

WORKING PAPER

The Case of Argentina

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The Monetary and Fiscal History of Argentina, 1960–2017*

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Abstract

In this paper, we review the monetary and fiscal history of Argentina for the period 1960–2017, a time during which Argentina suffered several balance of payments crises, three hyperinflations, two defaults on government debt, and three banking crises. All told, between 1979 and 1991, after several monetary reforms, thirteen zeros had been removed from its currency. We argue that all these events are the symptom of a recurrent problem: Argentina’s unsuccessful attempts to tame the fiscal deficit. An implication of our analysis is that the future economic evolution of Argentina depends greatly on its ability to develop institutions that guarantee that the government does not spend more than its genuine tax revenues over reasonable periods of time.

*The views expressed herein are those of the authors and not necessarily those of the Federal Reserve Bank of Minneapolis or the Federal Reserve System.

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1 Introduction

In this chapter, we review the monetary and fiscal history of Argentina from 1960 to 2017, a period that witnessed the highest level of macroeconomic instability in Argentina's history. At that time, the economy was characterized by very disappointing growth performance, particularly during the three intervening decades: per capita income in 2003 was roughly the same as it was in 1973. This growth performance can be seen in figure 1, which plots the logarithm of income per capita along with the logarithm of a trend that grows at 2 percent per year. The vertical lines in this figure, and in the figures that follow, visually divide the period we analyze into three subperiods, which we use to organize the discussion of Argentina's macroeconomic history. We explain this choice of subperiods below. The economy did well until 1973, even compared to a healthy 2 percent trend. But afterward it entered into a three-decades-long stagnation with highly volatile growth rates. Sustained growth then resumed in 1991, stopped by a major depression that started in 1998 and bottomed out in 2002. The recovery from the depression was fast, and several years of high growth followed until 2010, when the economy again stagnated.

Figure 2 plots the yearly inflation rate for the period, in a logarithmic scale, illustrating the magnitude of the hyperinflations.¹ Inflation, chronic for the first decade but moderate, became uncontrollable for a decade and a half and was terminated in 1991, the year in which a currency board was imposed. The following decade was the only one in which the inflation rate was the same as in developed countries, averaging 2.7 percent per year. It then jumped following the traumatic ending of the currency board in 2001 but remained at low levels, similar to the ones of the late 1960s.

Figure 3 depicts the fiscal deficit for the period as a fraction of total output. It includes the deficits of both state-owned enterprises and the provinces. Chronic but relatively low deficits characterize the first decade and a half. Indeed, the average deficit from 1960 to 1973 was 3.2 percent.

Starting in 1973, higher and more volatile deficits accompanied the high inflation period, averaging 6 percent from 1974 to 1990. The year that inflation ended coincides, as the conceptual framework implies, with the year

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¹The late 1990s had two years with small but negative inflation rates. Because of the logarithmic scale, we set the inflation rate to be equal to 1 percent in any year in which it was below that figure.

which a structural break occurred in the behavior of the deficit. While the deficit was almost always above 2 percent from 1960 to 1990 and averaged 4.7 percent in that period, it was almost always below 2 percent from 1991 to 2010 and averaged 0.6 percent. This finding is remarkable, given that starting in 1998, Argentina entered into a recession that transformed into a depression by 2001, with an output drop of almost 20 percent from peak (1998) to bottom (2002). The crisis included a major banking crisis, a default on debt, and, as mentioned above, the traumatic end of the decade-long currency board. The years that followed the crisis were characterized by sustained fiscal surpluses, a feature unseen in Argentina not only during the period we study but also since World War II, which is when credible data became available. But this surplus did not last long: the fiscal deficit gradually worsened, increasing by 2017 to levels that had not been seen since the hyperinflation years. As figure 2 makes clear, though, the impact on inflation has been very moderate, at least until 2017, the final period we study.

A comparison of figures 2 and 3 clearly shows that from the beginning of the sample until 1973, the deficit was moderately low, as was inflation. Healthy growth characterizes this period. In contrast, the very high deficits—high inflation period that started in 1973 and ended in 1991 coincides with the worst experience in terms of output growth, as figure 1 makes clear. After the sudden and very successful end of inflation in 1991, the economy ran for a decade with low inflation rates, a period that coincided with a remarkable convergence of output to the trend. Both the low inflation and the convergence to the trend ended abruptly with the 2001 crisis. The economy very quickly recovered from the crisis by 2003 and, at the same time, managed to keep inflation at very low rates until 2010. This period is accompanied, as figure 3 makes clear, with the lowest deficits for the whole period, averaging -0.4 percent and including six consecutive years with fiscal surpluses. Then, after 2010, inflation started rising again and per capita income stopped growing. Both events coincided with the worsening of the fiscal deficit.

In what follows, we explain in more detail the evolution of the deficit and the way it was financed. In this way, we explain the evolution of government debt during the period, as well as the different policies that were implemented at various points. As we argue, the discussion will help us to understand the roots of all the main macroeconomic events that unfolded in Argentina during the period, including several balance of payments crises, hyperinflations, banking crises, and defaults. All the analysis will follow the conceptual framework described in chapter 2. As the framework makes clear,

the way a given deficit is financed is crucial in understanding the evolution of the economy. But financing debt depends on the ability of the government to borrow, either domestically or in international markets, and this borrowing ability determines the way fiscal and monetary policy interact. Therefore, the government's ability to borrow is the main element we consider when choosing the starting and ending years for each subperiod.

The first subperiod we will analyze starts in 1960 and runs until 1976. During these years, the economy was closed to capital movements. The domestic credit market was heavily regulated and not very developed. Therefore, the government's ability to borrow was rather limited.

The second subperiod is from 1977 to 1990. This period witnessed the first liberalization of domestic financial markets, with a market-determined interest rate and a substantial entry of new financial institutions. At the same time, the capital account was opened, so the credit market was integrated with the world markets. This integration allowed the government to borrow in international markets, which it did. Within a few years, the government's foreign debt increased rapidly. But in 1982, Argentina defaulted on its foreign debt, as did many other countries in the region. A decade of very high inflation followed, ending when the currency board was adopted in 1991.

This is the starting point of the third subperiod, 1991–2001, characterized by a second liberalization of financial and international markets and a successful debt renegotiation process. This process allowed the government to borrow in international markets again. A decade of low inflation and high growth ensued. However, the debt kept growing and new crises developed in 2001, a year that saw the currency board collapse in the midst of a banking crisis and a new default on government debt.

The final subperiod starts in 2002, with Argentina excluded again from international markets because of the default during the previous year.² A debt renegotiation occurred in 2005, when over 75 percent of the bondholders agreed on the offer. A second round took place in 2010, and the proportion of the debt renegotiated went up to 93 percent. The remaining bondholders went to court and were finally paid in 2016. Thus, this period is characterized by the government's inability to borrow abroad. The recovery from the 2001 crisis was fast, leading to high growth rates in per capita income, with higher inflation rates than in the 1990s, but very moderate and stable relative to the Argentinean experience of the second half of the twentieth century.

² The default occurred in the last days of December 2001, a few days before the abandonment of the currency board.

This discussion rationalizes the vertical lines in figures 1 to 3.

The rest of the paper evolves as follows. In section 2 we discuss the evolution of the debt of the Argentinean government, as well as some of its characteristics. Sections 3 to 6 describe in detail the main macroeconomic events of each of the subperiods. In each of those sections, we also discuss how well the events can be understood using the conceptual framework of chapter 2. In section 7 we present the budget constraint decomposition discussed in chapter 2 and in section 8 provide some concluding remarks.

2 The evolution of government debt

The value of government debt in 1996 US dollars is depicted in figure 4. The figure represents total federal government debt, including bonds, banking debt, and debt with other governments and financial institutions. The level of the debt was small and relatively stable during the first subperiod. However, starting in 1975 and until the default of 1982, the yearly average growth rate of the debt was close to 30 percent. Since the default until the end of the decade, the debt remained roughly constant again, its movements essentially explained by two factors: first, by the arrears that resulted from the default; second, by the liabilities that resulted from the balance of payments and banking crisis of 1981, which were gradually accounted as they matured. Starting in the early 1990s, as the government regained access to international capital markets, the debt started to grow again, at the average yearly rate of 10 percent. This persistent increase in debt continued until the 2001 crisis. At that point, the evolution of debt is characterized by a sharp increase from 2002 through 2004 and a drastic reduction in 2005. These fluctuations represent the fiscal cost of the crisis and the subsequent debt renegotiation, where 76 percent of the total defaulted was normalized. By 2011, government debt was at the value it had been prior to the 2001 crisis. Then debt rose again as the fiscal deficit grew. As a fraction of the debt defaulted on in 2001 was still in default until 2016, most of the new debt issued was domestic. After the final agreement in early 2016, the government regained wide access to foreign borrowing, and the increase in the deficit in the last years explains the corresponding sharp increase in total debt.

