

WORKING PAPER

The Case of Colombia

David Perez-Reyna and Daniel Osorio-Rodríguez

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The Monetary and Fiscal History of Colombia: 1960-2017*

David Perez-Reyna[†] Daniel Osorio-Rodríguez[‡]

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Abstract

In this paper we characterize the joint history of monetary and fiscal policies in Colombia since 1960. We divide our analysis into three periods, which are differentiated by the finance structure of the fiscal deficit, the institutional framework of monetary and fiscal policies, and the levels of inflation: 1960-1970, when both inflation and the fiscal deficit were low on average; 1971-1990, when both inflation and the fiscal deficit increased; and 1991-2017, when despite the highest average fiscal deficit and the worst recession of the century, inflation kept a downward trend in the context of a newly independent Central Bank and increasingly flexible exchange markets. The first two periods were characterized by fiscal dominance, with larger fiscal deficits leading to increased inflation in the context of a nonindependent monetary policy. After 1991, the Constitution enshrined monetary dominance via an independent Central Bank. We observe that although large fiscal deficits, macroeconomic swings and monetary imbalances were rare in Colombia, average economic growth was comparable to other Latin American countries that experienced higher macroeconomic volatility.

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[†]Universidad de los Andes (e-mail: d.perez-reyna@uniandes.edu.co)

[‡]Banco de la República Colombia (e-mail: dosoriro@banrep.gov.co)

1 Introduction

In this paper we characterize the joint history of monetary and fiscal policies in Colombia since 1960 following the framework presented in Chapter 2. Our analysis gravitates around the joint evolution of inflation, economic performance, and the fiscal deficit of the Colombian central government and its sources of financing during the period between 1960 and 2017. As a first examination of our objects of interest, Figures 1, 2, and 3 present the evolution of the total fiscal deficit of the central government (as a percentage of GDP), CPI inflation in Colombia, and real GDP per capita (against a counterfactual trend of 2% growth). With regard to the fiscal deficit, three periods can be clearly identified: first, between 1960 and 1970 fiscal deficits were relatively small they averaged 0.43% of GDP; second, between 1971 and 1990, when fiscal deficits doubled on average (1.05%); lastly, between the early 1990s and the latest data available, where deficits have been the largest on average (3.27% between 1991 and 2017). We highlight the fact that the fiscal deficit peaked during years in which banking crises occurred: 2.75% in 1982 and over 6% of GDP in 1999, during the year of the worst economic crisis since the beginning of the twentieth century.

These three periods also translate into the evolution of inflation: between 1960 and 1970, inflation was low, on average (excluding the unusual peak of 1963, inflation averaged 8.4%); between 1971 and 1990 average inflation persistently increased to an average of 23.1%; lastly, after 1991 inflation gradually and persistently decreased to an average level of 3.9% post-2010, hitting the lowest levels of our time window. Importantly, the recession of 1999 coincided with a rapid decrease in inflation.

Finally, real GDP per capita grew at an average pace of 2.16% for the period of analysis. This number, though above a benchmark rate of 2% for advanced economies, was not sufficient to allow the economy to achieve a perceivable degree of convergence. Figure 3 highlights the two majors banking crises that Colombia experienced in 1982 and 1999.

Following from the previous analysis, we divide the Colombian experience after 1960 in three periods, which are differentiated by the finance structure of the fiscal deficit, the institutional framework of monetary and fiscal policies, and the levels of inflation. The first period, from 1960 to 1970, was characterized by both low inflation and the fiscal deficit, on average. During this period, monetary emission, through both increases in the monetary base and seigniorage, was the main source of financing. Foreign debt also played a role toward the end of the period. During the second period, 1971-1990, the Colombian economy experienced high and persistent inflation and higher fiscal deficits, this time in the context of frequent use of primary emission to finance government expenditures and heavy controlled foreign exchange markets, particularly after international finance dried up in the wake of

the Latin American debt crisis of the early 1980s. Throughout this period, the nominal exchange rate was heavily controlled, following a government-predetermined upward trend (crawling peg). The third period, from 1991 to this day, registered the highest average fiscal deficit, the highest peak in deficit, and the worst economic recession since the early twentieth century, these last two in 1999. Despite high deficits and a severe crisis, inflation kept a persistent downward trend, back to one-digit levels after 2010. This occurred in the context of a newly independent Central Bank, increasingly flexible exchange markets and a reorientation of deficit finance toward the domestic capital markets.

The division of our time window into three separate periods also allows us to illustrate the use of the conceptual framework of Chapter 2 to understand the evolving relationship between monetary and fiscal policies in Colombia. Specifically, the first two periods were characterized by fiscal dominance, institutionally defined as a nonindependent Central Bank. In a first stage (first period), fiscal discipline allowed inflation to remain at relatively low levels. In a second stage (second period), an expanded fiscal deficit led to increased inflation under frequent use of primary emission to finance government expenditures.

In 1991 a new Constitution enshrined monetary dominance via an independent Central Bank in charge of reducing inflation and accountable to Congress. Importantly, from 1993 to 1999, the Central Bank maintained a managed floating scheme of currency corridors. In this context, the increased fiscal deficits of the early 1990s did not lead to increased inflation (primary emission to finance the fiscal deficit all but disappeared after 1991). Instead, large deficits created relatively large external imbalances, leaving the economy vulnerable to a sudden stop shock of the sort that occurred in the late 1990s, which drove the economy to a harsh recession without an easy resort to nominal depreciations or monetary finance. Since then, monetary independence together with increased fiscal discipline and the adoption of a floating exchange rate allowed the economy to recover a certain degree of persistent macroeconomic stability, as evidenced by low historical inflation and fiscal deficits close to the average of our time window.

A key observation is that for the period of analysis, large fiscal or monetary imbalances in Colombia, relative to other Latin American countries, were extremely rare in at least two aspects. First, fiscal deficits were generally small and peaked at only around 6% of GDP at the end of the 1990s. Second, although the use of money emission to finance the government was frequent, it was never sizable compared with other countries: monetary emission to finance fiscal deficits was more than 2% of GDP only during two small time windows, 1977-1978 and 1991-1992. Remarkably, the Colombian government did not default on its foreign or domestic debts during the period of study.

The rarity of large fiscal or monetary imbalances or extended periods of large monetary

emission for budget finance purposes in Colombia could have contributed to a relatively stable macroeconomic environment during the period of analysis. The Colombian economy has been relatively less volatile than several of its Latin American peers: during this period there have been no hyperinflationary episodes (although, as discussed, inflation was high and persistent during the 1970s and the 1980s) and growth has been relatively stable. The worst recession since records began occurred in 1999, with a real growth trough of -4.2% in 1999, a relatively small contraction compared with other Latin American economies.¹

A more stable macroeconomic environment did not, however, foster long-term macroeconomic performance in Colombia relative to the rest of Latin America. As discussed before, real per capita GDP growth in Colombia was only slightly above the reference rate of 2% during the period. At the same time, as Figure 4 shows, the economic performance of Colombia during this period, again measured as real GDP per capita, was worse than average among comparable Latin American economies. Although there was some catch-up in the 1980s, as Colombia did not experience a lost decade, and then again in the early 2000s, growth reached only the level of peer economies well into the twenty-first century (Figure 5).

Relative stagnation in Colombia amid a stable macroeconomic environment can possibly be understood if we consider the complex relationship between financial repression and fiscal or monetary imbalances throughout our period of analysis. Prior to 1991, as discussed, fiscal deficits and monetary finance were small but frequent. At the same time, existing evidence indicates that policymakers routinely employed heavy financial repression to control key monetary aggregates (Hernández Gamarra and Jaramillo Echeverri 2017). After 1991, although financial repression was gradually abandoned, macroeconomic imbalances began to build up, creating the conditions for the financial crisis of the late 1990s.

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 fiscal deficit since 1960. 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 has been required by law to transfer resources from value-added taxes and social security to local governments and with the new Constitution of 1991 transfers increased. There are particular local taxes that local governments can levy, and some local governments even issue bonds

¹Bértola and Ocampo (2012) and Kodama (2013) highlight the low macroeconomic volatility that Colombia has experienced.

that are publicly traded, but the latter are not the most important sources for financing.²

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 that goes back to 1960 for how the national central government finances its fiscal deficit. Therefore, when we refer to debt, deficit, expenditures, income, etc., we are referring to claims on the central national government.

We use data from Junguito and Rincón (2007) for most data series since 1960. We are not able to identify indexed debt, so we can only discriminate between debt issued in Colombia, which we denote as domestic debt, and debt issued abroad, which we denote as foreign debt. We assume that foreign debt is issued in U.S. dollars and domestic debt is issued in Colombian pesos since debt issued in different currencies had little relevance.³ Our data allow us to discriminate between interest rate expenditures on domestic debt and on foreign debt. It is worth mentioning that interest on domestic debt includes interest on loans by the central bank to the government before 1991. Similar to how we deal with domestic and foreign debt, we assume that interest payments on foreign debt are in U.S. dollars, while interest payments on domestic debt are in Colombian pesos.

We update most series from Junguito and Rincón (2007) using data from Banco de la República Colombia (Central Bank). We also use data from the Central Bank for inflation and exchange rates. To update the series for interest payments on debt, we rely on the Ministerio de Hacienda.

Figure 6 shows the evolution of debt as a fraction of GDP. Three things are worth noting: first, since 1970 foreign debt was greater than domestic debt, up until the 1990s. 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 ten years foreign debt has decreased, while domestic debt has continued increasing, although during the last five years foreign debt has increased. As is seen in one of the simulations below, this increase is not the result of a real exchange devaluation.

