The Fiscal and Monetary History of Latin America
The case of Uruguay (1960-2017)

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Main questions of the paper

Does the evidence from the case of Uruguay in 1960-2017:

a. allow to accept there is a relationship between fiscal deficit and nominal instability? **Yes.**

b. support a relationship between nominal instability and macroeconomic performance? **Don’t know (yet).**

Is the budget-constraint framework helpful to describe and interpret the main facts of the fiscal and monetary history of Uruguay in the last half century? **Yes.**
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1. Overview

2. The budget constraint: framework, data and results

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   i. 1960 - 1973: Stagflation
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4. Conclusions and lessons
Very high fiscal deficits until the 1990s

Overall Deficit of the Public Sector as % of GDP
Source: Banda & Onandi (1992); Borchardt et al. (2000); Licandro & Vicente (2008); MEF
High nominal instability until the end of the 1990s

CPI inflation
Source: INE
High indebtedness since the 1970s and two public-debt crises.

Gross Public Debt by Currency (% GDP)
Source: Azar et al. (2009); Central Bank of Uruguay

Nominal pesos  Wage-indexed units  Inflation-indexed units  Foreign currency

High indebtedness since the 1970s and two public-debt crises.
1960-2017: growth below 2% annual growth

Log of per capita real GDP (1960 = 1)
Source: Bonino et al. (2012); Central Bank of Uruguay

- per-capita real GDP
- 2% annual growth

Stagflation
BOP, banking, and debt crisis
Banking and debt crisis
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1960-2017: three periods

Stagflation

1960

1963

1966

1969

1972

1975

1978

1981

1984

1987

1990

1993

1996

1999

2002

2005

2008

2011

2014

2017

Opening and financial liberalization

1982

BOP, banking and debt crisis

Boost, halt and the golden years

2002

Banking and debt crisis

1965 Banking crisis
Main obligations

In the mid 1980s, there is a break in the trend of the primary deficit.

Real interest payments were significant restrictions around the 1982 and 2002 crisis.
**Main sources**

**Inflation tax** was the main source throughout the entire period.

**Public debt** strongly grew in 1982 and 2002 because of devaluations greater than 100%.
## The budget-constraint analysis: results by period

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<tbody>
<tr>
<td><strong>Sources</strong></td>
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<tr>
<td>Local-currency public debt (Δ)</td>
<td>-1.1%</td>
<td>0.4%</td>
<td>0.2%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Foreign-currency public debt (Δ)</td>
<td>0.9%</td>
<td>4.4%</td>
<td>-0.8%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Inflation-indexed public debt (Δ)</td>
<td>-</td>
<td>-</td>
<td>0.8%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Wage-indexed public debt (Δ)</td>
<td>0.1%</td>
<td>-0.1%</td>
<td>0.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Monetary base (Δ)</td>
<td>-0.2%</td>
<td>-0.4%</td>
<td>0.0%</td>
<td>-0.2%</td>
</tr>
<tr>
<td>Inflation tax</td>
<td>4.7%</td>
<td>3.6%</td>
<td>0.8%</td>
<td>2.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4.4%</td>
<td>8.0%</td>
<td>1.0%</td>
<td>3.9%</td>
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<tr>
<td><strong>Obligations</strong></td>
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<tr>
<td>Public-sector primary deficit</td>
<td>5.9%</td>
<td>1.8%</td>
<td>-1.1%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Local-currency return</td>
<td>-</td>
<td>-</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Foreign-currency return</td>
<td>-0.1%</td>
<td>2.8%</td>
<td>0.9%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Inflation-indexed return</td>
<td>-</td>
<td>-</td>
<td>-0.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Transfers*</td>
<td>-1.4%</td>
<td>3.5%</td>
<td>1.3%</td>
<td>1.3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4.4%</td>
<td>8.0%</td>
<td>1.0%</td>
<td>3.9%</td>
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*Estimated as a residual

Source: own elaboration following Kehoe, Nicolini & Sargent (2013)
Residual: original and adjusted

How do we attempt to explain the residual?

We substracted from the original residual the change in international reserves and extraordinary transfers from the Central Bank to state-owned banks during the 1982 and 2002 crises.

Adjusted residual decreases but remains relatively large around the crises. Why? …

Residual by sub-period

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<tr>
<td>Original residual</td>
<td>-1.4%</td>
<td>3.5%</td>
<td>1.3%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Adjusted residual</td>
<td>-0.3%</td>
<td>2.7%</td>
<td>-0.2%</td>
<td>0.6%</td>
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**Adjusted residual: explanations**

1960s: There is no data on peso interest rates, so debt obligations in pesos are missing in the budget constraint. Real interest rates were negative which is a source for the public sector. That is, residual may contain transfers from debt holders as a result of inflating away public debt in pesos.

Around 1982 and 2002: significant transfers from the Central Bank are missing in the data.

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* Adjusted residual is defined as the budget-constraint residual minus the explanatory factors.
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4. Conclusions and lessons
Inflation tax was the main financing source

Public debt was not a financing source: real interest rates in pesos were negative (set by law below CPI inflation) and so they were unattractive for the private sector and no longer sustainable for the pension system.
The 1965 banking crisis and inflation

1960s (first half): relationship between inflation and the banking system’s instability (Vaz, 1999):

1. Monetary base grew to provide liquidity to banks.

2. Explicit insurance on peso-denominated deposits and implicit one on dollar-denominated deposits. Given the low level of international reserves and the restrictions to issue local and external debt, the monetary authority had to monetize the deposits.

3. Banks’ weak position impeded to restrict secondary money creation (by increasing reserve requirements or eliminating the inflation-tax subsidy through “redescuentos”).