Figure 5a depicts the debt-to-GDP ratio. Two main developments affect this figure relative to the one before. The first one—GDP growth—is obvious. The second, which is very important for Argentina during the

period, is real exchange rate movements between the peso and the dollar. GDP, as well as peso-denominated debt, are deflated using peso price indices, while the dollar-denominated debt is deflated using the US price indices and the nominal exchange rate between the peso and the dollar. Any movements in the real exchange rate will affect the figure. This is important to take into account because it implies movements in the debt-to-GDP ratio that are associated not with the evolution of the deficit but with relative price changes, and substantial relative price changes took place in Argentina during the period considered here, as we now show.

To decompose the effect of real exchange rate changes in the evolution of debt, figure 5b depicts a counterfactual value of the debt-to-GDP ratio. The simulation is made assuming a value for the real exchange rate that is, for the whole period, equal to the value it had in 1991. This real exchange rate is used to value the fraction of total debt that was denominated in dollars.³ The differences between the two curves are very large, making evident the role of the real exchange rate in explaining changes in the debt-to-GDP ratio.⁴ Thus, while the debt-to-GDP ratio could be low by international standards, a large and sudden real exchange rate appreciation can substantially modify this ratio. As it turns out, large and sudden real appreciations are not uncommon events.

To further understand the previous two figures, in figure 6 we plot the ratio of total debt denominated in pesos to total debt denominated in foreign currency, as well as the ratio of nonindexed debt to indexed debt, starting only in 1975, the first period for which we have data. The share of peso-denominated debt was important (about a third of total debt) during the 1970s and vanished during the high inflation period. It then had a modest increase in the 1990s and only became significant again after the 2001 crisis. Most of the peso-denominated debt issued during the 1990s is nonindexed debt, while in the 2000s the opposite was true. Figures 5 and 6 together show that while the debt-to-GDP ratio was low in normal times, albeit trending up, the exposure of this number to real exchange rate fluctuations was very important. For most of this period, around 90 percent of the debt was dollar denominated, which means that a real

³ We have data on dollar-denominated, indexed, and peso-denominated debt only starting in 1975. To make the adjustment for the first fifteen years, we assumed that the fraction of dollar-denominated debt during those years was similar to the value in 1975, about 70 percent of the total.

⁴ In figure 5c of the appendix, we show the debt-to-GDP ratio together with the real exchange rate, where the comovement is transparent.

exchange rate depreciation would substantially affect that ratio. For instance, to increase the debt-to-GDP ratio from 25 percent to 40 percent, the government should have a deficit (including interest payments) three points higher than the growth rate of output sustained for ten years. A crisis that conveys a 50 percent real depreciation—a modest number given the recent experience—would achieve that change instantaneously.

Another feature of the debt that is relevant for the discussion that follows is its maturity structure, as discussed in chapter 2. Figure 7 depicts the distribution of maturity for selected years: 1978, the year when the increase in foreign borrowing started; 1982, the year of the banking, balance of payments, and debt crises; 1997, the year after the Mexican crisis; and 2000, the year before the latest crisis. It also shows the maturity structure in 2009 and 2017. As shown in the figure, substantial changes have taken place over the years. The stabilization period of the late 1970s inherits a distribution of maturities that are highly biased toward short-term debt. Almost a third of the debt was due within a year, while more than 60 percent was due in the first four years. By 1982, the bias toward short-term debt was even stronger, suggesting that rollover risk may have been a key aspect of the debt crisis. Following the debt restructuring under the Brady plan, less than 10 percent of the debt was due in the following four years. This is a reflection more of the negotiations between the government and the creditors that took into account the government's inability to generate surpluses to pay the debt, rather than a reflection of an explicit policy to manage the maturity of the debt.

However, the debt expansion of the 1990s evident in figure 4—most of it voluntary debt floated by the government in international capital markets—managed to preserve a favorable maturity structure. Thus, by 1997, less than 40 percent of the debt was due in the following four years, and only 8 percent was due in the following year. By 2000 the maturity problem worsened somewhat. The fraction of debt due in the following year increased to 14 percent of GDP. Nevertheless, while substantial, the maturity problem was less significant than it had been prior to the 1982 crisis. By 2009 the structure was similar to that in 2000 and worsened somewhat by 2017: the debt maturing in one year was then slightly above 20 percent of the total stock of debt, which is equivalent to roughly 12 percent of GDP, a relatively large number that needed to be rolled over during the following year.

A final factor that determines the evolution of the debt is the real interest rates faced by the country. Movements on those rates may be explained by changes in the international risk-free rate or in the default risk; this last component may be driven by fundamentals or multiplicity, as explained

in chapter 2. In figure 8, we plot total interest payments over GDP. As the figure shows, in both default episodes, interest payments to GDP reached very high values. In the first case, 1981, it coincides with high real interest rates in the United States. But in the second, 2001, it is less obvious that the international risk-free rate had a spike, suggesting that default risk may have played an important role. While movements in the interest rate can explain the behavior in figure 8, another factor should be considered, one related to the nature of the bonds issued and the accounting practices that were followed. The total interest paid on the accounts corresponded to the interest that actually accrued. Thus, the amount of interest paid depended on coupons paid by the type of bond that was issued. At the time of the debt renegotiation in the early 1990s, some of the bonds were structured to back-load the interest payments, a feature that also explains part of the sharp increase in the figure during the second half of the 1990s.

3 1960–1976

During the first decade and a half of the period we study, Argentina was closed to international capital movements. At the same time, the domestic financial market was heavily regulated. The interest rate was fixed by the government, and credit intermediation was mostly done through government-owned banks. As a result, there was very little room for financing fiscal deficits with debt. In 1960, the ratio of government debt to GDP was a mere 9.8 percent and the deficit 2.3 percent.

The period we discuss in this section starts in the middle of a stabilization plan that had been launched in 1959, the objective of which was to reduce the inflation rate and fix the nominal exchange rate. But as figure 3 makes clear, the required fiscal adjustment did not complement the stabilization efforts and rose from 2 percent in 1960 to around 5 percent by 1962. As a result, and as explained in chapter 2, because of the difficulties of borrowing, part of that deficit was financed by monetary expansion from the central bank. We show this expansion in figure 9, which plots two components of the monetary base: the international reserves and the credit to the domestic market.⁵ The figure shows that, starting in early 1961, the increase in domestic credit is accompanied by a reduction in international reserves, to the point

⁵ Total domestic credit and reserves are in billions of US dollars. To have a scale that facilitates comparison in the figure, we added 1 billion US dollars to the reserves data.

where half of the reserves had been lost by the end of the year. This trend lasted until February 1962, when the fixed exchange rate policy was abandoned and a devaluation of 60 percent followed in the subsequent three months. Figure 9 is yet another example of the mechanics of a balance of payments unraveling due to a money financing of the deficit, as in Krugman (1979), described in chapter 2.

The rest of the decade showed a gradual adjustment of the deficit, followed by a similar gradual adjustment in the inflation rate, which reached a one-digit yearly rate in 1969. Argentineans had to wait more than two decades, to 1993, to live in a one-digit inflation economy again.

Starting in 1970, the deficit started growing again every year, reaching a record high of 11 percent of GDP by 1975. Given the difficulties of borrowing, our conceptual framework implies that inflation should also increase, which is exactly what happened (see figure 2), consistent with the fact that total government debt barely changed during this fifteen-year period. An apparent contradictory feature between figures 2 and 3 is the drop in the inflation rate in 1973 and 1974 in spite of the rampant deficits. These years were characterized by policies of price controls that at times generated shortages of products. These price controls were eliminated in July 1975, and the first outburst of inflation ensued, reaching values between 300 percent and 700 percent annually during several months of 1975 and 1976.

Total public debt dropped substantially between the crisis of 1962 and 1968, in both constant dollars and as a fraction of GDP. We conjecture that part of this reduction can be explained by negative ex post returns on peso-denominated debt, induced either by unexpected inflation or by direct controls in the nominal interest rate. As we mentioned, during the period, the domestic financial sector was heavily regulated, including the imposition of ceilings on nominal interest rates. Note that by 1975, more than 90 percent of the debt was either indexed or in dollars (see figure 4). This result was very likely the outcome of past experiences during which the government inflated away part of its debt.