²According to the Comptroller General of Colombia, by 2014 the debt of local governments represented 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).

³The 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 U.S. dollars. Unfortunately, we can only identify the currency of the bonds issued very recently. Even so, since 2001 the share of domestic debt indexed to U.S. dollars was always below 9%, and as of August 2009 all domestic outstanding debt has been in Colombian pesos. Foreign debt in Colombian pesos was first issued in November 2004 and has never represented more than 15% of the total. Also, since 2001 the share of foreign debt in U.S. dollars has averaged more than 80% of the total outstanding.

3 Periods of analysis

We identify three main periods in Colombia since 1960 that correspond to different dynamics in inflation, the fiscal deficit, the structure of financing of the deficit, and the institutional structure of monetary policy. The first period covers the window from 1960 to 1970; the second period covers the 29 years from 1971 to just before the promulgation of a new constitution in 1991; the third and final period spans from 1991 to 2017, which is the latest data point in our analysis.

Table 1 summarizes the budget accounting for the three periods that we analyze. The economic institutions largely determined the main source of government financing of its deficit: monetary emission in the first two periods and domestic debt in the final ones. Together with variations in the predominant source of finance, there are also changes over time as to the main components of the fiscal deficit. More specifically, we observe that until the early 1990s most of the fiscal deficit was accounted for by the primary deficit. Beginning in 1992, interest payments on domestic debt as a share of the deficit increased, as did the share of interest payments on foreign debt a few years later (see Figure 7). Additionally, we observe that the maximum deficit reached in each of the three periods increased over time, which suggests increasing macroeconomic imbalances, although smaller than those observed elsewhere in Latin America. Both the primary deficit and the fiscal deficit peaked in 1999. Figure 8 shows the evolution of fiscal deficit and its main sources of financing throughout our time window.

Before proceeding to a detailed analysis of the three periods, we provide some elements of the historical background of the joint determination of monetary and fiscal policies prior to 1960. Since the creation of the Central Bank of Colombia in 1923, the law opened the door to the possibility of the Central Bank extending direct loans to the central government. Despite the nominal independence of the Central Bank (the Minister of Finance only became a member of the Board of Directors in 1931, and even then, without the right to vote), in practice the borrowing limit was customarily bypassed by informal agreements between the government, Congress and the Central Bank to enact laws that would allow the latter to directly purchase public debt instruments issued by the government (not included in the category of direct loans). This tradition persisted after the Central Bank was reformed in 1951, particularly after the Minister of Finance acquired veto power on the board at the same time as the composition of the latter was altered to include representatives from the productive sectors of the economy. The tradition also continued after 1963, when the Board of Directors was replaced by the Monetary Board, in practice composed fully by members of the government, and lasted until the Constitution of 1991 made it harder for the Central

Bank to make loans to the government (Hernández Gamarra and Jaramillo Echeverri 2017).

3.1 1960-1970

The first period had the lowest average fiscal deficit of the three periods under analysis: 0.43% of GDP. Although characterized by fiscal dominance, inflation was also relatively low during this period. The main reason for this was that throughout the decade the size of the government was small: its expenditures fluctuated between 5% and 7% of GDP. A reason why financing needs were small throughout this period was the steady increase in tax revenues (see Figure 9).

A notable exception to low inflation during this period was 1963, with a one-off spike in inflation that reached the maximum observed for our sample (33.6%). This was also the year with the highest fiscal deficit: 1.2%. However, this deficit was financed mainly by foreign debt and the monetary base even decreased.

During this period a key change in the institutional structure of monetary policy was put in place. Specifically, the monetary reform of 1963 created the Monetary Board, in charge of monetary, credit, and exchange policy, aimed at contributing to the financing of those sectors of the economy considered crucial for long-term economic development.⁴ The Monetary Board would remain in charge of monetary policy until the Constitution of 1991. The switch toward a monetary policy with functions akin to those of a development bank and more directly controlled by the government naturally had implications for the financing of the fiscal deficit, as will be seen more clearly in the next subsection.

In terms of exchange policy, prior to 1967 there was a complex system of multiple fixed exchange rates, which were often adjusted (Figure 10). This system was abandoned in 1967 in favor of a single, tightly controlled crawling peg with a positive slope. The change responded not only to the exchange anarchy of the previous period but also to a textbook first-generation balance of payments crisis in 1966: an increase in the Central Bank's credit to the government and a relative stagnation in reserves (see Figure 11). Naturally, a key ingredient of the regime was a tight control of all transactions in foreign currency. As the Monetary Board, this exchange regime lasted until the early 1990s after the promulgation of a newly independent Central Bank.

⁴According to Hernández Gamarra and Jaramillo Echeverri (2017), from 1951 to 1963 monetary policy was in the control of private hands (among them, private banks), delegated by the government to administer monetary and exchange policy in the interest of an “ordered development of the Colombian economy.”

3.2 1971-1990

The second period of our analysis was characterized, first, by larger and more persistent inflation and fiscal deficits. During this period, average inflation increased to 23.1% and fiscal deficits doubled in average compared to the previous period (1.05%). Given the institutional structure brought about by the Monetary Board, this period can be understood as one where fiscal dominance prevailed: increasing fiscal deficits during specific periods (particularly around the financial crisis of the early 1980s) were matched by heavy use of credit from the Central Bank and high average inflation. During this period, monetary emission rose to prominence as the main instrument to finance the fiscal deficit, followed by foreign debt (0.31%).

Contrary to other emerging economies, foreign borrowing was not the rule during the second half of the 1970s. There is a clear reason for this. After decades of stability around US\$1/kilo, the price of Colombian coffee rose almost six times in real dollars in the course of just two years, from 1975 to 1977 (see Figure 12). These developments helped to bring about a period of fast economic growth (see Figure 13) and reduced external financing needs, for coffee was at the time the most important export commodity produced in a relatively undiversified Colombian economy. Figure 14 illustrates this fact: coffee exports accounted for over 10% of GDP in some years. At the peak of the boom in 1977, the economy grew at almost 8.5% in real terms. The coffee boom increased the tax revenue for the government via taxes on coffee exports.

After the coffee boom ended, the government resorted to international capital markets to fund increased government expenditures. From 1977 until 1982, government expenditures grew quickly, increasing the relative size of the state almost by half (the ratio of government expenditures to GDP grew from 5.6% to 8.2% during these five years). The main reason for this increase in government expenditures was the deep financial crisis that hit the Colombian economy in 1982, which led to the nationalization of banks and to the Central Bank using primary emission to finance loans to credit-choked productive sectors.

According to Caballero Argáez and Urrutia Montoya (2006), the financial crisis was the result of increased financial repression during the coffee boom years, which led to financial innovations oriented towards speculative investments and occasionally evading regulatory controls.⁵ When authorities intervened with the Banco Nacional in June 1982 (and the Banco del Estado in October of the same year), the ensuing loss of public confidence in the financial system forced the Central Bank to use its lender of last resort facilities, in a first

⁵A favorite mechanism for regulated institutions to evade controls was the use of complex operations between financial and real sector firms belonging to the same financial conglomerate. Later in this chapter we will elaborate on the relationship between financial repression and monetary policy in Colombia.

stage, eventually followed by the decree of outright nationalization powers to the central government. In early 1983, the Monetary Board decided to use primary emission to provide discount credit to credit-choked productive sectors as well, in a context where the default of domestic banks to international financial institutions created additional hardship for the ability of the central government to obtain financial support abroad. In 1985, the government created the National Fund for the Guarantees of Financial Institutions (Fogafin), in charge of administering the deposit insurance fund and a resolution fund for financial institutions. Through Fogafin the government nationalized, among others, the largest bank of the system.⁶ The nationalization operations consisted mostly of a bailout of financial institutions funded with primary emission through the injection of fresh capital and the assumption (by the government) of earlier debts of banks with the Central Bank.

The financial crisis helps to explain the increase in both the fiscal deficit and the stock of debt. The combination of these elements forced the Colombian government to rely heavily on money emission from the Central Bank as its main source of finance after 1982. After 1982, there was a prevalence of direct loans from the Central Bank to the government in the financing of the fiscal deficit: during the period between 1982 to 1986, an average fiscal deficit of 2.26% of GDP was mostly financed with credit from the Central Bank. Despite the financial crisis, 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).

It is interesting to note that even though fiscal deficits were relatively low, inflation averaged over 20% during this period. A possible explanation is related to the institutional framework at the time. The resources that the Central Bank generated (growth of monetary base and seigniorage) did not necessarily correspond to what it transferred to the government. To analyze this point further we rely on García García and Guterman (1988) to account for the resources that the government used to finance its deficit, instead of implicitly deriving them from the series of monetary base and debt. Comparing Figures 8 and 15 we conclude that the actual resources that the government received were less than what was implied by the growth of monetary base. This is consistent with the fact that the Central Bank, besides lending to the government, also lent to private firms. Therefore, low fiscal deficits could be underestimating the impact of monetary emission on inflation.

Before proceeding to the next period of analysis, we need to mention an important legacy of this period.

⁶At the end of 1983 the crisis hit the largest bank of the system (Banco de Colombia) after years of mismanagement, complex lending operations to firms belonging to the Banco's conglomerate funded with deposits, illegal foreign currency loans to the same firms through the Banco's branch in Panama, nonperforming loans, and default to international financial institutions. The Banco de Colombia was finally nationalized in January 1986.

