World Bank. Authors' calculations.

**Figure 9:** Primary deficit and interest payments



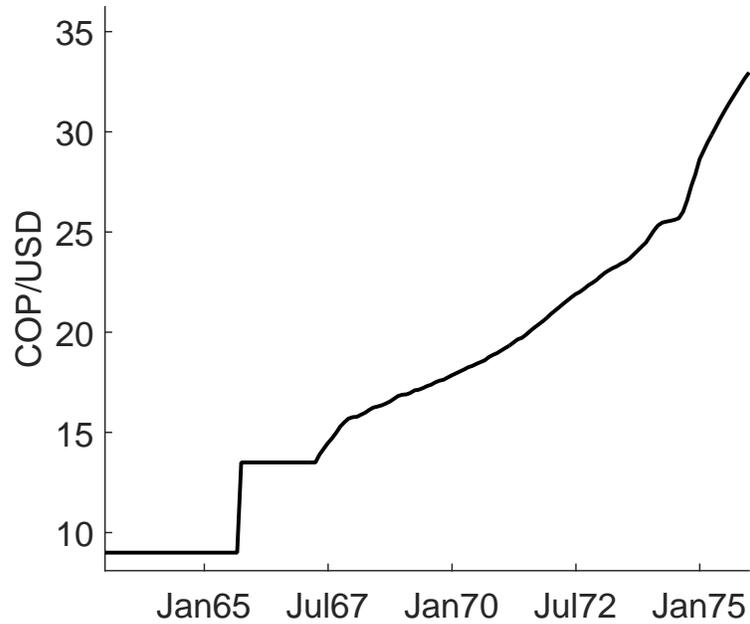
Source: 1963-1985: García García and Guterman (1988); 1986-1987: Banco de la República Colombia (1989); 1988-1989: Banco de la República Colombia (1991); 1999-2002: Technical and Economic Information Department of the Banco de la República Colombia; 2003-2012: Ministry of Finance and Public Credit. Interest payments: Junguito and Rincón (2007). Authors' calculations.

Figure 10: Financing



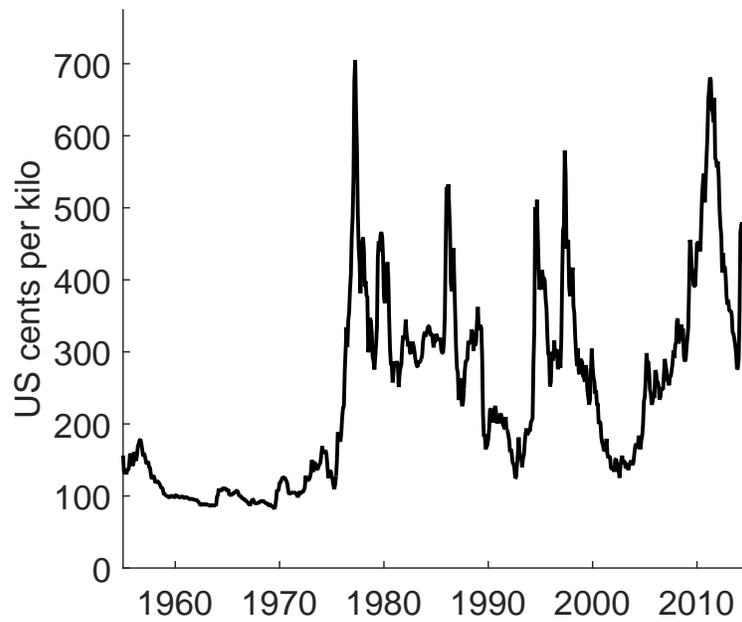
Source: 1963-1985: García García and Guterman (1988); 1986-1987: Banco de la República Colombia (1989); 1988-1989: Banco de la República Colombia (1991); 1999-2002: Technical and Economic Information Department of the Banco de la República Colombia; 2003-2012: Ministry of Finance and Public Credit. Authors' calculations.

