Paraguay's Fiscal and Monetary History

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Central Bank of Paraguay

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   - 1961 - 1981
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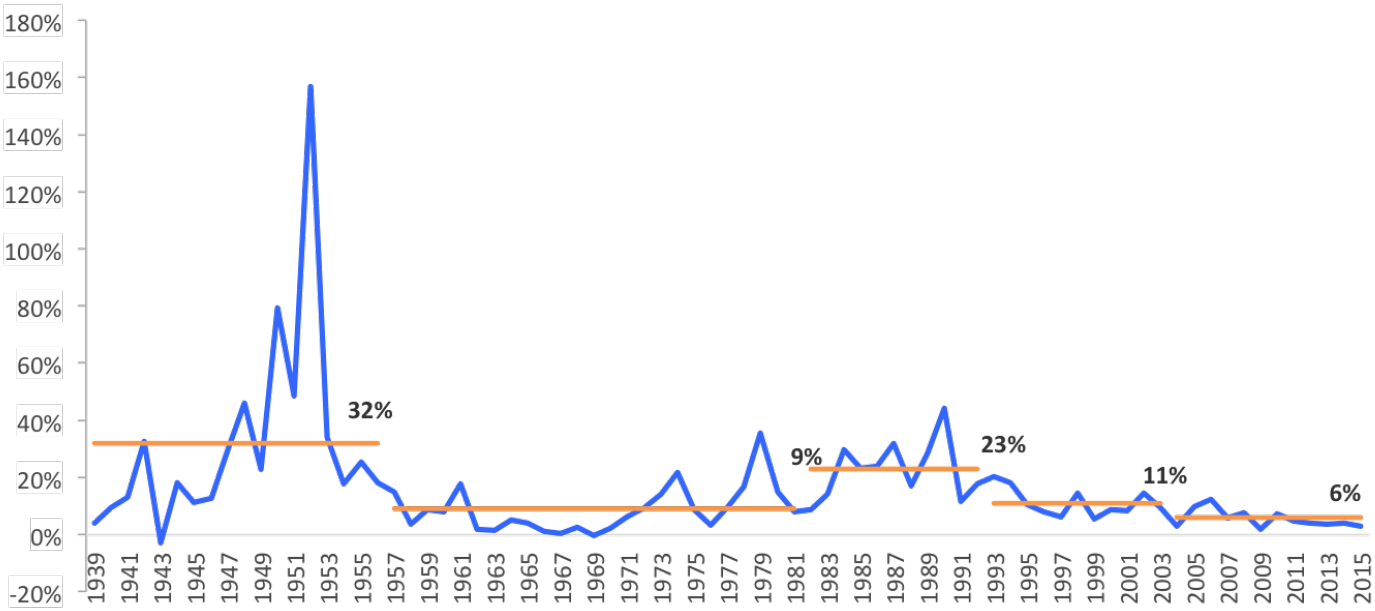
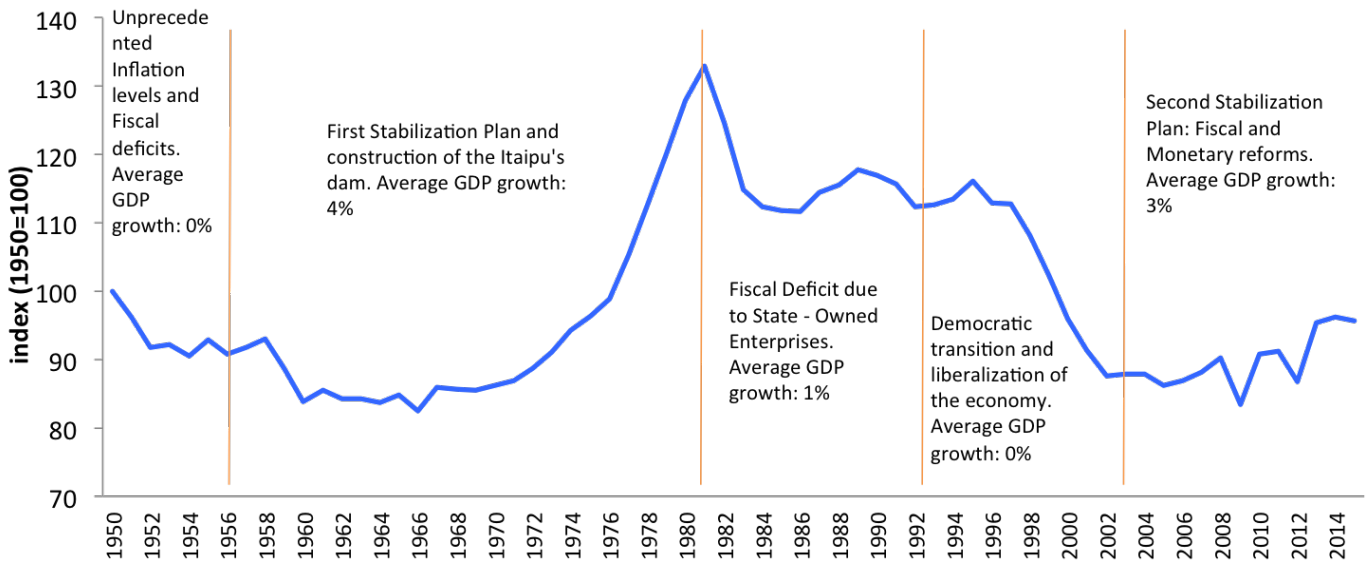
Overview of the Paraguayan economy