An important consequence of an underdeveloped financial system was the absence of a well-developed mortgage credit market. To address this, in 1974 the Colombian government established special financial institutions named CAVs (savings and home corporations) whose main goal was to supply mortgages. To address the negative effects of inflation, CAVs were authorized to issue loans denominated in *UPACs* (Constant Power Purchasing Units) indexed first to inflation and eventually to a measure of the nominal interest rate of the economy. CAVs funded these loans through deposits, whose return was also indexed to *UPAC*. At a point in time when deposit rates were capped, CAVs were able to increase their market share considerably. By 1985 they held 14.5% of all financial assets, after just 11 years of coming to existence (Hernández Gamarra and Jaramillo Echeverri 2017).

3.3 1991-2017

The third period in our story begins in 1991, with the promulgation of the new Political Constitution of Colombia and includes the worst economic and financial crisis since the early twentieth century. This period was mainly characterized by the predominant use of domestic debt instruments to finance primary deficits, the virtual disappearance of monetary financing sources, and the gradual disinflation of the economy. Average inflation through this period fell to 10.12% (4.87% after 2000) despite fiscal deficits ballooning to an average of 3.27%. This period is characterized by an institutional switch of the Colombian economy to monetary dominance: larger fiscal deficits forced the government to resort to domestic and international capital markets and to respect a certain degree of fiscal sustainability, especially after the fiscal crisis of 1999. During this period, monetary financing was mostly in the form of transfers of profits from the Central Bank.

The promulgation of a new Political Constitution of Colombia in 1991 radically changed 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, which would in turn spend them on 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 any time 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 direct 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 direct loan to the central government.

One major change was the foreign exchange policy. After 24 years, the foreign exchange rate was partially allowed to be determined by market forces. Additionally, Colombia opened its borders to goods (import tariffs were lowered from an average of 43.7% in February 1990 to 11.7% by March 1992) and capital flows (Ocampo G. 1998). An important degree of exchange control was kept by the Central Bank in the form of crawling corridors for the nominal exchange rate, within which the nominal exchange rate was market-determined, and the Central Bank intervened only if the rate got close to the corridor limits. Originally bands were specified to have a width of 7% relative to a medium level established by the Central Bank, as it was believed that this width was enough to adjust to shocks in the real exchange rate. The medium level was specified to crawl upward over time, according to the difference between expected domestic inflation and foreign inflation. In June 1999, the width of the bands was increased to 14%, a few months before the band system was abandoned in September 1999 (see Figure 16, where the band is drawn as the red, dotted line). Since then, the exchange regime has been (mostly) flexible, with occasional interventions from the Central Bank to mitigate excessive volatility in the foreign exchange market.

The transfer commitments provided by the Constitution to the regional governments caused a rapid increase in central government expenditures (see Figure 9), mostly in social security (Ocampo Gaviria 1997). The size of the government almost doubled between 1991 and 1999, as the ratio of central government expenditures to GDP increased from 8.9% to 16.9%. Tax revenues did not increase at the same pace, though, thereby generating an increasing primary deficit. In 1999 the fiscal deficit reached 6.4% of GDP, the highest mark in our sample.

During this period inflation went from almost 30% to the low single digits (Figure 17). The fastest decreases in inflation occurred during the 1990s. The foreign exchange policy played a role in these dynamics. As Figure 18 shows, during the first years of 1990s the exchange rate bands caused expected devaluation to decrease. The nominal exchange rate followed this path as well. During the second half of the decade this pattern reversed, but at this point inflation was already in a decreasing pattern. In 2000, after the worst economic crisis in records which is discussed shortly, inflation reached the single digits for the first

time since the 1970s.

Figure 8 documents the finance structure that characterizes this period. First, as a result of the constitutional reform to the Central Bank, monetary financing decreased. According to the law, seigniorage financing is 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 privatize key industries (mainly energy and coal), thus obtaining temporary finance worth up to 1.6% in 1996.

Lastly, and perhaps most important of all, early in 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 gave a boost to the development of domestic money markets and became 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. The increase in the stock of domestic debt came hand in hand with a sustained increase in foreign exchange reserves in the early 1990s (Figure 19).

In the transition between a fiscal deficit predominantly financed with money emission to one predominantly financed with domestic debt instruments, there is an important question with regard to the fate of the debt stock of the government to the Central Bank. In the case of Colombia, data from the balance sheet of the Central Bank indicate that the stock of government debt was progressively (that is, as payments to the Central Bank became due) swapped by TES, with which the Central Bank could perform monetary operations with financial intermediaries. As can be seen in Figure 20, the swap was completed in such a way that the participation of government debt securities in the assets of the Central Bank came to resemble almost exactly the share of outstanding government debt prior to 1991.⁷

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 and a consequent increase in interest payments to international capital markets (Figure 7). The dramatic fiscal consequences of the eventual sudden stop are evident in Figure 21 with an abrupt reversal of the current account deficit. In fact, by the second quarter of 1999 there was a current account surplus.

The recession lasted from 1998 to 2000; real GDP fell by 4.2% in 1999, the worst con-

⁷The ability of the Central Bank to purchase TES in secondary markets does not constitute seigniorage or money emission to finance the fiscal deficit inasmuch as interest rates are market determined.

traction since records began. The central government entered a standby agreement with the International Monetary Fund which forced a macroeconomic adjustment via the gradual reduction of the primary deficit. This was achieved through a reform of the transfers arrangements to regional governments and a series of tax reforms starting in April 2000, which gradually increased tax revenue (the effect of this reform on tax revenue is evident in Figure 9 as a change in the slope of the ratio of revenues to GDP). Both the interest expenditure and the stock of foreign debt fell gradually, whereas the interest expenditure and the stock of domestic debt stabilized, with net TES emissions fluctuating around 2.5% of GDP in subsequent years.

An important component of the recession was its coincidence with the deepest financial crisis in Colombian history. Because of the exchange rate bands, monetary policy naturally was partially subordinated to foreign exchange rate policy. The sudden stop that the country endured came hand in hand with devaluation pressures. The reaction of the Central Bank was twofold: first, it shifted upwards the exchange rate bands (Figure 16), arguing that the fundamentals of the economy had changed due to the Southeast Asian and Russian crises of late 1990s; second, the Central Bank defended the exchange rate band by intervening heavily in the foreign exchange rate market, which led to an important decrease in foreign exchange reserves (Figure 19); and, crucially, by increasing the nominal interest rates of the economy. As briefly discussed in the previous subsection, most of the mortgage credit market used loan instruments indexed to the nominal interest rate. The rise in real interest rates (accompanied by higher inflation and nominal depreciation) induced a large increase in nominal rates, leading to a sharp increase in the debt service ratios of a large number of Colombian households. The ensuing increase in the default rate of mortgage loans (the largest since records began) hit CAVs especially hard, leading to the bankruptcy of several of them, their acquisition by larger banks and their disappearance as a class of financial institution. To this day, mortgage credit as a share of GDP has not reached the levels observed previous to 1999.

The financial crisis of 1999 was thus fundamentally different from the crisis of 1982. It was especially different in a key aspect: in 1999, the Central Bank also used heavily its lender of last resort facilities but, unlike in the eighties, it was not allowed to finance bailout operations with primary emission. The nationalization of banks (among them, Granahorrar --the largest CAV) was administered on this occasion by Fogafin, which capitalized troubled banks issuing bond instruments backed by the government.⁸

⁸The government also promulgated laws to alleviate the debt service ratio of mortgage borrowers. According to Caballero Argáez and Urrutia Montoya (2006), the total cost of the crisis to Fogafin reached 9.7% of the GDP of 1998. A total number of 35 financial institutions were intervened for liquidation by the authorities.

In 1999 the exchange rate was allowed to float (almost freely). The benefits of this floating have been twofold: monetary policy could focus on controlling inflation, instead of on reacting to the exchange rate; and the nominal exchange rate could respond to foreign shocks (Figure 16).⁹

After 1999, with an exchange rate that could adjust to market conditions, monetary policy could focus on achieving a low level of inflation. Beginning in 2001 the Central Bank adopted a full inflation targeting scheme, established an explicit inflation target, and stated a long-term inflation goal of 3%. At the dawn of the twenty-first century, the Colombian economy entered a long expansionary period. Unlike the previous booms discussed in this paper, in this instance 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 ten-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) amid the global financial crisis of 2008-09 and the continued ability of the central government to finance primary deficits throughout the period. In fact, for the first time ever, the Central Bank was able to implement a countercyclical policy and lower its policy rate as the growth of the economy decreased.

4 Debt simulations

In analyzing how the government financed its fiscal deficit, we treated transfers as a residual. In this section we analyze the role that these transfers played on the dynamics of debt. Figure 22 contrasts the observed evolution of debt to GDP, to the implied evolution of debt had transfers equaled 0 in every year. The cumulative effect of transfers accounts for close to slightly over 60% of GDP by the end of the period of analysis, which implies average transfers of 1% of GDP.

We also analyze the role played by the real exchange rate in debt dynamics. In Figure 23 we compare the observed dynamics of debt to GDP with the implied evolution of debt with a fixed real exchange rate. The real exchange rate of 2007 is close to the average of RER across our sample, so the implied evolution of debt keeps the real exchange rate fixed to the observed RER of that year. It is worth noticing that both lines follow fairly the same path

⁹It is interesting to note, though, that in 2016 the Central Bank had to increase its policy rate in part due to an important devaluation in the nominal exchange rate that resulted in a pass-through in inflation, even as the real growth of the economy was low.

for most of the period, and at low levels. This is consistent with the fact that debt was low up until the early 1990s. Episodes of the real exchange appreciation of the late 1970s and the real exchange devaluation of the mid-1980s are evident, but the disparity is not considerable.