Figure 11: Nominal exchange rate: 1963-1975



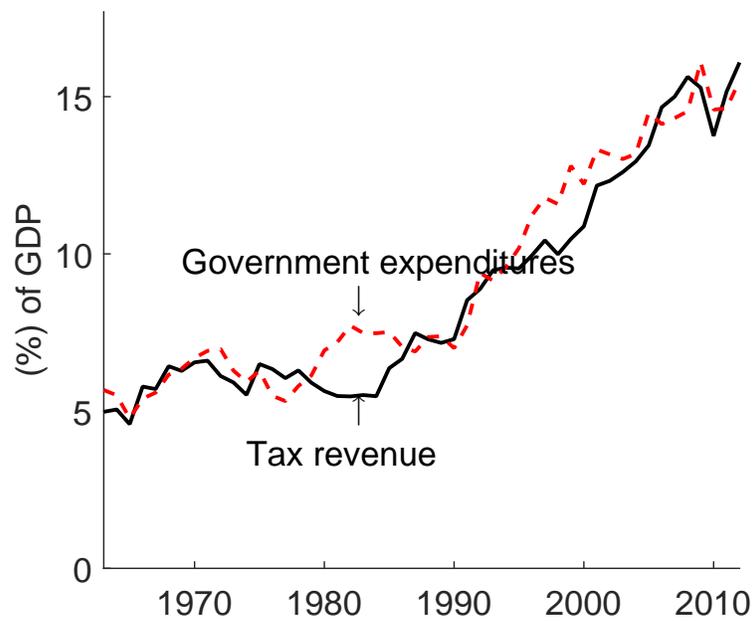
Source: Banco de la República Colombia.

**Figure 12:** Price of Colombian coffee



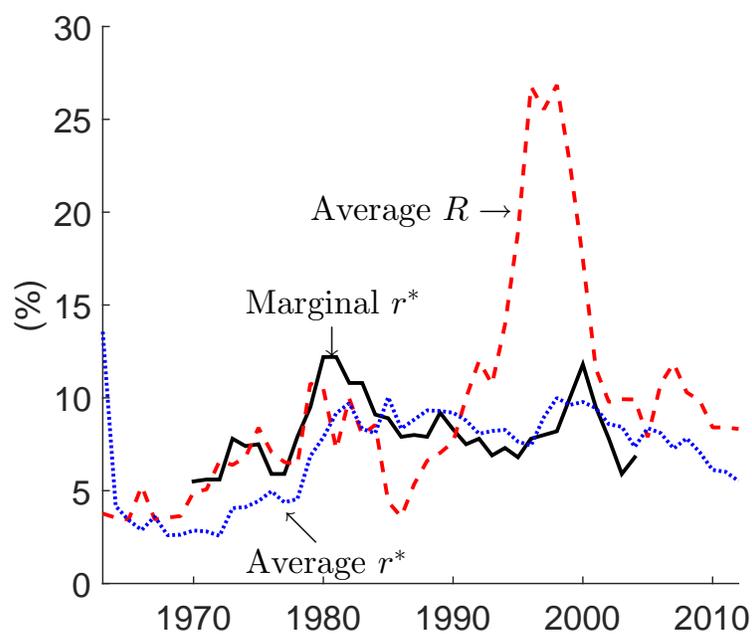
Source: Colombian Coffee Growers Federation. Authors' calculations.

**Figure 13:** Government expenditures and tax revenue



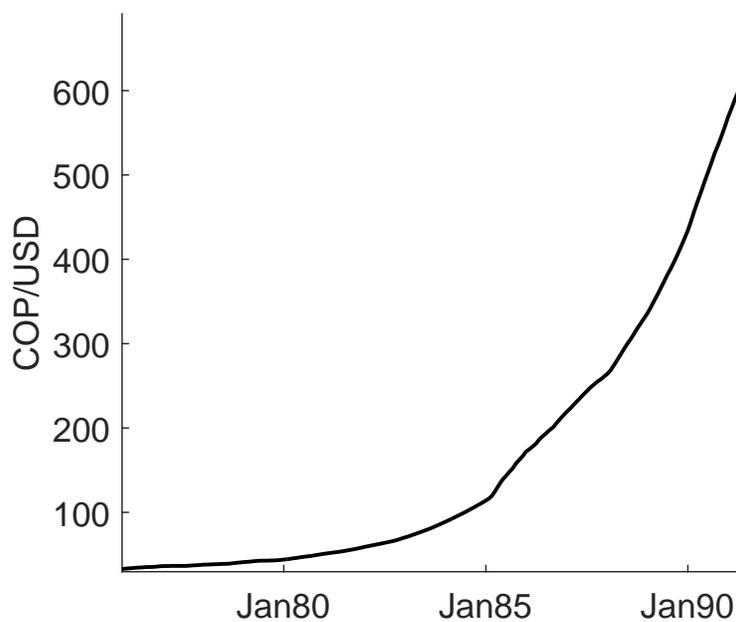
Source: Junguito and Rincón (2007). Authors' calculations.