In summary, this period matches the analysis of chapter 2 remarkably well. The government did not have access to international credit markets, and the domestic market offered limited financing. Thus, the fiscal deficit was driving inflation during this period. As the fiscal deficit went out of control by 1975, so did the inflation rate.

4 1977–1990

The beginning of the period 1977–1990 is marked by a widespread deregulation of the economy. Trade barriers were substantially reduced and the capital account was liberalized, allowing for both private and public borrowing. This allowed the government to finance its deficit abroad at a time of highly liquid international markets. In addition, the domestic credit market was also deregulated. Entry restrictions for private financial institutions were relaxed and the interest rate was left to be market determined. As is customary in many countries, the government decided to provide deposit insurance.

Following these changes, many banks entered the market, and the size of the financial sector as a proportion of GDP increased dramatically. This dramatic increase is reflected in figure 10, where we plot the total liabilities of the financial sector, minus the international reserves of the central bank, divided by GDP.⁶ The measure in figure 10 represents the contingent liabilities held by the government, which are not recorded in the debt measures—as long as a banking crisis does not occur. In this case, where there was deposit insurance, the figure represents explicit contingent liabilities.

A final feature that is relevant to understanding the early years of this period is that the government also adopted a crawling-peg system as a way to stop inflation gradually. The scheme, essentially identical to that adopted by Chile and Uruguay at the same time, involved a sequence of pre-announced and decreasing rates of devaluations of the peso versus the US dollar. This system would gradually reduce the inflation rate, which had been over 700 percent in 1976. With the hope of making the exchange rate mechanisms more credible, the government offered exchange rate insurance in case a devaluation occurred.

The behavior of the deficit in 1977 was consistent with this gradual disinflationary approach since it was brought down from over 8 percent in 1976 to less than 4 percent in 1977. However, as can be seen in figure 3, it immediately started rising again, to above 8 percent in 1981. Because of the crawling-peg system and the fact that the government could access the foreign debt markets in those years (see figure 4), inflation continued to decline until 1981. But as figure 11 shows, starting in 1980, the central bank started financing the deficit by increasing the domestic credit component of the monetary

⁶ This measure is a variation of the so-called Calvo ratio, which expresses M2 as a proportion of central bank reserves.

base, so international reserves started declining, as they did during the 1962 crisis discussed above and as the Krugman (1979) model discussed in chapter 2 implies. The devaluation in 1981 and the consequent burst in inflation were thus unavoidable.

The devaluation triggered the two mechanisms discussed above. First, the exchange rate insurance contracts had to be paid. Second, because of a currency mismatch in the assets and liabilities, the devaluation affected the banking sector. On top of this, very weak regulation of financial institutions, coupled

with deposit insurance, created a systemic moral hazard problem, inducing a high fraction of nonperforming loans on financial institutions' balance sheets. This explosive combination generated a massive banking crisis and a decision to nationalize the debts of the banking sector. The rampant deficits, plus the realization of these contingent liabilities, led to a very high level of debt, high inflation, and the default on government debt in 1982.

The theory that emphasizes maturity is an attractive way to understand this episode. As mentioned above, the government accumulated contingent debt through the exchange rate and deposit insurance mechanisms. The deposits of the financial sector were very short maturity, mostly a few months. The foreign exchange rate guarantee started for debts of over a year and a half but was rapidly extended to short-term liabilities too, so this bailout also included short-term debt. At the same time, the maturity of the existing debt in 1982 had an important bias toward the short term. According to figure 7, more than 40 percent of the debt was due within a year. Thus, the years 1982 and 1983 were years in which substantial amounts of liabilities were due.

The 1982 default forced the government out of the international capital markets until the early 1990s; hence, the fiscal imbalances had to be financed either by domestic credit, which was rather limited, or by seigniorage. The budget constraint discussed in chapter 2 has a direct implication: deficits imply inflation, and that is the dominant characteristic of Argentina during this period. The hyperinflation of 1985 is the result of a declining but still high deficit.⁷ The Austral plan of June 1985 immediately brought down inflation, and a fiscal effort drove the deficit to 3.7 percent and 2.9 percent of GDP in 1985 and 1986. But this effort reversed and the deficit grew to around 5 percent in the following three years. Consequently, a new hyperinflation developed

⁷ The calendar inflation rate in figure 2 for 1984 is higher than in 1985. However, the highest monthly inflation rate was in May 1985. In June of that year, a stabilization plan was launched that substantially lowered inflation from that month to the rest of the year. This makes the calendar inflation rate in 1985 lower than in 1984.

by 1989. This decade is perhaps the most dramatic and clearest example of the forces behind the government budget constraint conceptual framework discussed in chapter 2.⁸

The lack of access to credit markets is reflected in the flat portion of total debt exhibited during the 1980s (see figure 4). In fact, during this period, the only source of financing for the government was through the financial system, by increases in the reserve requirements of commercial banks in the central bank. These reserves were remunerated at the market-determined interest rates. In this way, an important fraction of domestic savings in the form of deposits financed the central government. The central bank was thus effectively acting as the financial arm of the Treasury.

Figure 12 depicts the liabilities of the central bank as a fraction of the total liabilities of the financial sector. This is a key element in understanding some developments of the period 1989 to 1991. The implicit maturity structure of this debt is the maturity structure of the financial system liabilities, mainly deposits. During the period, the most common maturity for deposits was a week, almost never above a month. Thus, the government was indebted with the private sector through the financial system at very low maturities. This form of financing, at very short maturities and very high interest rates, is the genesis for another episode involving rollover risk: the Bonex plan of January 1990.

In order to understand the main forces behind this plan, let us go back to figure 12. By 1989, almost 90 percent of the lending capacity of the banking sector was financing the government. Because of the extreme instability of the time, with highly volatile inflation rates, the most common maturity of deposits was a week. Thus, the liabilities of the central bank represented very short-term maturity debt. On the verge of a stabilization plan, this “maturity overhang” can be understood by using the conceptual framework of chapter 2. The Bonex plan was a swap of maturities. It mandatorily changed the deposits of the private sector by ten-year maturity dollar-denominated bonds. The swap involved both maturities and denominated bonds. As suggested by the model in Calvo (1988), reviewed in chapter 2,

⁸ A comparison of figures 2 and 3 reveals a striking feature. The comovement between inflation and the deficit is clear: the three local maxima in the deficit correspond to the three spikes in inflation. But it is not the case that higher deficits imply higher inflation spikes. Quite the contrary: while the local maxima in the deficit go down over time, the inflation spikes go up over time. For an attempt at explaining this behavior, see Marcet and Nicolini (2003) and Sargent, Williams, and Zha (2009).

this swap may have prevented bad equilibria, in which high interest rates justify a higher probability of default (either explicit or through future inflation) and the higher probability of default justifies those higher interest rates.

The Bonex plan changed the denomination and the maturity of the debt the government had when the currency board was launched the following year. Thus, the plan was in all likelihood an important ingredient in taming high inflation for good in Argentina, at least since 2017, the final year included in our analysis. The deposits were swapped with Bonex, domestically issued dollar-denominated bonds. Several series of Bonex bonds were in circulation at the time, and the government never defaulted on them. The Bonex issued for this plan were fully paid by the government in due time. However, in the week immediately after the plan, the newly issued debt was selling at thirty cents per dollar. Thus, it did imply a substantial wealth redistribution from deposit holders for which their (one-week) term deposits were transactional assets and deposit holders needed to liquidate them because of incoming obligations to deposit holders without those liquidity constraints.

5 1991–2001

The Bonex bonds may have been instrumental in improving the characteristics of the debt by 1990. However, besides the effort to lower the fiscal deficits that averaged 6.5 percent of GDP during the previous three years, by 1990 the deficit was still 4 percent of GDP, inconsistent with low inflation rates, given the lack of access to foreign credit. A new burst of inflation, reaching a monthly rate of almost 100 percent

in March 1990, was a dramatic beginning for a year that ended with an overall inflation rate exceeding 700 percent, and it paved the way for the currency board adopted in April 1991, the starting point of the third subperiod. The currency board established a fixed exchange rate between the US dollar and the newly created peso at a price of 1. It also, by law, changed the mandate of the central bank of Argentina and imposed a 100 percent US dollar backing of the monetary base. In this way, the central bank could only print pesos to buy US dollars, shutting down money financing of the deficit. Its logic was simple: by law, it made the inflation tax term in the budget constraint equal to zero. Thus, the logic was that any remaining deficit ought to be financed by issuing debt.