The real exchange appreciation of the early 1990s is not perceptible since this coincides with a surge in domestic debt. However, the real exchange-real devaluation after the economic crisis of the late 1990s is evident and accounts for slightly more than 6% of GDP in 2002.

5 Discussion

One implication of the framework in Chapter 2 is that inflation will naturally result as a consequence of fiscal deficits when there is fiscal dominance. When there is monetary dominance, fiscal deficits need to be relatively controlled, otherwise risking costly fiscal or financial crises. In the end, the question of fiscal or monetary dominance is a question about the institutional structure (determined by historical, economic, and political factors) of a given country.

In the case of Colombia, the period between 1960 and 1990 is one in which the institutional structure of monetary policy clearly configured an equilibrium of fiscal dominance, chiefly through the lack of independence of the Central Bank from the government and its goal of promoting economic development in a context of heavily controlled foreign exchange markets. Within this period, inflation was relatively low when fiscal deficits were low (1960-1970), and duly increased under the expectation of widened fiscal deficits in the late 1970s and early 1980s. In contrast, the institutional reforms created by the Constitution of 1991 promulgated monetary dominance in the form of a newly independent Central Bank. In this context, larger fiscal deficits could not be financed by monetary emission and left the economy exposed to external financing shocks. Since 2000, an equilibrium with monetary dominance and enhanced fiscal discipline mechanisms has allowed the Colombian economy to maintain macroeconomic stability and gradually lower inflation.

It has been argued elsewhere that a reason for the macroeconomic stability that Colombia endured throughout its history is the memory of a hyperinflation episode at the beginning of the twentieth century, during a civil war. In four years (1900-1903) inflation was over 50% per year and in 1901 it reached 327.6%. This led the economic authorities of the time to create a new currency, also named peso, by slashing two zeros from the previous currency. With this change, the new peso was at parity with the U.S. dollar (Junguito and Rincón 2007). A practical question that is left to be addressed is why and how, during the prolonged period of fiscal dominance between 1960 and 1991, inflation never increased to levels remotely comparable

those of other Latin American economies that suffered recurrent hyperinflationary episodes. One potential explanation in this respect has been proposed by Hernández Gamarra and Jaramillo Echeverri (2017) in the form of the dynamic relationship between monetary discipline and financial repression in Colombia. Even though macroeconomic imbalances were not large prior to 1991, this was not necessarily because policies were prudent. Financial repression may have helped to avoid large, undesirable macroeconomic fluctuations. This is consistent with the fact that although macroeconomic volatility was low, the Colombian economy did not catch up perceptibly faster than other Latin American countries.

Specifically, Hernández Gamarra and Jaramillo Echeverri (2017) argue that there is a historical, 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 necessarily follow suit, which might help explain why inflation in Colombia never went beyond 30% per year during this period. The reason for this negative comovement is consistent with the active use of reserve requirements throughout the period. In fact, the (inverse of the) money multiplier moves hand in hand with the reserve requirements (see Figure 25). Together, Figures 24 and 25 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 that caused a rapid accumulation of foreign exchange reserves. For instance, during the coffee boom of late 1970s, foreign reserves doubled in 1975-1976 and reached US\$1 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 2007). Consistent with this argument, the short-lived spike in inflation during the early 1980s may have been related to the fact that higher growth in money emission was not immediately accompanied by rises in either the reserve requirement or reductions in the money multiplier.¹⁰

Since 2000, the combination of monetary dominance and fiscal discipline has allowed the economy to achieve macroeconomic stability without the need for financial repression. The fact that GDP growth in Colombia remained well above zero during the global financial crisis of 2008-9 is indicative of the increased resilience of the economy to external shocks.

¹⁰The argument proposed here of a policy mix of money growth and financial repression implies a broader understanding of money supply in the context of a simple government budget constraint as detailed in earlier chapters. In this case, seigniorage revenues would be interpreted as also including those earned as credit expansion from a repressed banking system. In this sense, with higher financial repression, money emission would correspond to a larger share of seigniorage revenues.

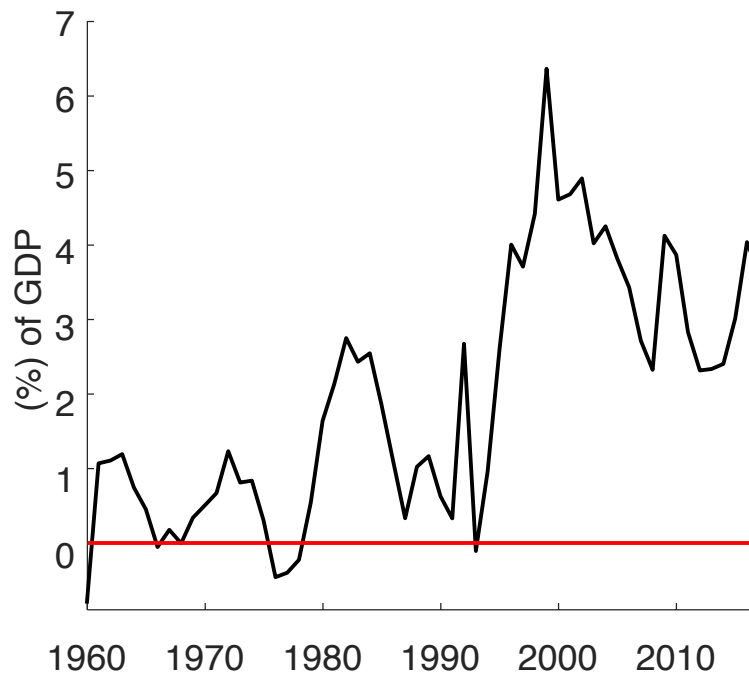
Together with fiscal discipline, an enhanced prudential financial regulation since 1999 has also been a key factor behind macroeconomic stability.

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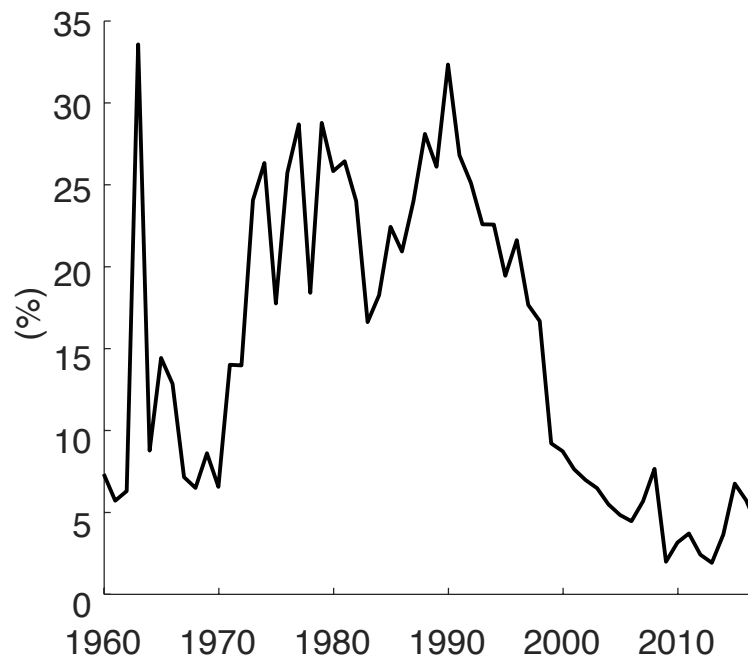
Table 1: Summary of budget accounting

	$\Delta\theta^v$	$\xi\Delta\theta^*$	Δm	Seigniorage	Return on domestic debt	Return on foreign debt	T	D
1960-1970	0.25%	0.28%	0.07%	0.83%	-0.52%	-0.19%	2.01%	0.15%
1971-1990	-0.17%	0.00%	-0.09%	1.48%	-0.61%	-0.32%	1.65%	0.50%
1991-2017	0.97%	0.30%	0.16%	0.79%	0.19%	0.14%	1.11%	0.78%
1960-2017	0.44%	0.19%	0.06%	1.04%	-0.22%	-0.09%	1.47%	0.56%

Figure 1: Fiscal deficit, 1960-2017

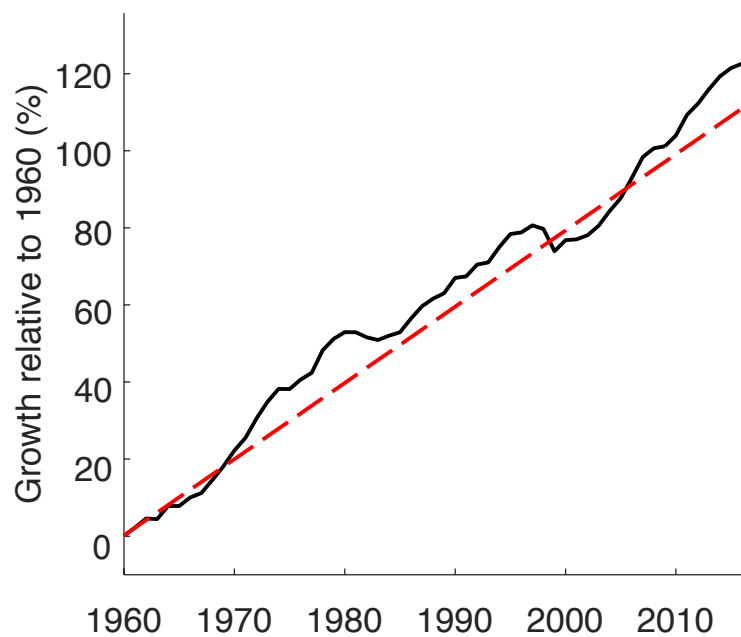
Source: Junguito and Rincón (2007), Banco de la República Colombia.