Figure 1 : Inflation



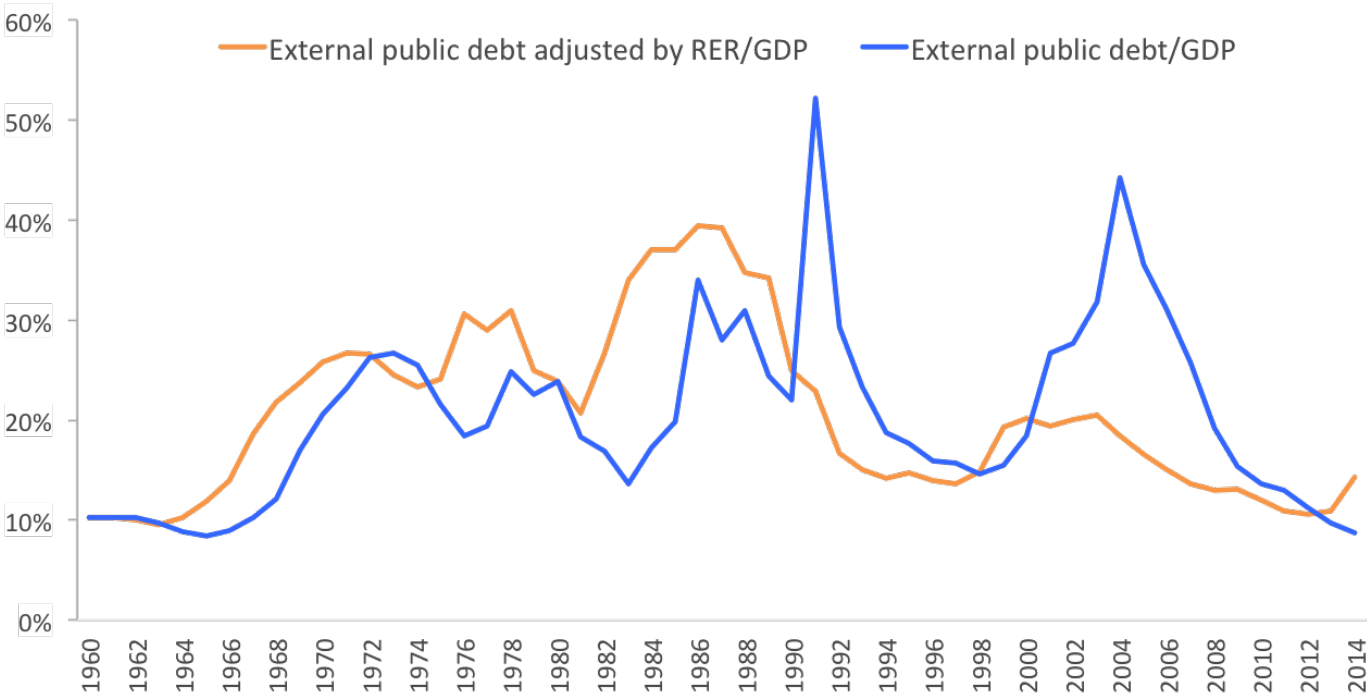
Overview of the Paraguayan economy

Figure 2 : Real GDP per capita detrended



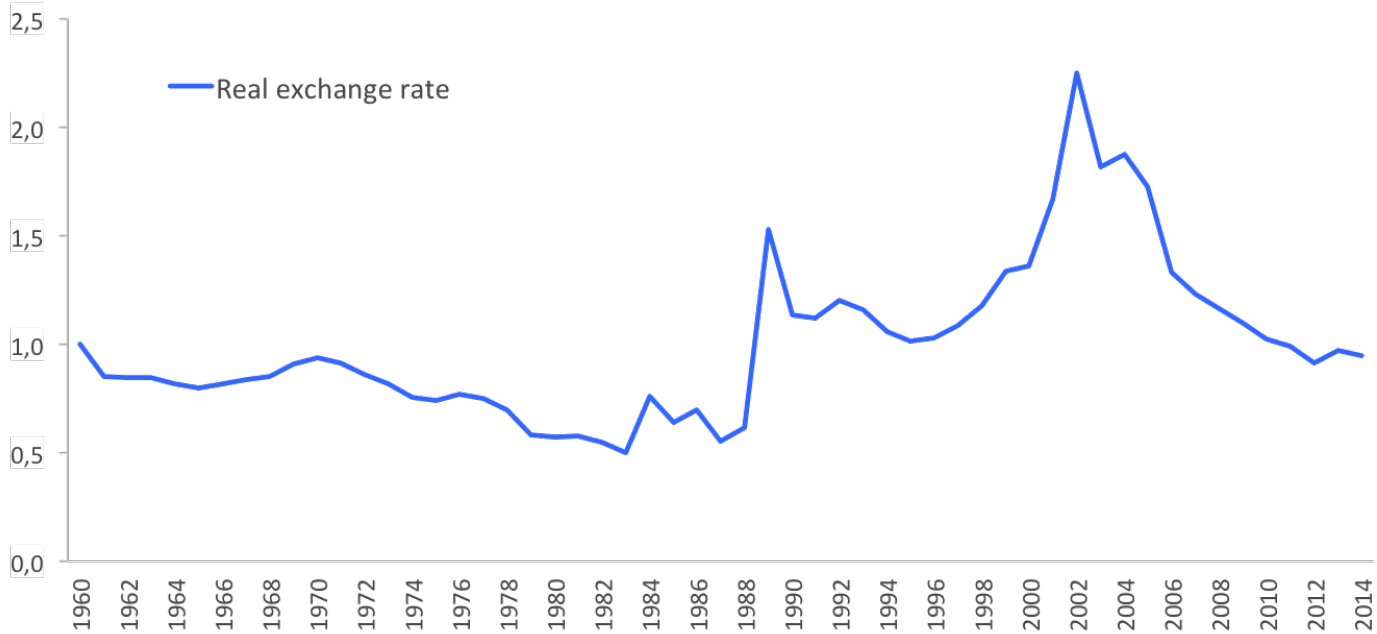
Overview of the Paraguayan economy

Figure 3 : External public debt



Overview of the Paraguayan economy

Figure 4 : Real exchange rate



Overview of the Paraguayan economy

Figure 5 : Average annual per capita GDP growth

Countries	50-59	60-69	70-79	80-89	90-99	00-10	1950-2010
Brazil	3.2	2.6	5.5	0.8	0.1	2.5	2.4
Chile	1.2	2.6	0.5	1.9	4.8	3.2	2.4
Mexico	2.8	3.3	3.6	0.0	1.6	1.0	2.0
Colombia	1.6	1.9	3.5	1.3	1.1	2.7	2.0
Paraguay	0.8	1.8	5.6	2.0	0.7	2.0	2.0
Ecuador	2.0	2.2	4.0	-0.3	0.2	2.1	1.7
Peru	1.7	3.3	1.3	-2.2	1.4	4.1	1.6
Argentina	0.7	3.1	1.6	-2.2	2.8	1.9	1.3
Bolivia	-2.0	3.0	2.3	-2.1	1.8	1.7	0.8
Venezuela	3.4	0.3	0.7	-2.9	0.3	2.0	0.6

Source: Central Bank of Paraguay and The Conference Board Total Economy Database.