But the government was in default at the time, so the ability to borrow abroad was severely limited; that was why inflation was unavoidable

during the 1980s, given the high fiscal deficits. Thus, the currency board strategy was to put all eggs in the same basket: only fiscal surpluses would make the currency board viable. And so it was. As can be seen in figure 3, the deficit was practically eliminated in 1991 and 1992, and a surplus was generated in 1993. One factor that explains this behavior is the privatization of state-owned companies in the beginning of the decade, which directly added to available resources.⁹ The government accepted its own bonds as a means of payment in the auctions, so the privatization process was a bond-company swap to some extent.

There is a sense in which the logic of the currency board had a substantial impact. As mentioned, it was designed to force a dramatic reduction in fiscal deficits, and along that dimension, it was successful. As can be seen in figure 3, between 1960 and 1990, the deficit was below 2 percent only from 1966 to 1970. All other years it was above 2.5 percent, and during those thirty-one years, it averaged 4.7 percent of GDP. On the other hand, since 1991 it was above 2 percent (but barely so) in 1996, 1999, and 2001, and more recently in 2011 and 2013, but again, barely so. From 1991 until 2013, it averaged 0.75 percent. It seems apparent that the year of the structural break is 1991.

The fiscal effort is more radical than what the numbers in figure 3 suggest, since in 1993 Argentina reformed the social security system, which transitioned from a pay-as-you-go system to a fully funded one with private accounts. This transition had an important effect on the fiscal deficit, since the obligations to the current pensioners had to be partially absorbed with regular taxes.¹⁰

By 1993, with the economy growing at high rates, the government signed on to the Brady plan, which was intended to restructure the debt in default—mostly bank debt—and transform it, after some debt forgiveness, into sovereign bonds. Following the plan, the government was able to borrow again in international markets, and this explains the expansion of the debt during the 1990s, which is clear in figure 4. The natural reading of this event, using the budget constraint, is that the Brady plan allowed the government to run the deficits from 1994 onward. Note, on the other hand, that the debt-to-GDP ratio remained stable during the period (see figure 5b).

Two factors explain this feature: the high average growth rates of GDP during the period and

⁹ The income from privatizations added an extra 0.7 percent of GDP a year from 1991 to 1993 on average.

¹⁰ In 2008, the reform ended, and Argentina reverted to the old pay-as-you-go system.

the strong appreciation of the peso.

In early 1995, a severe bank run began, during which total deposits of the banking sector fell by almost 20 percent in five months. The same year, output dropped by 4 percent. The 1995 banking crisis was particularly difficult since the currency board implied that the central bank was severely limited to acting as a lender of last resort. Had the banking crisis been much more severe, it would have forced the government to increase financing because of the existing contingent liabilities. Figure 10 shows that total exposure was around 9 percent of GDP. In the same period, the ratio of total debt to GDP was around 25 percent. It is unclear that the government could have borrowed abroad to face additional liabilities equivalent to the total exposure. But it did not need to: by mid-1995, the run on deposits was over. As we will see, this problem was substantially more severe in 2001.

Starting in 1994, deficits were positive, so debt started rising. However, it doubled in about ten years, and the size of the reported deficits did not seem to justify such a large increase. As we show below, part of the increase in debt can be explained by liabilities coming from previous years but were not in the books and were recognized in these years. By 1998, the country faced a sudden reversal of its current account, following the financial crisis of Southeast Asia in 1997 and the Russian default of 1998. A recession started in 1998 that ended a strong recovery with GDP growth rates that had been around 6 percent a year. This effect interacted with a feature that responded to the Brady negotiations of half a decade earlier. At the time, the debt payments, in terms of both capital and interest, had been back-loaded, and an important fraction of the debt was maturing starting in 2001, a year in which interest payments alone were above 4 percent of GDP. The apparent difficulties in dealing with the payments on the foreign debt, together with the prolonged recession, started weakening the credibility of the currency board. As the financial system was highly dollarized, this raised doubts regarding the soundness of the banks, and a run on deposits started in early 2001. By then, as figure 10 shows, the total exposure of bank liabilities was over 16 percent of GDP. Thus, while the currency board implied that the central bank could back 100 percent of the monetary base, it could certainly not act as a lender of last resort unless it could obtain foreign borrowing in those amounts. The deposit run lasted almost the whole year, mostly owing to the heavy capital requirement and liquidity provisions imposed by the central bank. But by November 2001, over 27 percent of the deposits had left the banking system. The impossibility of some banks to respond to its depositors led to

a deposit freeze by the end of November. The freeze lasted only a few weeks, however, and the crisis, which implied the fall of the acting administration, ended in default on foreign debt and the abandonment of the currency board by January 2002, in the midst of the worst depression Argentina had experienced in decades.

During the decade we are considering, the values for inflation, the deficit, and the debt-to-GDP ratio for Argentina all satisfied the values required in the Maastricht Treaty that established conditions for entry in the Eurozone. During the few years following the treaty, none of the European countries that signed the treaty satisfied those conditions. In spite of this, the country risk that the Argentinean government faced on the bonds it issued was on average around 6 percent a year. This country risk implied (assuming one-period debt, just to simplify) an extra payment during the decade of more than 15 percent of GDP. A counterfactual in which Argentina faced zero country risk, where those funds were used to cancel debt, would have left a debt-to-GDP ratio in 2000 equal to 25 percent instead of the 40 percent it had. Would Argentina have defaulted with that debt-to-GDP ratio? The models with multiple equilibria discussed above suggest that this may have been a critical factor during the 1990s.¹¹

6 2002–2017

The bottom of the recession was the first quarter of 2002, after a drop in GDP since 1998 of close to 20 percent. Unemployment reached unprecedented levels, and poverty rates rose above 40 percent. The crisis was very expensive in terms of its effect on public debt, as the jump in 2002 in figures 4 and 5 shows. Three factors are important in explaining this jump. The first was a bailout to the banking sector that was bankrupt because of an asymmetric conversion

of bank assets and liabilities to pesos. Indeed, while the dollar-denominated deposits were transformed to pesos at a 1.4 exchange rate, the dollar-denominated loans were transformed to pesos at the value of 1.0. The second factor is that by 2002, several provincial governments had debts that were absorbed by the federal government. The third was the launching of ad hoc social programs designed to cope with the impact of the crisis on the poorest share of the population. The 2005 debt renegotiation explains the large drop in debt in that year. The offer made in 2005 was accepted by creditors and amounted

¹¹ For a theory along this direction, see Ayres et al. (2015).

to almost three-quarters of the total owed. A second round of debt renegotiation in 2010 took that figure to 93 percent. The remaining 7 percent won the right in court to be paid in full, and a final agreement with creditors was reached in 2016. It is worth mentioning, though, that even after the debt forgiveness of 2005, total debt in 1996 dollars (figure 4) and the debt-to-GDP ratio (figure 5a) were higher in 2006 than the value of 2001, just before the default.

The recovery from the great recession of 1998–2002 was very fast and was accompanied by six consecutive years of fiscal surpluses—a completely unprecedented event in Argentina. Those surpluses implied that the natural exclusion from credit markets that followed the default did not have any consequences on the inflation rate: there was no need to raise seigniorage. As a result of those surpluses, inflation remained mostly at one digit from 2003 until 2007, and the dollar value of the debt in 2010 was very similar to what it was in 2006, the year following the first and larger step in the long debt renegotiation process.

Things changed between 2008 and 2010. The healthy surpluses started to disappear and became a 2 percent fiscal deficit by 2013. It then continued to increase and reached a worrying value of close to 6 percent by 2017. Given the lack of access to foreign borrowing that lasted until 2016, the deficits had to be financed by seigniorage, and inflation rose again, to an average close to 25 percent a year, remaining around that value until the end of the sample. Not all the deficit was financed by the central bank during the period: domestic debt instruments were issued, explaining the upward trend of debt since 2010. Finally, the agreement with all bondholders by 2016 allowed the government to again borrow abroad, which explains why the large deficits of 2016 and 2017 did not put pressure on seigniorage but rather were financed by foreign debt, as figure 4 makes clear.

7 Budget constraint decomposition

In this section, we present the decomposition of the budget constraint discussed in chapter 2, which is the basis for our summary and conclusions in this section. Table 1 presents each of the main components for the four subperiods studied. The top two rows are the sources of financing: change in debt and seigniorage.

The bottom two rows are the needs of financing, that is, the primary deficit and the interest payments.

As discussed in chapter 2, we have used independent measures of all the components of the budget constraint. Thus, the numbers will not necessarily match in any particular period. We mentioned above several reasons why this may be the case. For example, the payments made for deposit insurance and exchange rate insurance in the early 1980s were contingent liabilities that became explicit liabilities. At the same time, the resolution of the banking crisis in 2002, where dollar-denominated assets and liabilities of the banking sector were transformed to pesos at different rates, involved the issuance of bonds to recapitalize the banks.