Figure 2: Inflation, 1960-2017



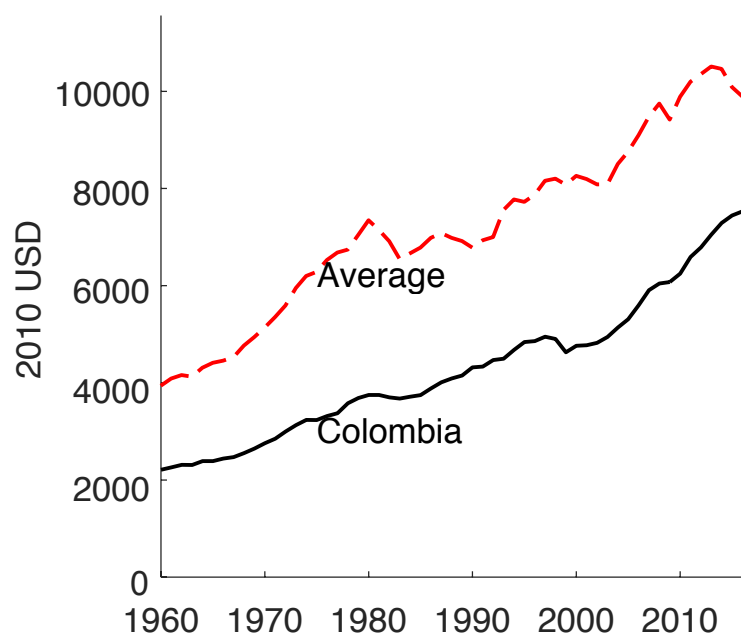
Source: Banco de la República Colombia. Authors' calculations.

Figure 3: Real GDP per capita vs. 2% counterfactual, 1960-2017



Source: World Bank. Authors' calculations.

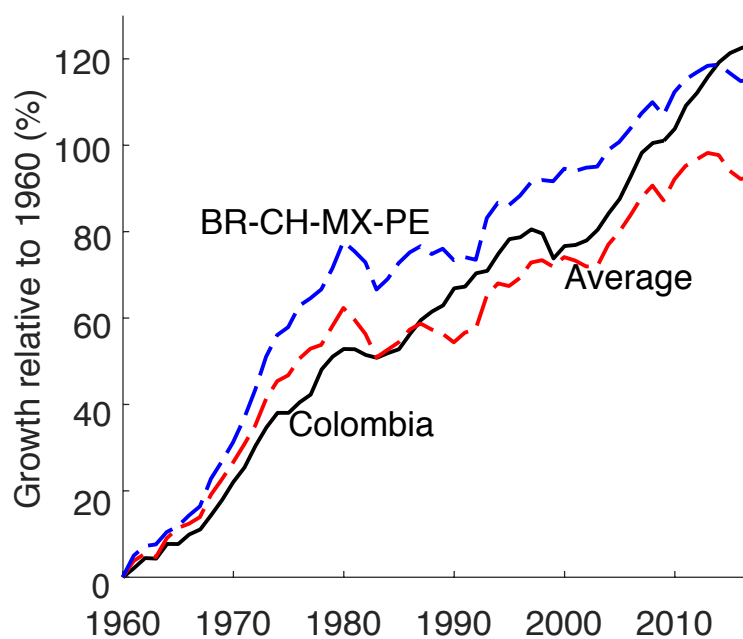
Figure 4: Real GDP per capita



Source: World Bank. Authors' calculations.

Average is the average of GDP per capita for Argentina, Bolivia, Brazil, Chile, Ecuador, Mexico, Peru, Paraguay, Uruguay and Venezuela, in 2010 dollars, weighted by population.

Figure 5: Real GDP per capita growth

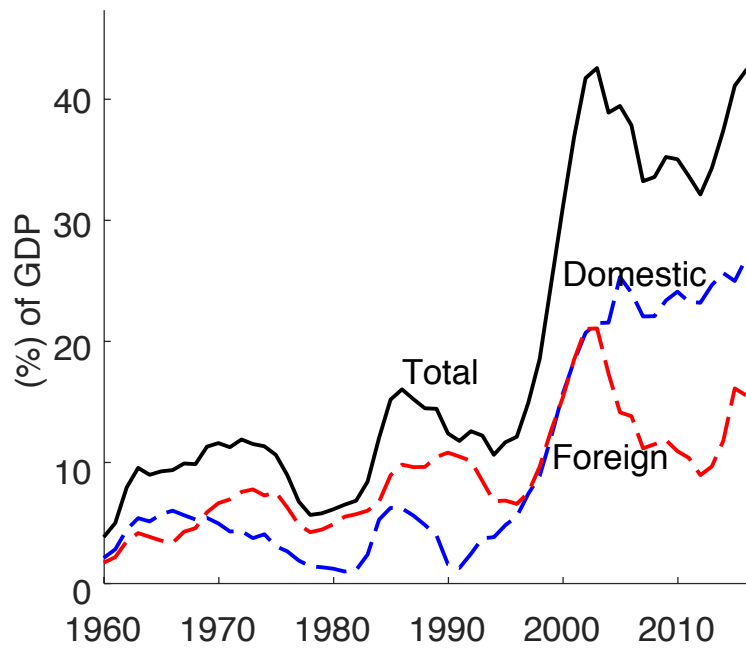


Source: World Bank. Authors' calculations.

Average is the average of GDP per capita for Argentina, Bolivia, Brazil, Chile, Ecuador, Mexico, Peru, Paraguay, Uruguay and Venezuela, in 2010 dollars, weighted by population.

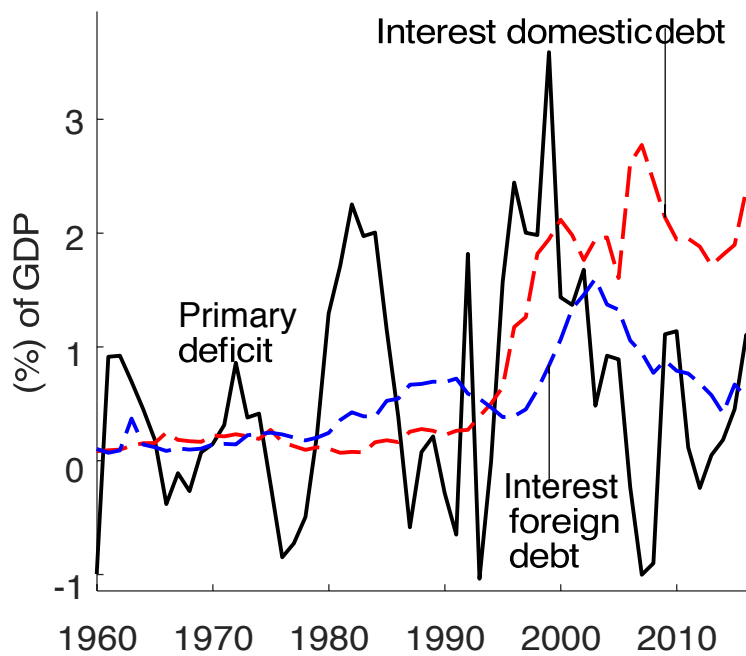
BR-CH-MX-PE is the average of GDP per capita for Brazil, Chile, Mexico and Peru, in 2010 dollars, weighted by population.

Figure 6: Debt to GDP



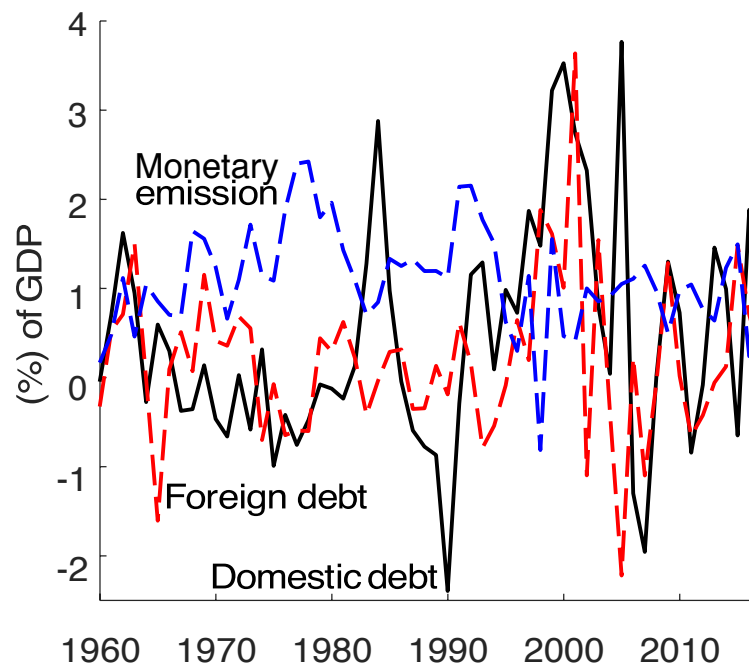
Source: Junguito and Rincón (2007). Authors' calculations.