4. Banking crisis reinforced the dollarization. Higher inflation was needed to offset the effect of lower monetary base on the inflation tax.
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4. Conclusions and lessons
1974-1990: three stages

   • Stabilize the external sector, open the economy through integration with Argentina and Brazil, promote exports and financial liberalization (end of the legal tender of the peso).
   • Sustained deficits were financed mostly with inflation tax.

   • Pre-announced crawling peg.
   • Fiscal deficit decreased and so did CPI inflation. Inflation tax was used to increase foreign reserves.

   • End of the stabilization plan.
   • BOP and banking crisis.
   • In 1985 the democratic government inherited high fiscal deficit, large public debt, high inflation and several bankrupt private banks.
Real appreciation during the stabilization plan

Real Exchange Rate with the U.S. (Index 100 = average 1913-2014)
Source: own elaboration based on the National Institute of Statistics, Instituto de Economía - Universidad de la República and Federal Reserve Economic Data.
Insufficient fiscal contraction: twin deficits

Insufficient fiscal contraction to offset the effects of the RER appreciation encouraged an increase in the current-account deficit.
Once external financing became more restrictive, the deepening of the current-account balance led to a loss of Central-Bank foreign reserves.
BOP crisis

- Fiscal deficit was financed through net domestic credit. Under an exchange-rate stabilization plan, it became a major loss in foreign reserves.
- A BOP crisis happened (Krugman, 1979) and the stabilization plan was abandoned.
From a BOP-and-banking crisis to a public-debt crisis

- **Devaluation** in November 1982.
- **Debtors defaulted** on commercial credits (most denominated in dollars).
- Banking crisis became a public-debt crisis because the **bailout of commercial banks** (Central Bank purchased non-performing assets from failed banks and exchanged dollar-denominated public debt for non-performing assets).
- **High dollarization**: The effect of the currency devaluation on the stock of public debt.

RER-adjusted gross public debt (% GDP) (base year = 2008)
Source: own elaboration using data from Central Bank of Uruguay, FRED, IECON, & INE
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4. Conclusions and lessons
New stabilization plan and structural reforms during the 1990s

Some measures and reforms:

- **Fiscal adjustment** (1990-91): around 6% of GDP.
- **Stabilization plan** (1990-2002): in 1998, inflation reached a one-digit figure for the first time in 30 years.
- **Central Bank Act** (1995): it limited the stock of public debt the Central Bank could hold.
- **Social-security reform** (1996): Uruguay had one of the largest implicit debts in LatAm (Noya & Laens, 2000).
Financial contagion

- **External shock (1999-2001):** devaluation in Brazil / crisis in Argentina (end of Convertibility, banking crisis and default).
- A bank run put pressure on reserves, weakening the credibility on the exchange-rate commitment.
- The stabilization plan was abandoned in June of 2002. The devaluation exceed 100%.
The maturity problem

- The devaluation made the **trend of public debt unsustainable**: At the end of 2002 debt service was 4.5% of GDP and primary surplus 1.3% of GDP.

- A **default** was expected as the **fiscal adjustment necessary** to comply with the debt service and make public debt sustainable was **too large to be reachable without provoking a strong recession** (Calvo, 1998).

- **Uruguay restructured** 50% of total public debt in May 2003.
After the crisis, relative nominal stability

CPI inflation
Source: INE

Once the 2002 crisis was over, inflation consolidated below 10%.
New macroeconomic policy framework since 2003

Strong foreign demand was accompanied by:

- Primary fiscal surpluses.
- Exchange-rate flexibility (inflation and monetary-aggregate targets).
- Proactive management of assets and liabilities of the public sector: debt profile, international reserves and macro-prudential reforms.

<table>
<thead>
<tr>
<th>% of total public debt*</th>
<th>2001</th>
<th>2017</th>
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<tbody>
<tr>
<td>Debt with maturity &lt; 1 year</td>
<td>13%</td>
<td>19%</td>
</tr>
<tr>
<td>Foreign currency public debt</td>
<td>82%</td>
<td>42%</td>
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<tr>
<td>Fixed-rate public debt</td>
<td>43%</td>
<td>88%</td>
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Source: Central Bank of Uruguay

*It includes reserve requirements on bank deposits.
Between 2012 and 2017, the **loss of primary surpluses** restricted the **room for maneuver to manage exogenous shocks**.
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Overall conclusions

• Chronic inflation was related to sustained fiscal deficits.
• Although CPI inflation declined, the inflation tax was still important to finance obligations.
• Since the 1990s, Uruguay improved its fiscal balance.
• Central Bank Act of 1995 and 2007, contributed to strengthening the overall macroeconomic discipline.
• The improvement in the last decade in the debt profile (currency denomination, maturity, etc.) reduced the public finance vulnerability.
• However, the loss of primary surpluses after 2012 risks the sustainability of the public debt.
Lessons and conjectures

• **Bad fiscal** policies favors **nominal instability**.

• The weaker fiscal institutions are, **the more important the role of inflation to finance the public sector**: inflation tax, inflating away main obligations (debt and spending).

• **Nominal rigidities** (indexation of prices/salaries) and **dollarization** of financial assets reduce the **monetary policy effectiveness to stabilize** the economy.
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September 25th, 2018
International reserves (% GDP)
Source: Instituto de Economía - Universidad de la República, Central Bank of Uruguay.
Real Exchange Rate with the U.S. (Index 100 = average 1913-2014)

Source: Aboal D. (2003); own elaboration based on data from FRED, INE and BCU.
Monetary base (% GDP)

Source: Instituto de Economía - Universidad de la República.
Central Government: revenue and expenses 1930-1973 (% GDP)

Source: Instituto de Economía - Universidad de la República