Monetary and Fiscal History of Latin-America, 1960-2014

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Latin-America 1935-1971

GDP per-capita relative to US, 1935-1971

Argentina  Brasil  Chile  Colombia  México  Perú  Uruguay  Promedio
Latin-America 1971-2001

GDP per-capita relative to US, 1971-2001

[Graph showing GDP per-capita relative to US from 1971 to 2001 for various countries including Argentina, Brasil, Chile, Colombia, Mexico, Peru, Uruguay, and the Promedio.]
\( (G_t - T_t) + B_t r_t = (B_{t+1} - B_t) + (M_{t+1} - M_t) \)

- \( (G_t - T_t) \) is the deficit of the government in period \( t \).
- \( B_t r_t \) is the amount of interest that must be paid in \( t \).
- \( (B_{t+1} - B_t) \) is the increase in the debt.
- \( (M_{t+1} - M_t) \) is the revenue from printing money.
• A money demand

\[
\frac{M_t}{y_t P_t} = \gamma - \delta (r_t + \frac{P_{t+1}^e}{P_t})
\]

• Thus, the price level is a weighted sum of

\[
\{M_{t+s}, r_{t+s}\}_{s=0}^{\infty}
\]

• These two equations solve for money and prices, given fiscal policies.
Figure 1: Log of per-capita GDP (1960-2016)
Figure 2: Inflation Rate (1961-2017)

Logarithmic scale
Figure 3: Deficit as % of GDP (1960-2017)
Figure 4: Total Public Debt in 1996 US Dollars (1960-2017)
Figure 5a: Total Public Debt as % GDP (1960-2017)
Figure 5.b: Simulated Public National Debt Fixing the Real Exchange Rate as % of GDP (1973-2017)
Periods

1. 1960 a 1976
2. 1977 a 1990
3. 1991 a 2011
4. 2002 a 2013
Figure 2
Deficit and Inflation Rate for Argentina
FIGURE 4
Ratio Nominal Non Indexed Debt/Indexed Debt
Ratio of Peso Denominated Debt/Debt
The 1960-1976 period

- Restrictions to capital account.
- Limited local debt markets.
- The connection between the deficit and inflation ought to be close.
- The largest fiscal deficit was in 1962, the year in which inflation was also the highest.
- The year 1962 is also the one in which government debt increases substantially, experiencing a gradual decline during the rest of the decade.
FIGURE 2 (60´-76´)
Deficit and Inflation Rate for Argentina
• Starting in 1975, the fiscal deficit starts escalating from less than 2% of GDP in 1970 to more than 12% in 1975.
• As a consequence, inflation also escalates to the first hyperinflation of Argentina's history.
• Total public debt went down substantially between the crisis of 1962 and 1968.
• We conjecture that part of this reduction is explained by negative ex-post returns on peso denominated debt
• By 1975, more than 90% of the debt was either indexed or in dollars
• In summary, this period matches the analysis of Sargent reasonably well.
The 1977-1990 period

- Deregulation of the economy.
- Two policy changes are key to understand the evolution of the debt.
- The first was the deregulation of the financial sector.
- Deposit insurance.
- The liabilities of the financial sector, as a fraction of GDP, increased dramatically.
- The second is the exchange rate guarantee offered with the stabilization plan.
- By the early 80's, a generalized banking crisis forced the government to back an important portion of deposits. At the same time a balance of payment crisis developed.
• The two contingencies occurred at the same time. Between 1981 and 1983, the total debt went from less than 40 billion dollars, to more than 60.
• The debt crisis develops and the debt of the government grows at a much lower rate. In fact, the debt in 1991 is slightly above the number in 1983.
• Sargent applies to the debt crisis period: The rest of the decade witnessed two new hyperinflations and several balance of payment crisis (though it has problems quantitatively)
FIGURE 2 (77´-90´)
Deficit and Inflation Rate for Argentina
• The theory that emphasizes maturity is very attractive to understand two episodes in the period under study.
• The deposits of the financial sector where very short maturity, mostly a month.
• The foreign exchange rate guarantee included short term liabilities, so a share of this bail-out was short term too.
• At the same time, the maturity of the existing debt in 1982 had an important bias towards short term. According to Figure 5, more than 40% of the debt was due within a year.
• Rollover crisis occur with atomistic lenders, this does not seem to be the case since this was bank debt?
• An interesting feature of this period, is that the government issued domestic bonds denominated in U$ dollars (BONEX) and never defaulted in those bonds.