**Figure 14:** Average and marginal interest rates



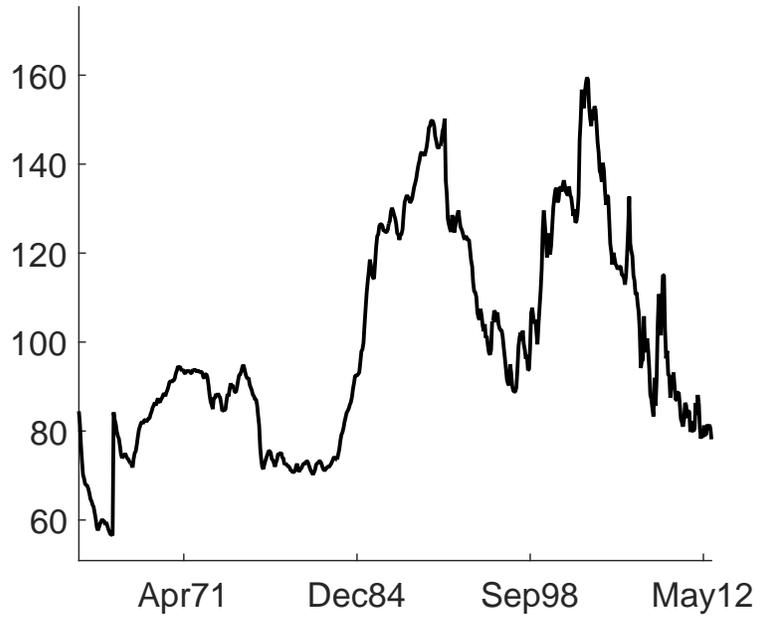
Source: Avella Gómez (2007a) and Junguito and Rincón (2007). Authors' calculations.

**Figure 15:** Nominal exchange rate: 1976-1991



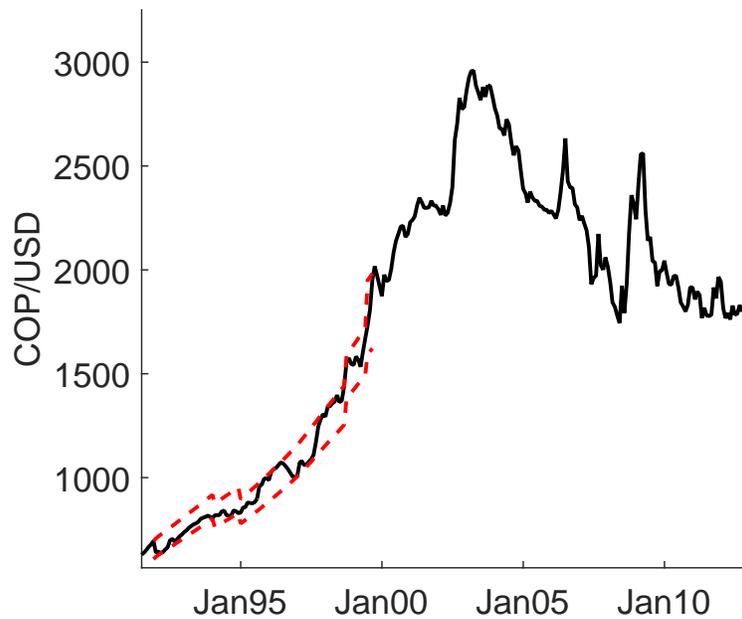
Source: Banco de la República Colombia.

**Figure 16:** Real exchange rate



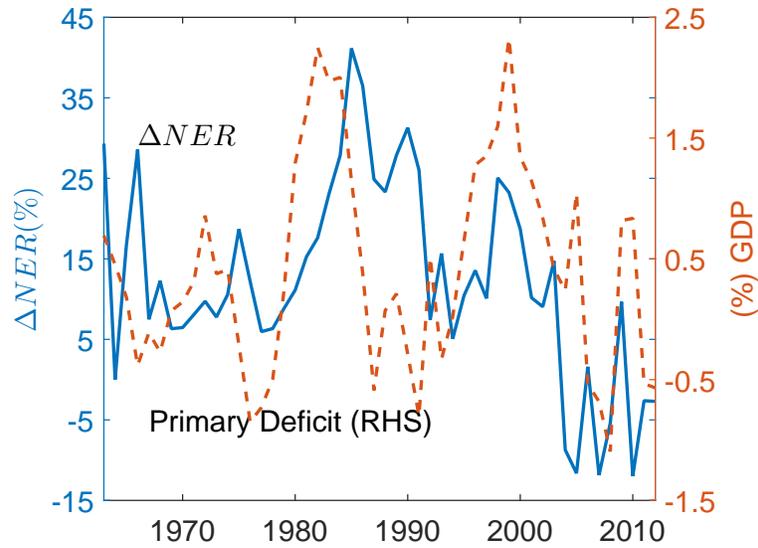
Source: Banco de la República Colombia. Authors' calculations.