In order to make progress in quantifying these “off-the-books” measures, we then use the government budget constraint to compute a transfer, as explained in chapter 2. This transfer measures the excess spending in that period if it turns out to be positive. And it measures unrecorded taxes or confiscations when it is negative. The average value of this transfer for each of the subperiods is depicted in the bottom row of table 1.¹²

The first subperiod is characterized by sizable primary deficits of 3.6 percent and small interest payments. The deficits are explained, as we mentioned above, by the lack of access to credit markets, which is reflected in the slow average increase in debt during the period. Two-thirds of the financing was done through seigniorage, which explains why inflation was high during the period. Finally, this is the only subperiod in which the transfer is negative—probably explained by the fact that many of the local debt instruments were denominated in pesos, so increases in inflation diluted the real value, which is equivalent to a confiscation of private sector assets.

The second subperiod is also characterized by high primary deficits—though a bit lower than the previous decade and a half—but substantially larger interest payments. This reflects the large increase in government debt (see the top row of table 1) during the early years of this period. Seigniorage was substantially higher than the period before, which also explains the higher inflation rates in this subperiod. Notice, however, that overall, inflation allowed the government to collect an additional 1.6 percent of GDP, compared with the previous fifteen years. The price paid during times of higher inflation seems to be excessively high, as figure 2 makes clear.

The radical change in the behavior of the primary deficit starting in 1991 can also be seen in table 1. Seigniorage became negligible in the 1990s

¹² In the online appendix, we present the time series of all the rows in table 1.

because of the currency board. Most increases in the debt corresponded to the interest payments and, to a lesser extent, to positive transfers. Most of these transfers arose in the years immediately after the inflation rate was stabilized and can be explained by a series of bonds issued to pay unrecorded debts, mostly with pension holders, that had been taken to court.

The final period is characterized by the resurgence of seigniorage, similar to the one of the first subperiod, which compensates with interest payments. The primary deficit is negative on average, but, as we mention in the text, worsens during the last years. The very large value of the transfers can be explained mostly by the large increase in debt during the 2002 crisis, as can be seen in figure 4. The off-budget expenses of those years were so large that they more than compensated for the write-off obtained in the first step of the debt renegotiation process in 2005, which can also be seen in figure 4.

An alternative way to evaluate the overall impact, throughout the period, of these off-budget expenses is to simulate what total debt would have been in each year if these transfers had been zero every year.¹³ The result can be seen in figure 13, where we plot the result of the simulated debt-to-GDP ratio, together with the observed value. As expected, during the first subperiod, the simulated debt is higher than the observed one. These changes started in the early 1980s, where the difference was likely the result of the deposit and exchange rate insurance that had to be paid in 1982. The difference then becomes larger in the early 1990s, related to the issuance of bonds to pay for unrecorded debts, as mentioned above. Then, it becomes very large during the crisis, moderating the year of the debt renegotiation, but increasing again after that year. Our interpretation of the difference between the true values for the debt and the simulated one is, precisely, those off-the-book expenses created by the contingent liabilities.

Overall, the picture describes a dramatic fact. By the end of 2017, the debt-to-GDP ratio of Argentina was somewhat above 50 percent. This calculation shows that if it had been just for the recorded deficits, it should have been just 20 percent. Thus, more than 60 percent of the total debt can be explained by “accidents,” rather than conscious and agreed-upon decisions to change government spending.

¹³ The details of this computation are explained in chapter 2.

8 Conclusions

Our analysis strongly supports the view that from 1960 to 1990, a systematic imbalance between government revenues and outlays explains the chronic and high inflation rates that Argentina experienced during those three decades, which were extremely disappointing: per capita income in 1990 was essentially the same as in 1960 (see figure 1). It also explains why, starting in that year and until 2001, Argentina used over 2 percent of its output, on average, to service its debt, since its primary deficit was zero on average. The increase in the debt incurred to pay that interest explains most of the debt increase during the 1990s that led to the 2001 debt crisis. The debt crisis was very expensive fiscally, and the government ended with an even higher level of debt, even taking into account the haircut agreed upon in 2005, in the first step of the debt renegotiation process. That debt burden remains today, and it has been aggravated by a substantial deterioration of the primary deficit, with values that resemble the ones that prevailed during the times of high inflation and bad economic performance.

The last half-century of Argentina's macroeconomic history is infamously rich in terms of extraordinary events. They all seem symptoms of the same disease: the inability to restrict spending to genuine tax revenues.