• Two developments are important regarding the evolution of government debt. The Bonex plan in January 1990, that swapped short-run bank deposits for long term bonds, and the Brady plan in 1993, an agreement with creditors to end the default period.

• During the 80's, an important source of financing of the central government was carried out through the financial system.

• 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.
• This form of financing, at very short maturities and very high interest rates, is the genesis for the second episode involving roll over risk: the Bonex plan of January 1990. In this case, depositors are atomistic.
• By 1989, almost 90% of the lending capacity of the banking sector was financing the government.
• The Bonex plan was a swap of maturities. It mandatory changed the deposits of the private sector by ten year maturity dollar denominated bonds.
• The swap involved both maturities and denomination. This may have avoided bad equilibria. Calvo (1989).
• The fiscal deficit in 1990 was still 2.5%, inconsistent with low inflation rates.
• A new burst of inflation occurred by the end of the year, paving the way for the currency board in April 1991.
The 1991-2001 period

• The logic of the currency board was simple: by law, it made the inflation tax term in the budget constraint equal to zero.
• The government was in default at the time, so the ability to borrow abroad was severely limited.
• Only fiscal surpluses would make the currency board viable.
• And so it was: 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.
• The logic of the currency board had a substantial impact. Structural break.
• By 1993, the government signed in to the Brady to restructure the debt in default.
• The Brady plan allowed the government to run the deficits from 1994 onward.
• In early 1994, a severe bank run developed in which total deposits of the banking sector fell by 20% in four months.
• Had the banking crisis been much more severe, it would have forced to government to increase financing, due to the contingent liabilities.
• Total exposure was around 9% of GDP, while total debt was around 25% of GDP.
• It is unclear that the government could have borrow abroad to face additional liabilities equivalent to the total exposure. This problem was substantially more severe in 2001.
Figure 6.c
Financial Exposure as a Fraction of GDP, 1970-2013
During the decade, 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 Euro.

In spite of this, the country risk that the Argentinean government faced on the bonds it issued, was on average around 6% a year.

A counterfactual in which Argentina faced zero country risk would leave a debt to GDP ratio in 2000 equal to 25%, instead of the 40%

Would Argentina had defaulted with that debt to GDP ratio?

By 1998, a recession started and by the end of 2001, interest payments were above 4% of GDP.
FIGURE 2 (91´-01´)
Deficit and Inflation Rate for Argentina
The 2002-2013 period

• The crisis was very expensive in terms of its effect on public debt as it jumps up in 2002.
• Bail out to the banking sector plus provincial government debts absorbed by the federal government.
• The debt renegotiation of 2005 explains the large drop in debt in that year.
• Even after the debt forgiveness of 2005, total debt in 1996 dollars and the debt to GDP ratio 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.
• There was no need to raise seiniorage. As a result of those surpluses, the dollar value of the debt in 2010 was very similar than what it was in 2006.
• Things changed in 2009.
• The healthy surplus started to trend down and became a 2% fiscal deficit by 2013.
• This, together with the lack of access to international credit markets explains the increase in inflation since that year, relative to the one experienced from 2002 to 2009.
• Not all the deficit was financed by the Central Bank: domestic debt instruments were issued, explaining the upward trend of debt since 2009.
FIGURE 2 (02´-13´)
Deficit and Inflation Rate for Argentina
Figure 8
Simulated vs. Actual Debt as a Fraction of GDP