Narrative of the periods

- 1961 1981. Stroessners government priority was containing inflation, boost trade and strenghthen the economy. To attain this, and with the technical assistance from the IMF, a stabilization plan was implemented with the objective of restoring monetary and fiscal stability as the basis of economic growth
- 1982 1992. The Stabilization Plan was not effective for several domestic reasons and external shocks. This period chracterized by an increase of inflation due to State-Owned Enterprises (SOE) deficits financed by the Central Bank, low real GDP growth, sustained current account deficits, reduction of foreign reserves and succesive devaluations of the nominal exchange rate.

Narrative of the periods

- 1993 2003. The country went through a democratic transition period. Several fiscal and monetary policies were implemented. The period characterized by the liberalization of the economy, but without the proper regulatory framework, which resulted in a debt crisis and poor economic performance.
- 2004 2014. This period starts with an Stand by agreement with the IMF in December, 2003. This program was oriented to reduce tax evasion and reform the taxation system. Moreover, efforts were made to strengthen SOE and to reform public banking. Also, in this period an IT regime (2011) and a fiscal rule (2013) were implemented.

The Budget Constraint Accounting for Paraguay

Following Kehoe, Nicolini and Sargent (2010), we modify the original budget constraint to incorporate Itaipu revenues as a source of government financing:

$$E_t Itaipu_t + M_t + b_t^* E_t = D_t P_t + DPE_t P_t + M_{t-1} + b_{t-1}^* r_{t-1}^* E_t$$

The budget constraint can be rewritten in terms of real GDP:

$$\xi_t(\theta_t^* - \theta_{t-1}^*) + (m_t - m_{t-1}) + m_{t-1}(1 - \frac{1}{g_t \pi_t}) + \xi_t \vartheta_t$$