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Figure 1

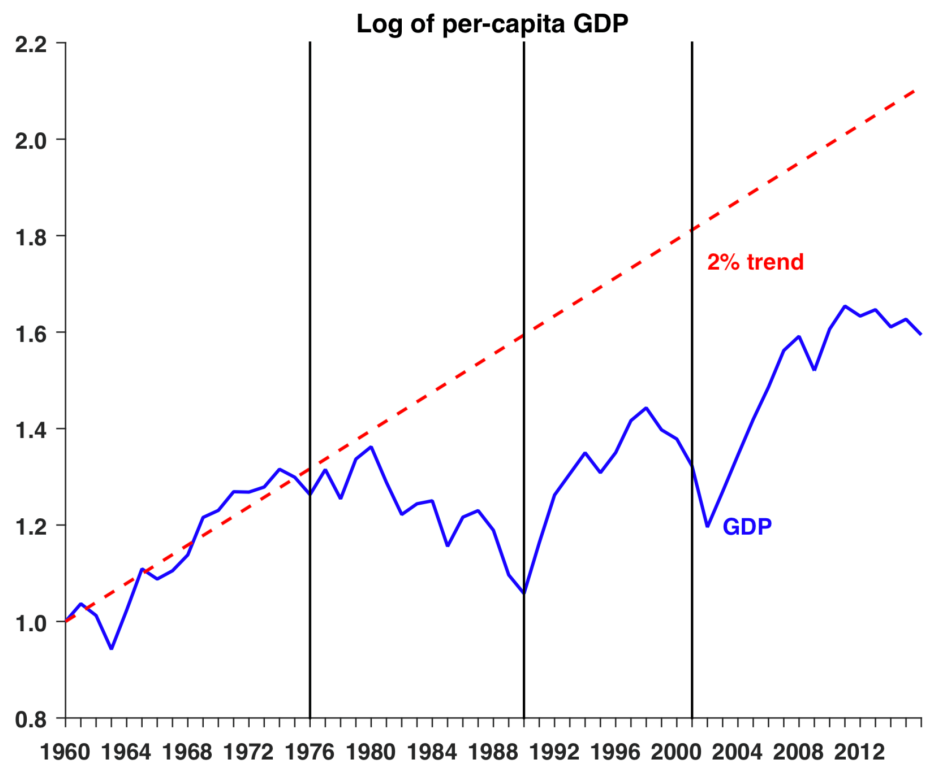


Figure 2

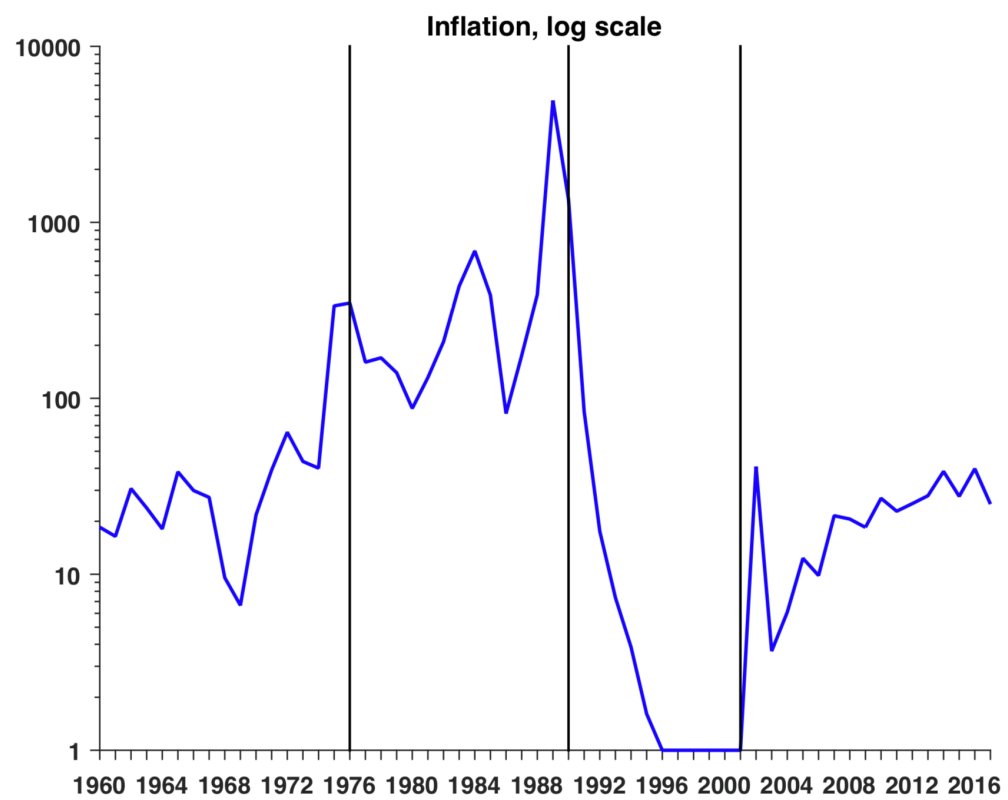


Figure 3



Figure 4

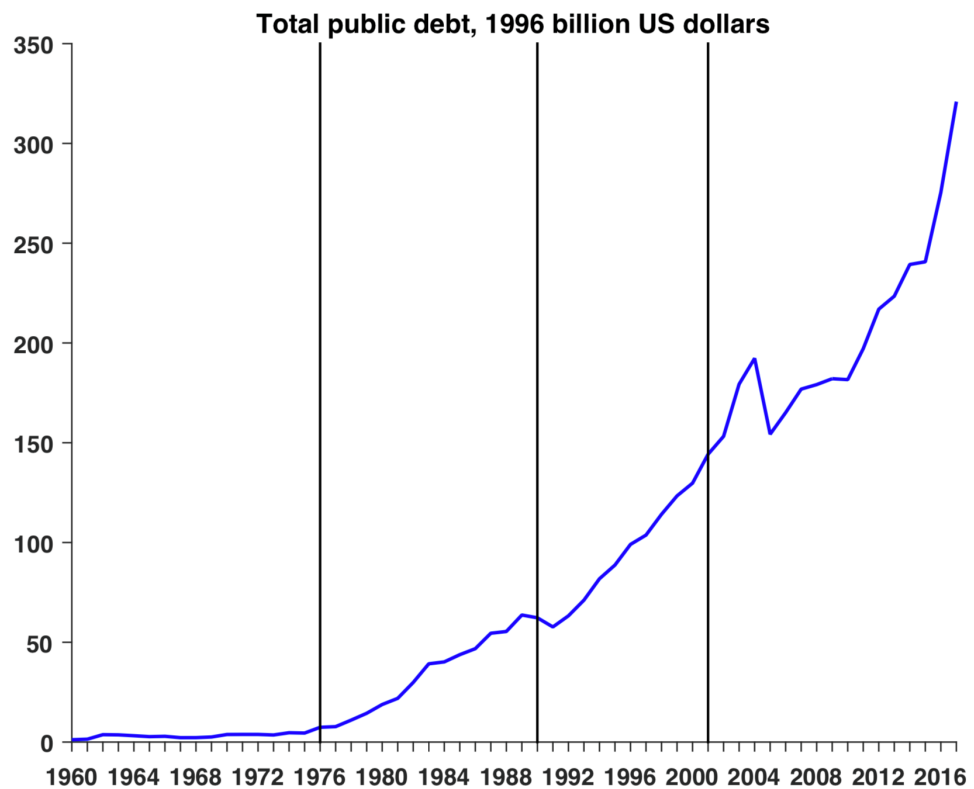


Figure 5a