Figure 7: Primary deficit and interest payments



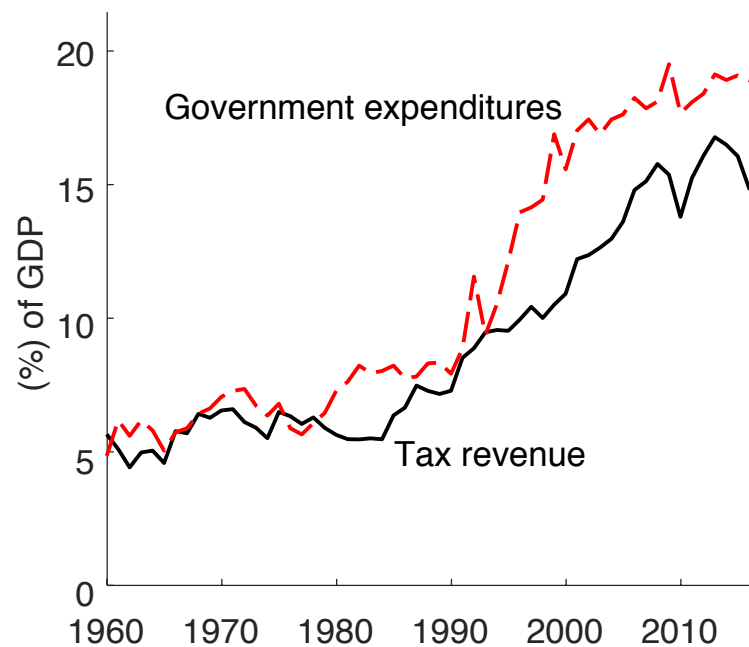
Source: Junguito and Rincón (2007) and Banco de la República Colombia. Authors' calculations.

Figure 8: Financing



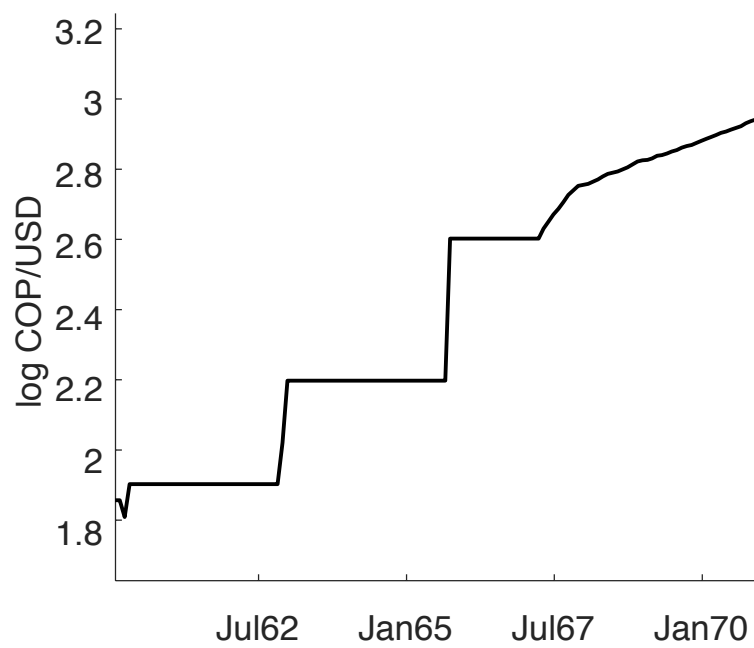
Source: Junguito and Rincón (2007) and Banco de la República Colombia. Authors' calculations.

Figure 9: Government expenditures and tax revenue



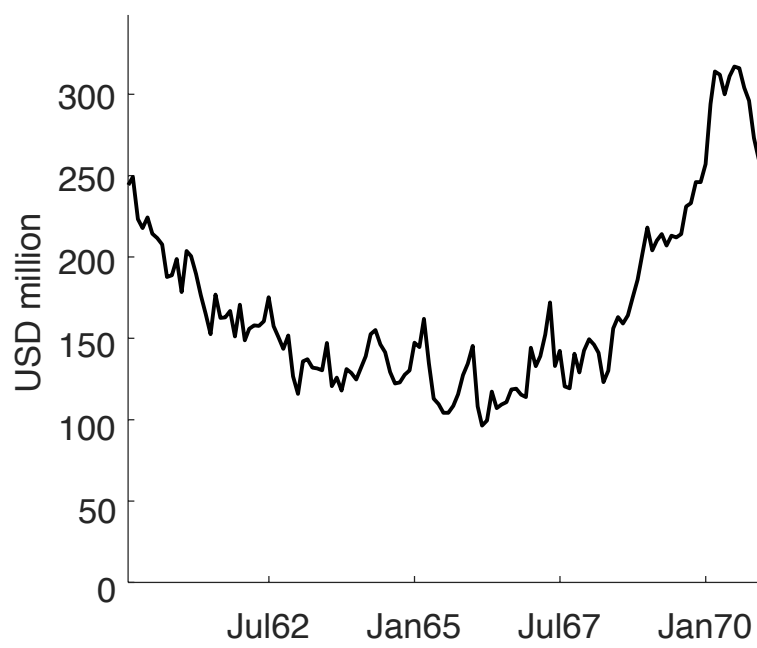
Source: Junguito and Rincón (2007) and Banco de la República Colombia. Authors' calculations.

Figure 10: Nominal exchange rate: 1960-1970



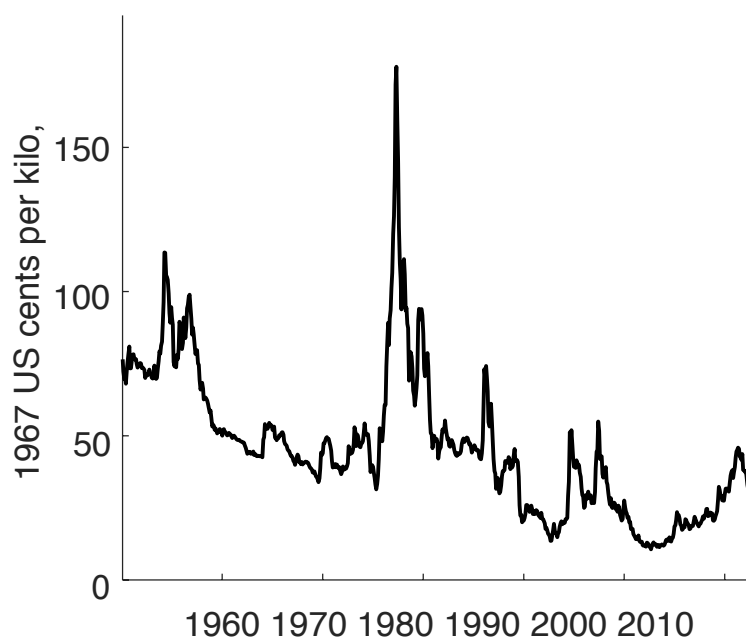
Source: Banco de la República Colombia.

Figure 11: Foreign exchange reserves: 1960-1970



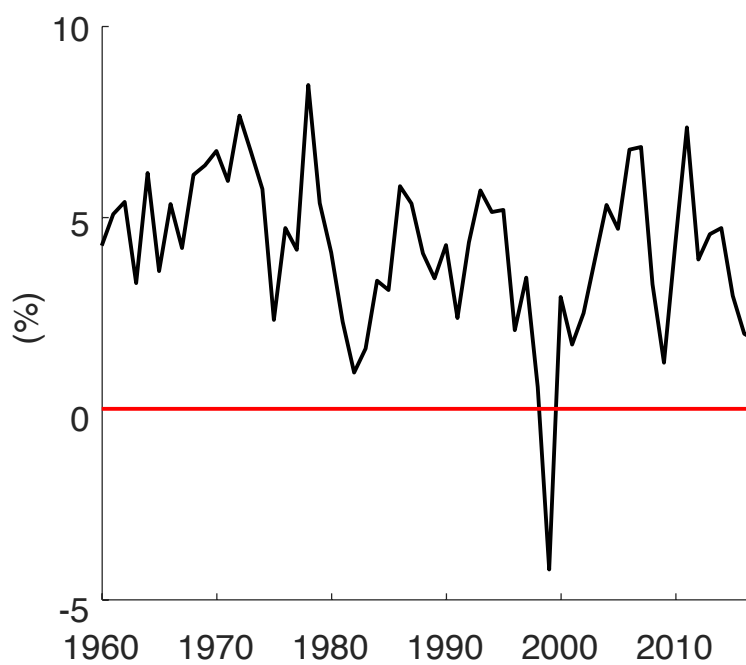
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Figure 12: Price of Colombian coffee



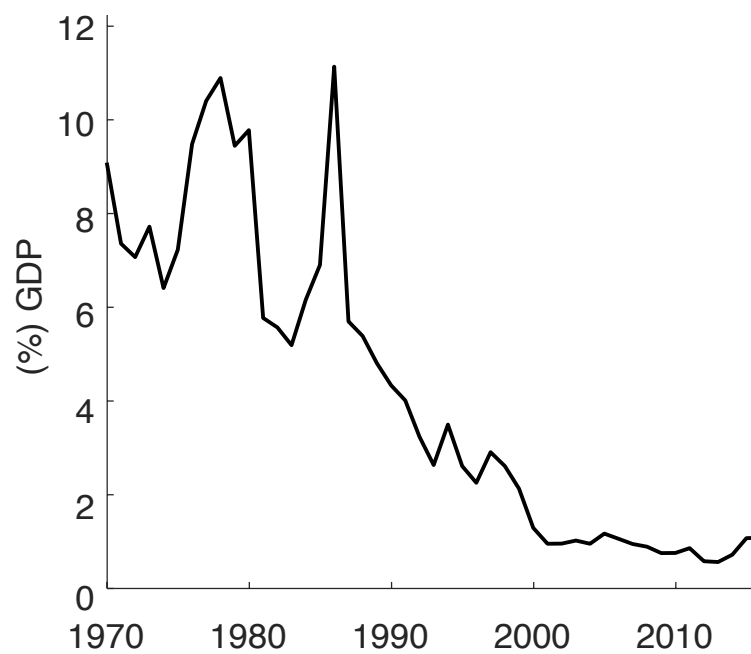
Source: Colombian Coffee Growers Federation. Authors' calculations.