$$= \xi_t \theta_{t-1}^* (\frac{r_{t-1}^*}{g_t \pi_t^W} - 1) + d_t + dpe_t$$

where, $\vartheta_t = (Itaipu_t / P_t^w)/y_t$

Periods of analysis 1961 - 1981

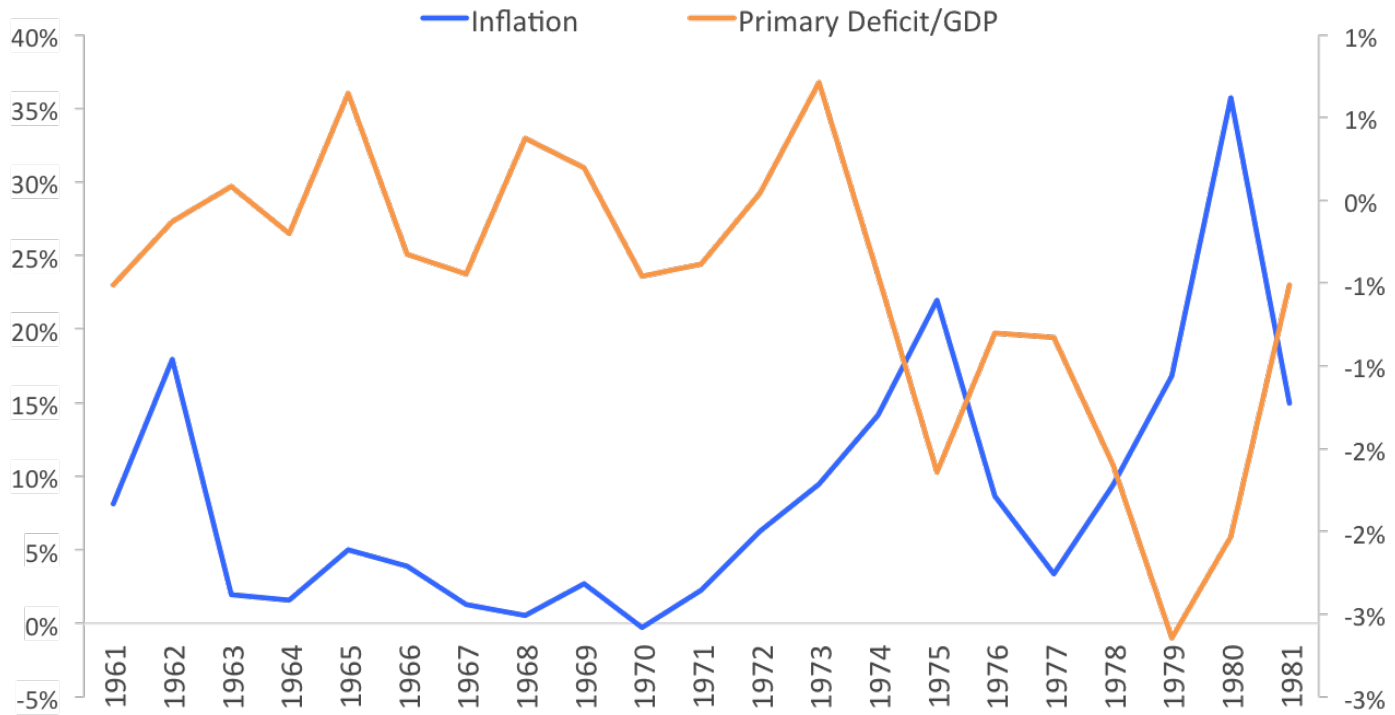
Figure 6 : Budget constraint

	1961-1981	1982-1992	1993-2003	2004-2014
External Debt	0.50%	-0.37%	0.34%	-0.56%
Money Issuing	0.29%	-0.48%	-0.02%	0.29%
Seigniorage	1.91%	2.51%	0.95%	1.41%
Itaipu	0.00%	0.83%	2.24%	2.53%
Total	**2.70%**	**2.49%**	**3.51%**	**3.67%**
Primary Deficit	-0.40%	-0.52%	3.00%	1.94%
External Return	-0.13%	-0.20%	-0.18%	-0.13%
Public Enterprises Deficit(*)	3.23%	3.20%	0.69%	1.86%
Total	**2.70%**	**2.49%**	**3.51%**	**3.67%**

Estimated as a residual.