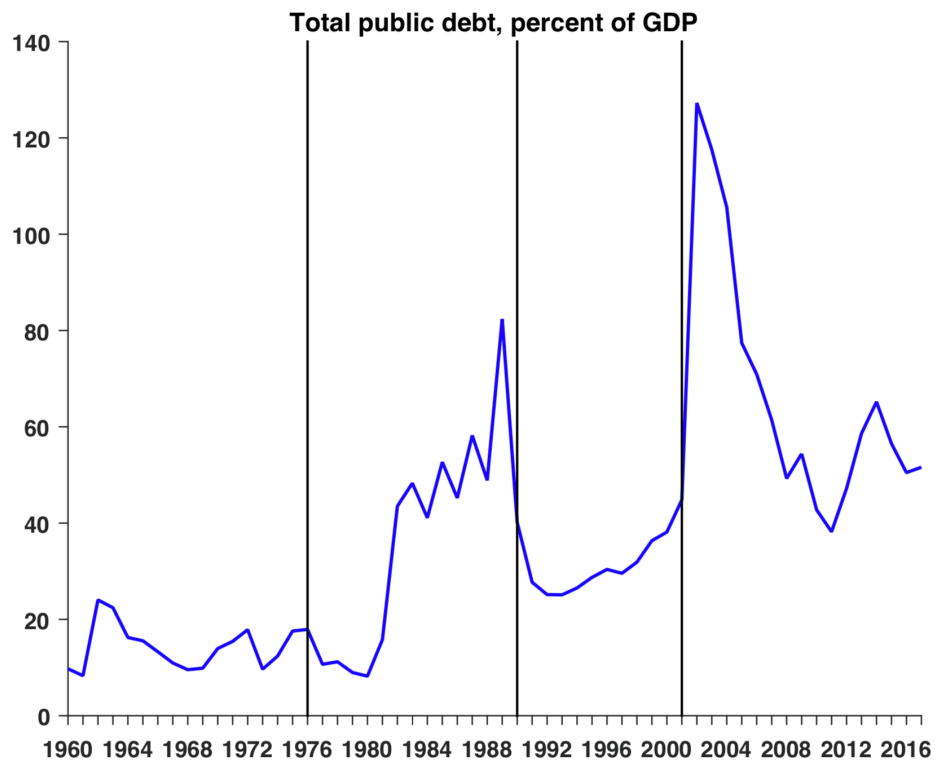


Figure 5b

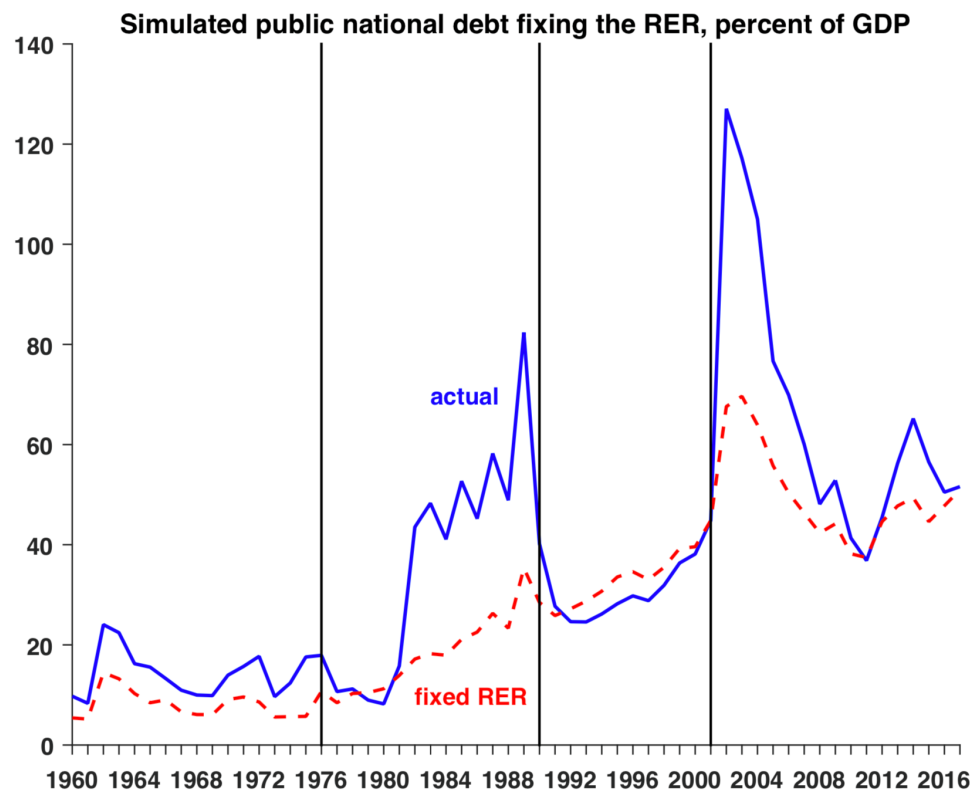


Figure 6

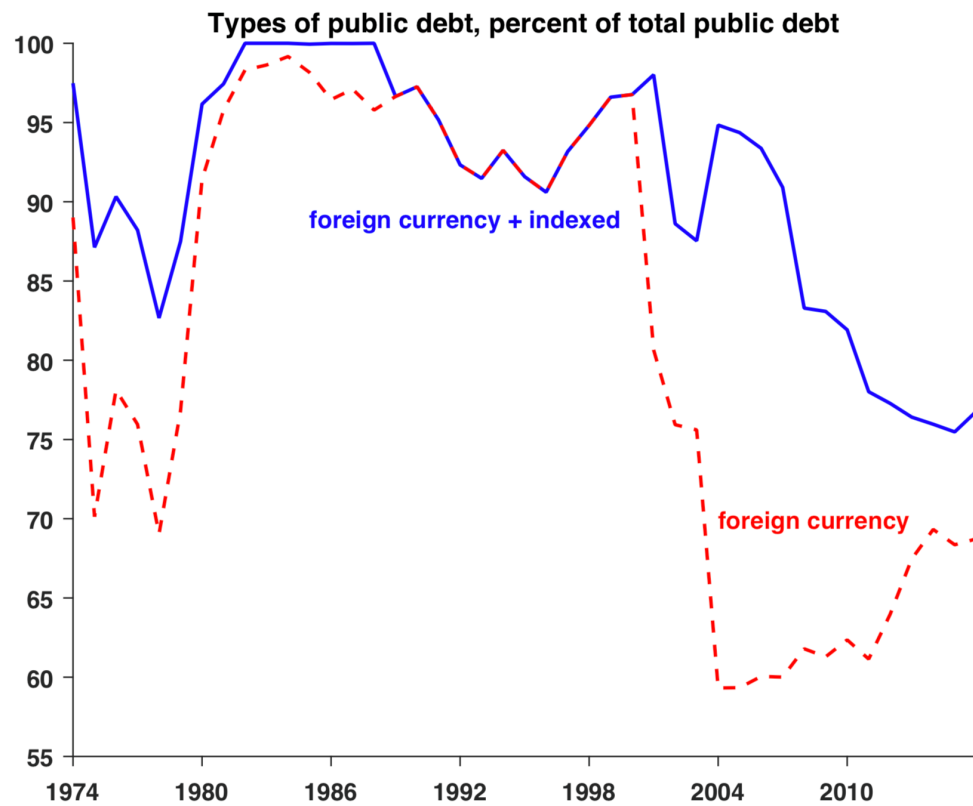


Figure 7

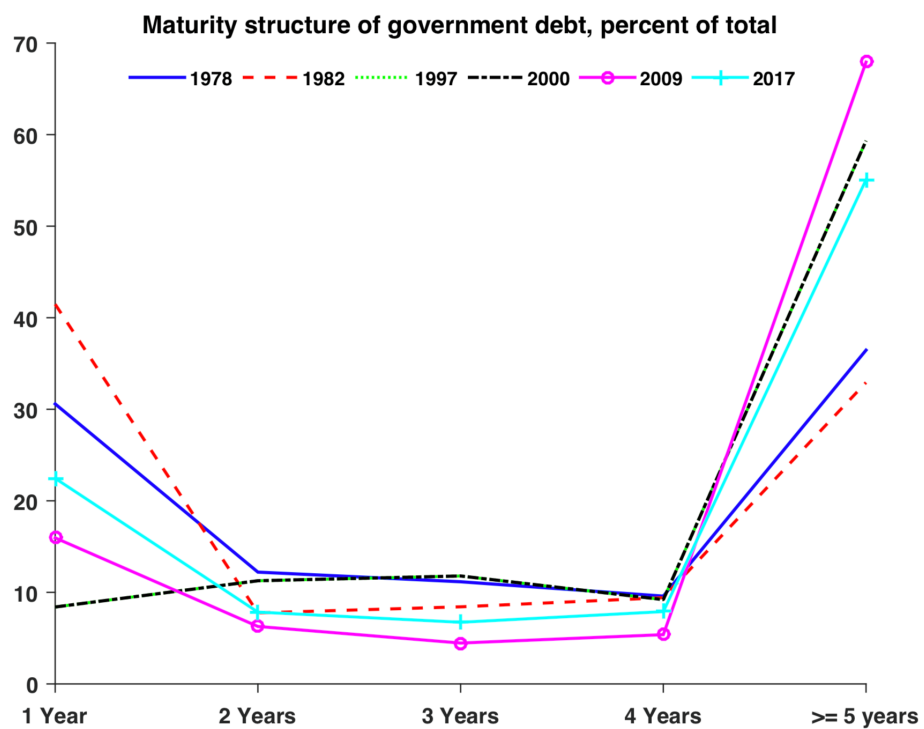


Figure 8

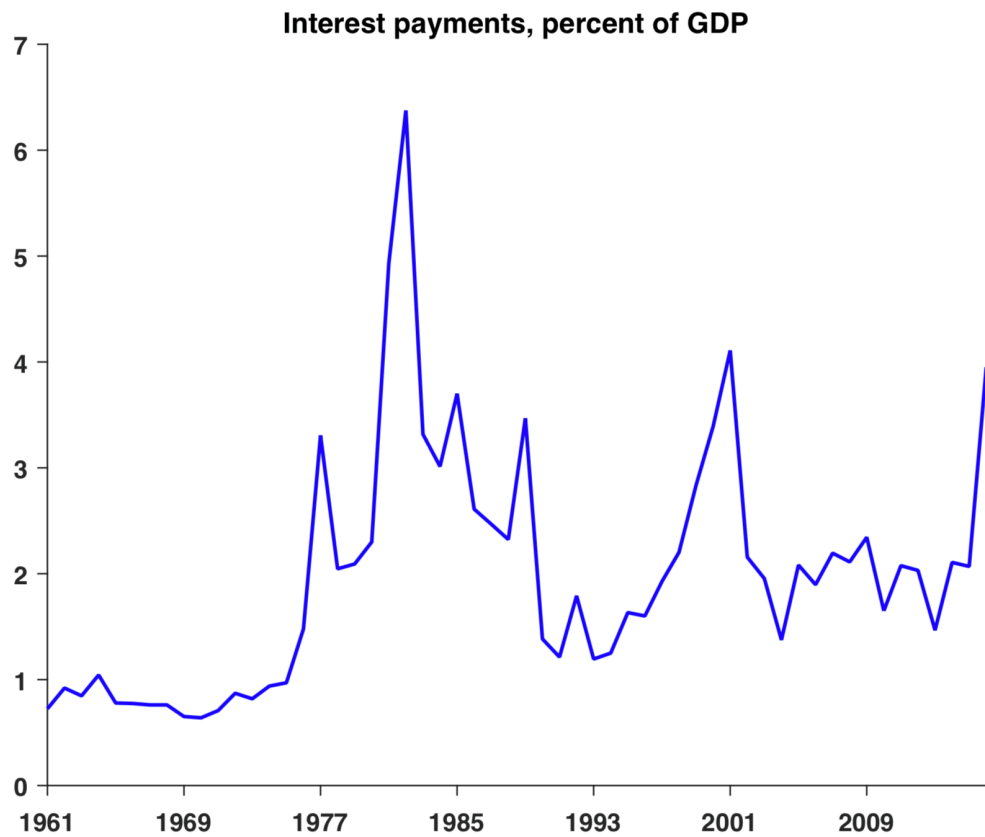