Figure 13: Real GDP growth



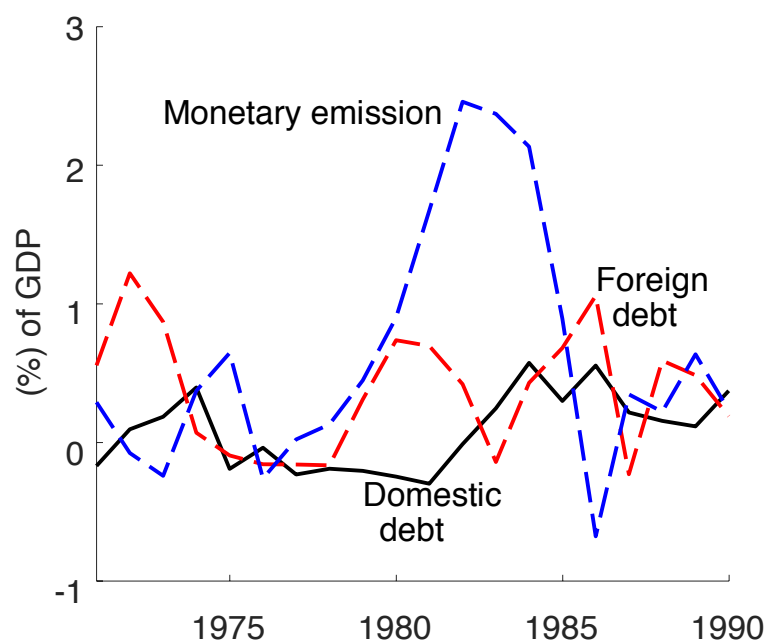
Source: Junguito and Rincón (2007) and Banco de la República Colombia. Authors' calculations.

Figure 14: Exports of coffee relative to GDP



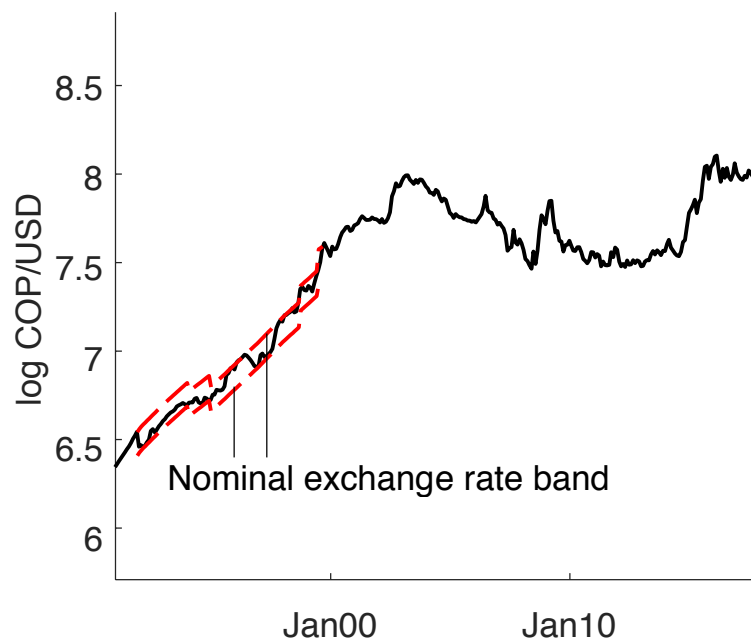
Source: Banco de la República Colombia and World Bank. Authors' calculations.

Figure 15: Alternative measure of financing



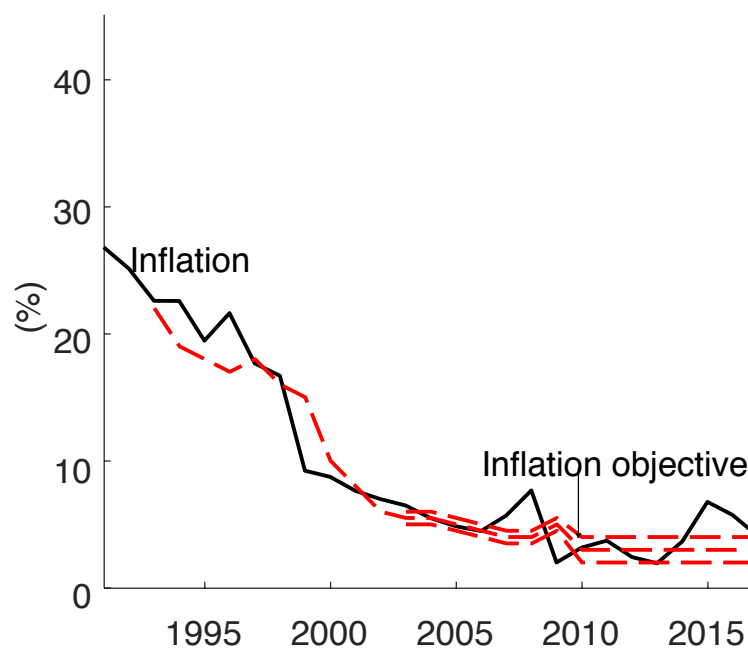
Source: García García and Guterman (1988). Authors' calculations.

Figure 16: Log nominal exchange rate: 1991-2017



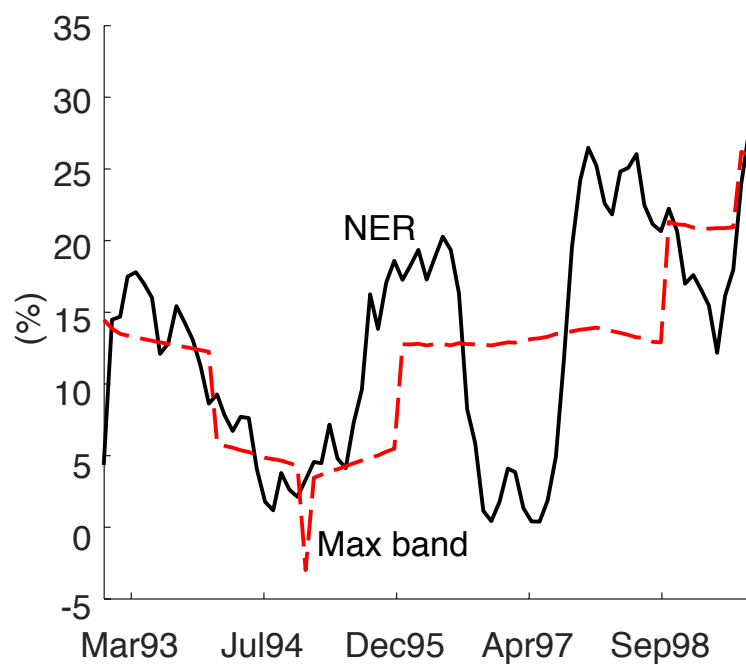
Source: Banco de la República Colombia.

Figure 17: Inflation: 1991-2017



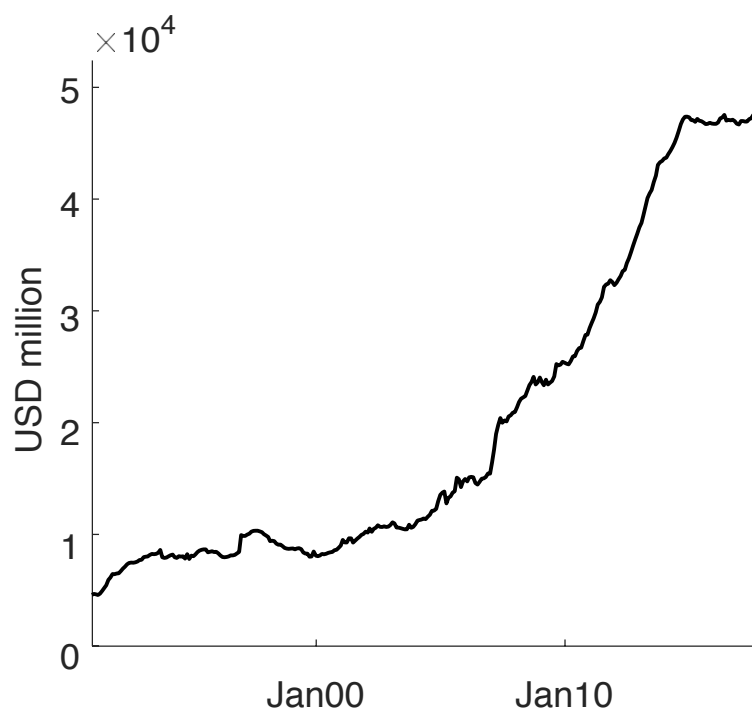
Source: Banco de la República Colombia.

Figure 18: Expected and realized devaluation



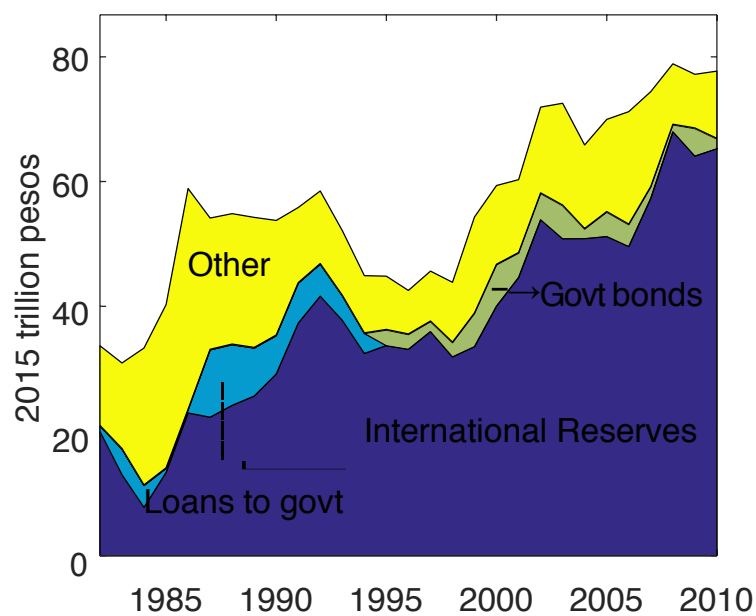
Source: Banco de la República Colombia.