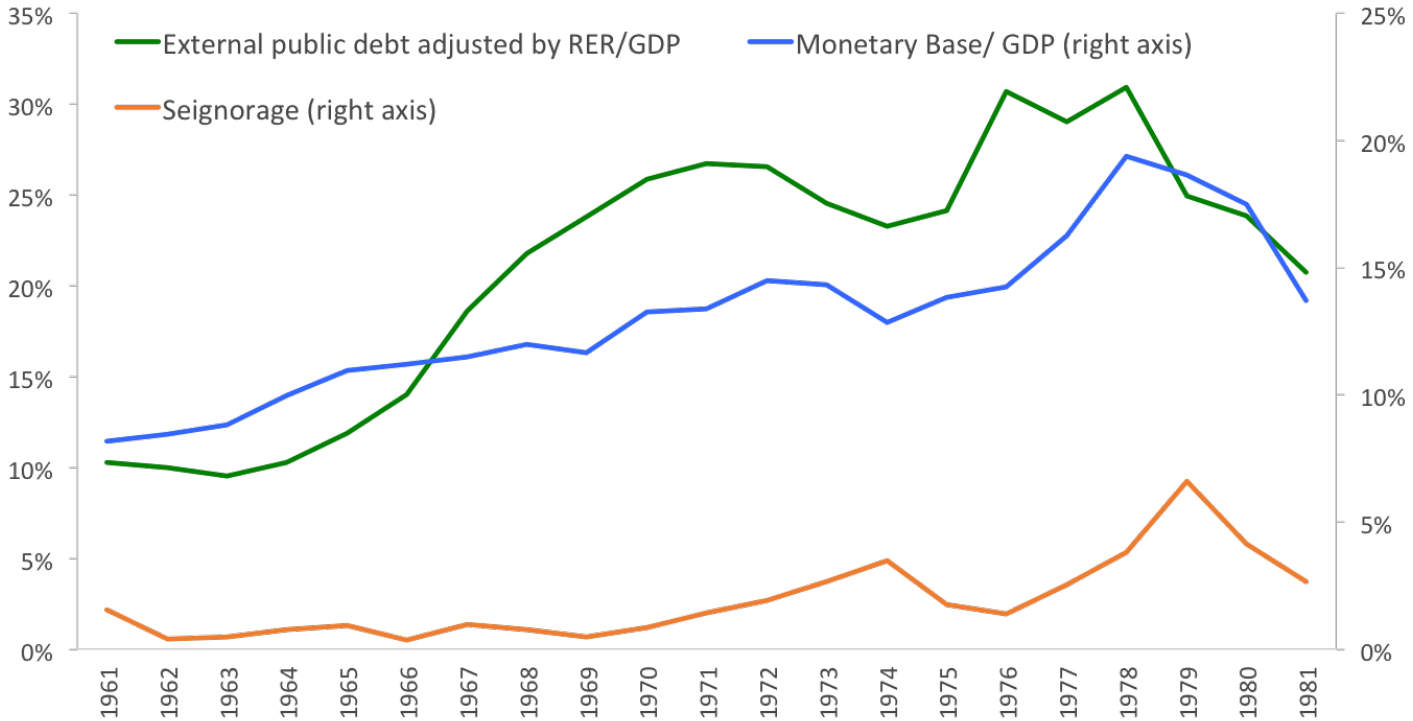
Periods of analysis 1961 - 1981

Figure 7 : Inflation and central government primary deficit

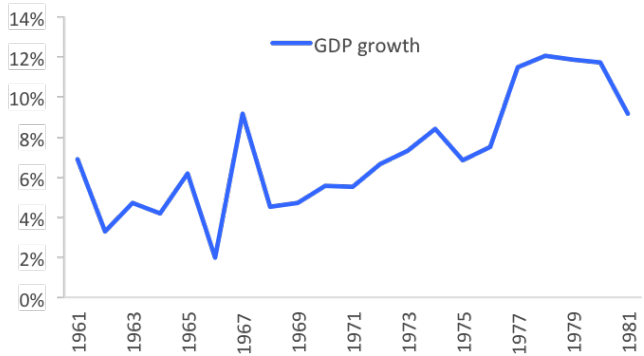


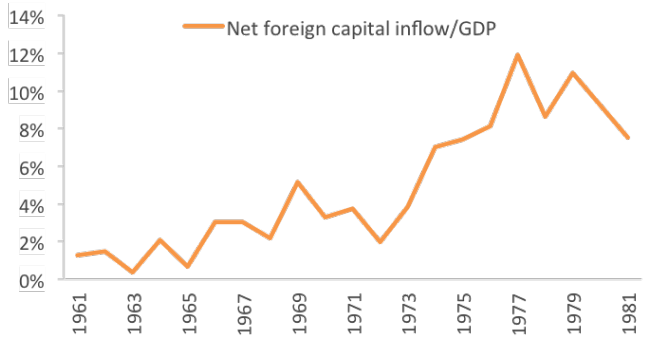
Periods of analysis 1961 - 1981

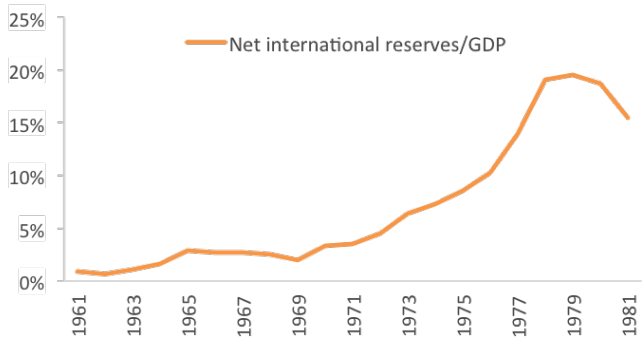
Figure 8 : Funding sources

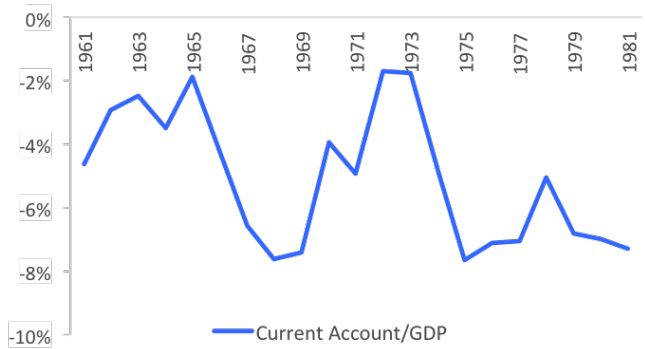


Periods of analysis 1961 - 1981









Annex: Itaipu

- Itaipu Binational is an entity created in the 70s by the governments of Paraguay and Brazil. The idea was using water resources of the Parana River to generate hydroelectricity.
- Itaipu belongs to Brazil and Paraguay (50 percent each).