**Figure 17:** Nominal exchange rate: 1991-2012



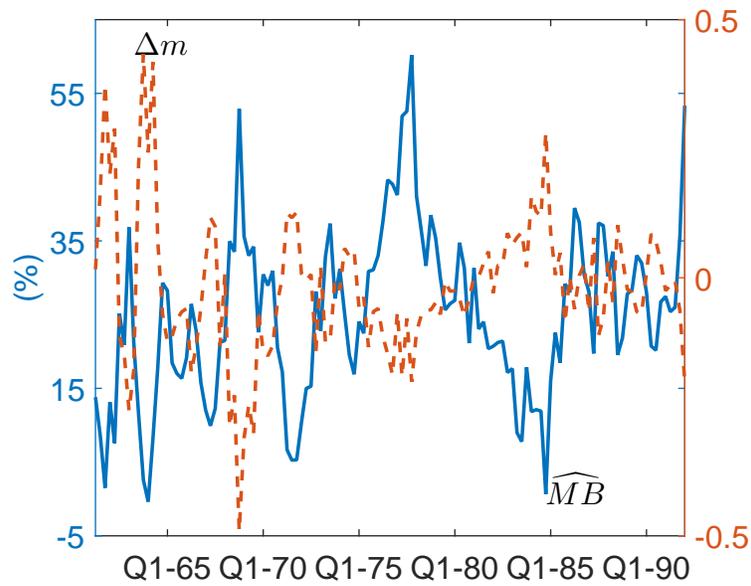
Source: Banco de la República Colombia.

**Figure 18:** Change in exchange rate and primary deficit



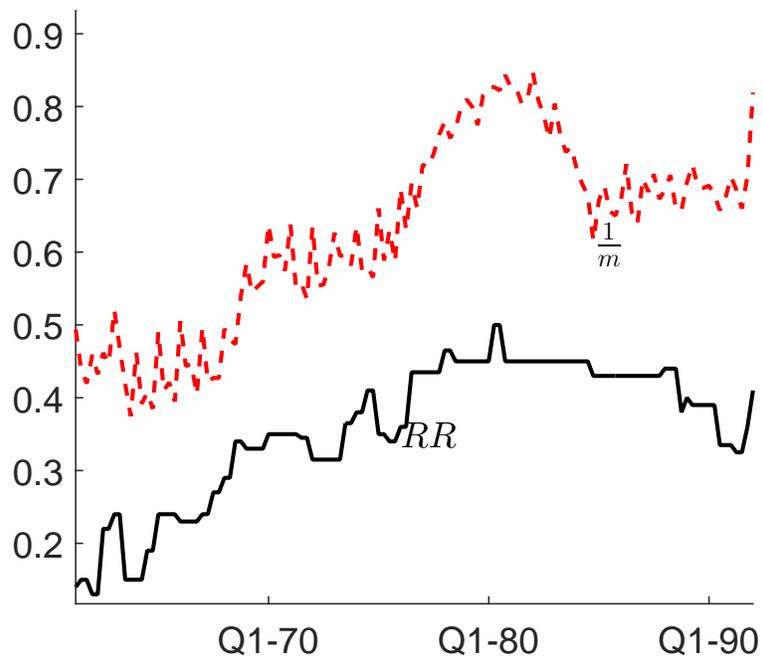
Source: Banco de la República and Junguito and Rincón (2007). Authors' calculations.

**Figure 19:** Annual growth of the monetary base and annual change of the money multiplier



Source: Hernández and Jaramillo (2015). Authors' calculations.

**Figure 20:** Reserve requirements and inverse of money multiplier



Source: Hernández and Jaramillo (2015) and Avella Gómez (2007b). Authors' calculations.

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