Figure 19: Foreign exchange reserves: 1991-2017



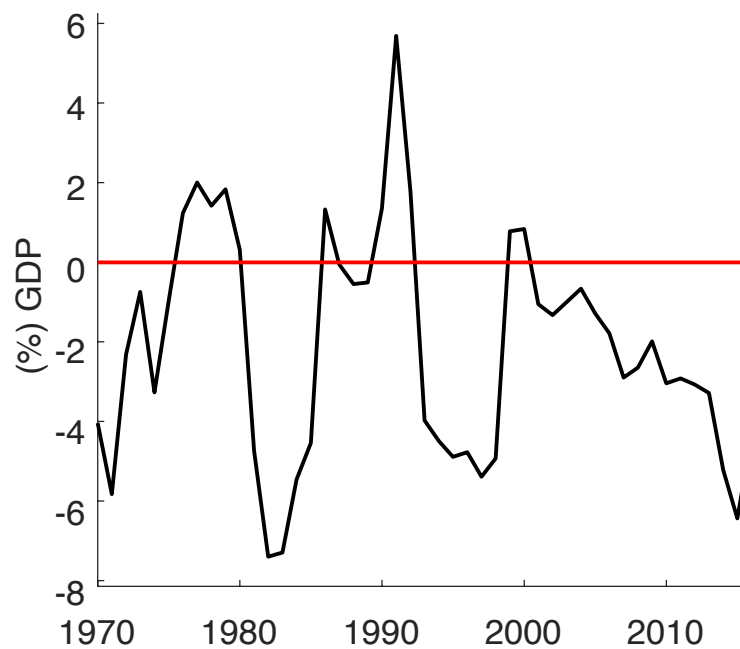
Source: Banco de la República Colombia.

Figure 20: Balance sheet of the Central Bank



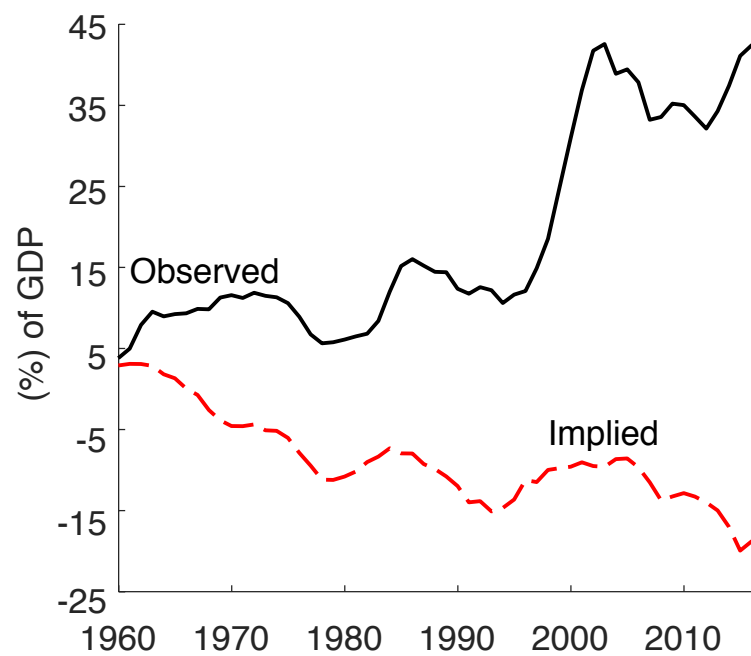
Source: Banco de la República Colombia.

Figure 21: Current account as a share of GDP



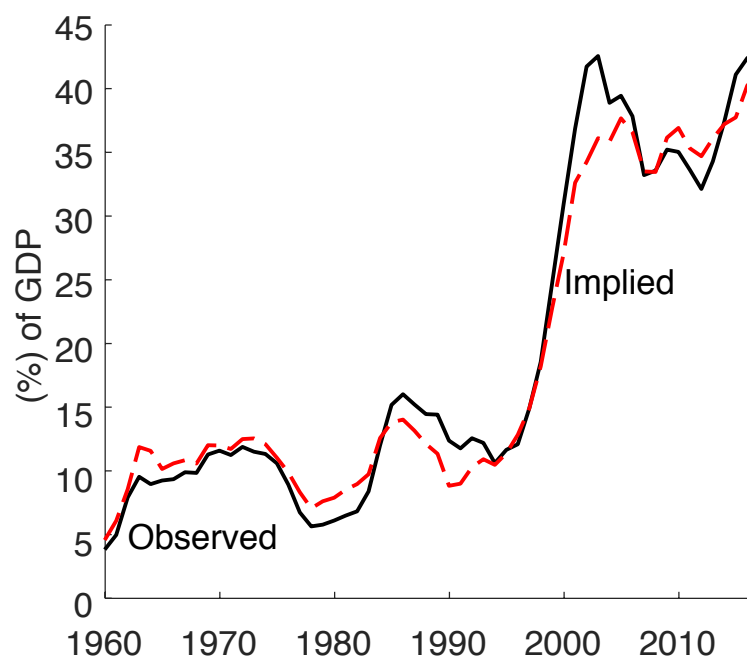
Banco de la República Colombia.

Figure 22: Isolating effect of transfers on debt dynamics



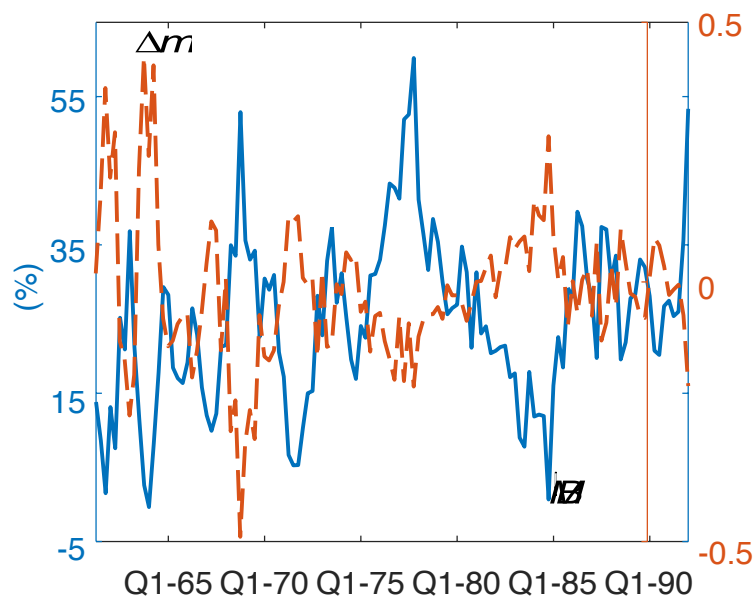
Source: Junguito and Rincón (2007), Banco de la República Colombia. Authors' calculations.

Figure 23: Isolating effect of RER on debt dynamics



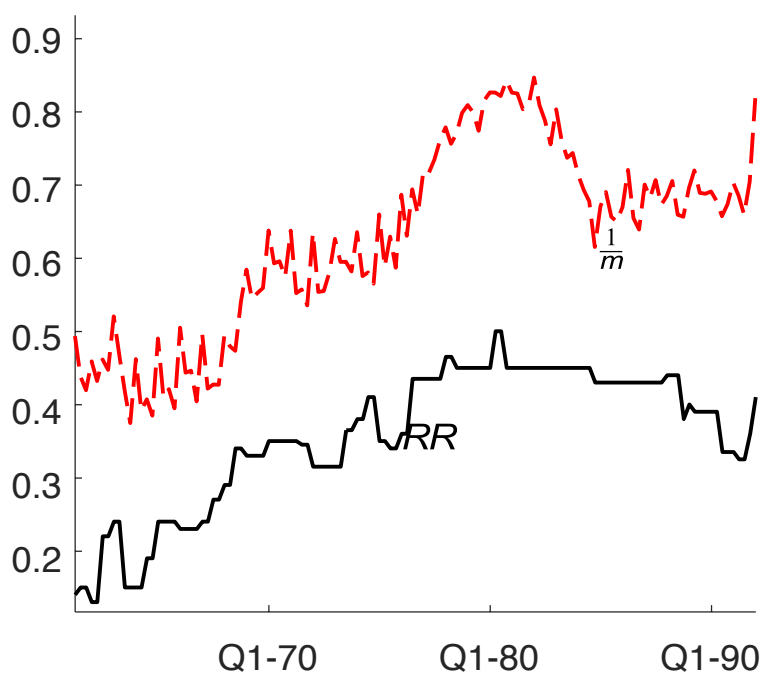
Source: Junguito and Rincón (2007), Banco de la República Colombia. Authors' calculations.

Figure 24: Annual growth of the monetary base and annual change of the money multiplier



Source: Hernández Gamarra and Jaramillo Echeverri (2017). Authors' calculations.

Figure 25: Reserve requirements and inverse of money multiplier



Source: Hernández Gamarra and Jaramillo Echeverri (2017) and Avella Gómez (2007). Authors' calculations.