Figure 9

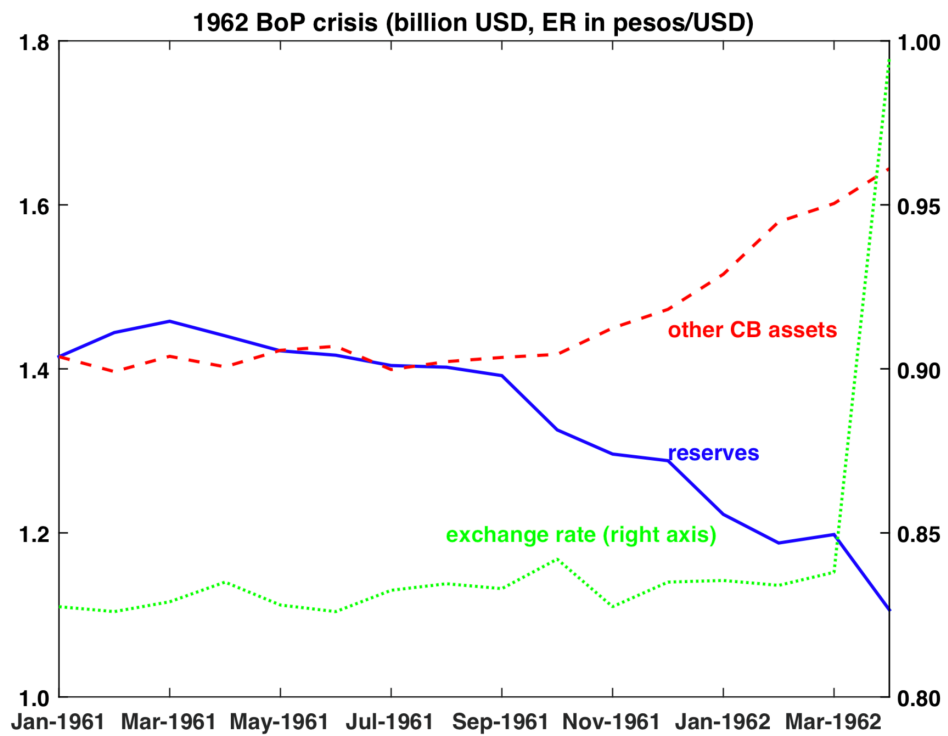


Figure 10

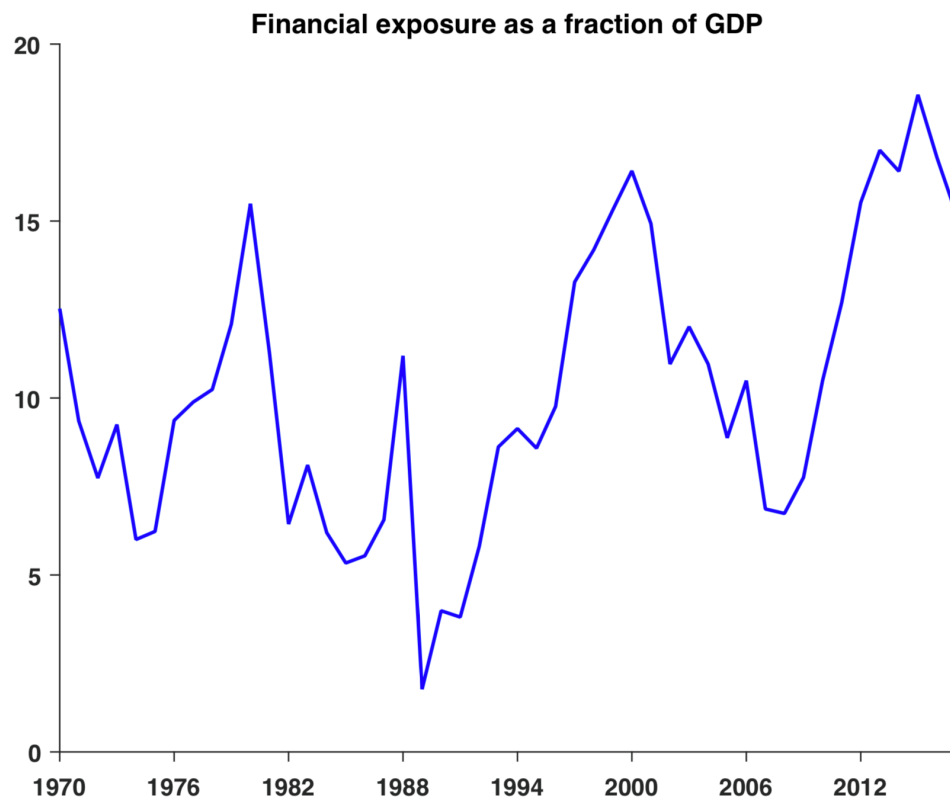


Figure 11

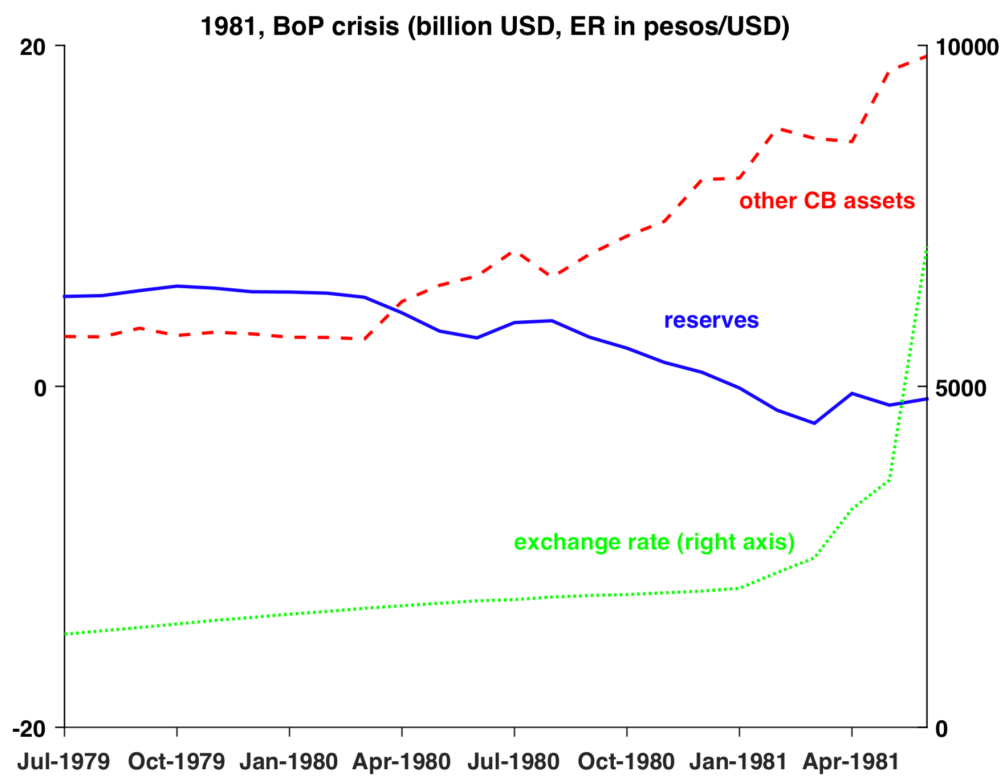


Figure 12

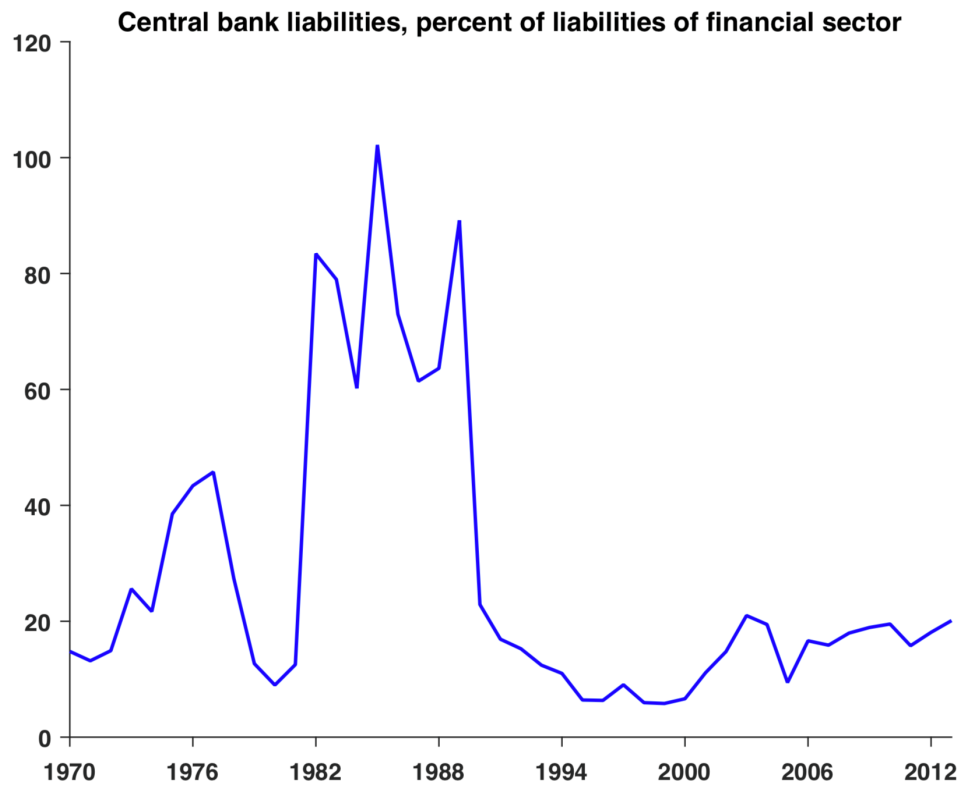


Figure 13