- The Itaipu Binational entity resorted to loans for the construction of the dam. The loans were mainly obtained from Brazil.
- Itaipu pays the loans from their revenues of their energy sales.
- Paraguay receives two types of financial compensations. First, for the export of energy to Brazil. Second, for the utilization of the natural resources (Parana river).
- The investment in construction was on average 10 percent of GDP per year.

Periods of analysis 1982 - 1992

Figure 9 : Budget constraint

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External Debt	0.50%	-0.37%	0.34%	-0.56%
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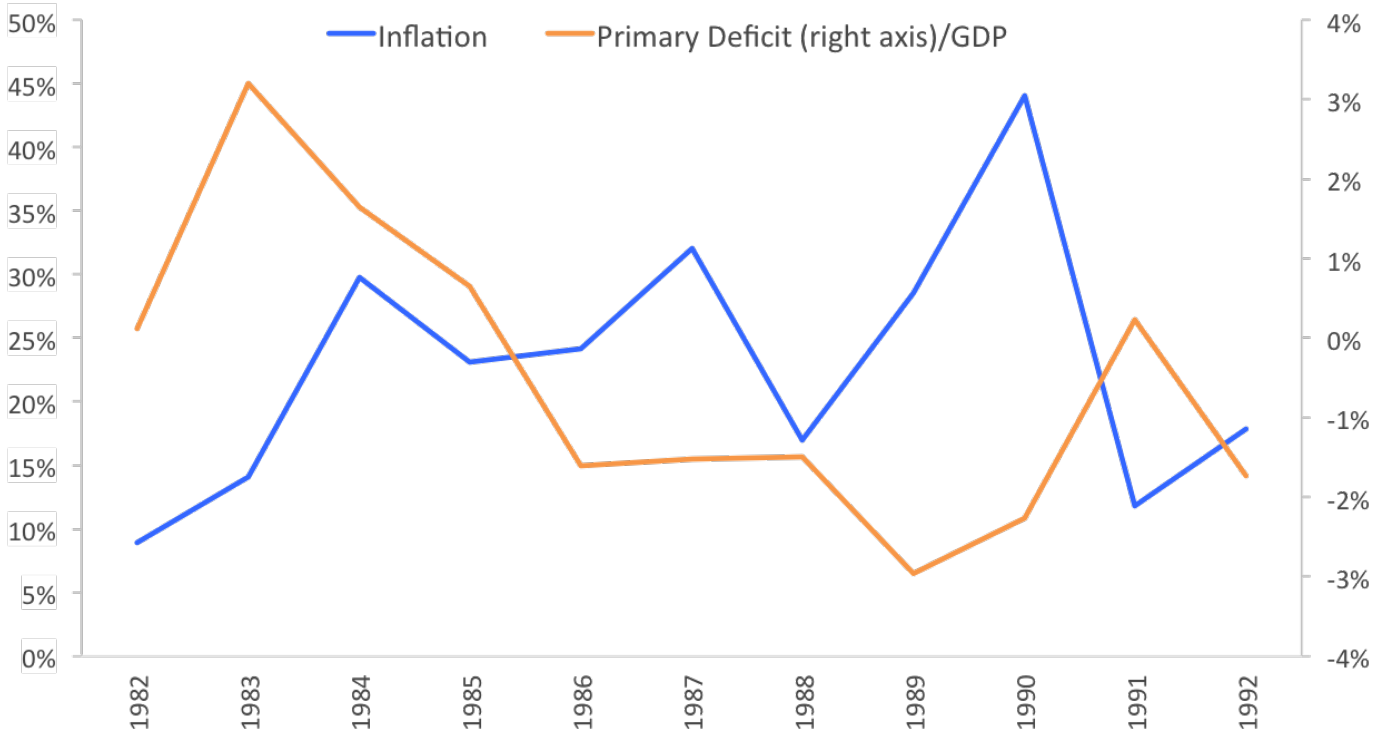
Estimated as a residual.

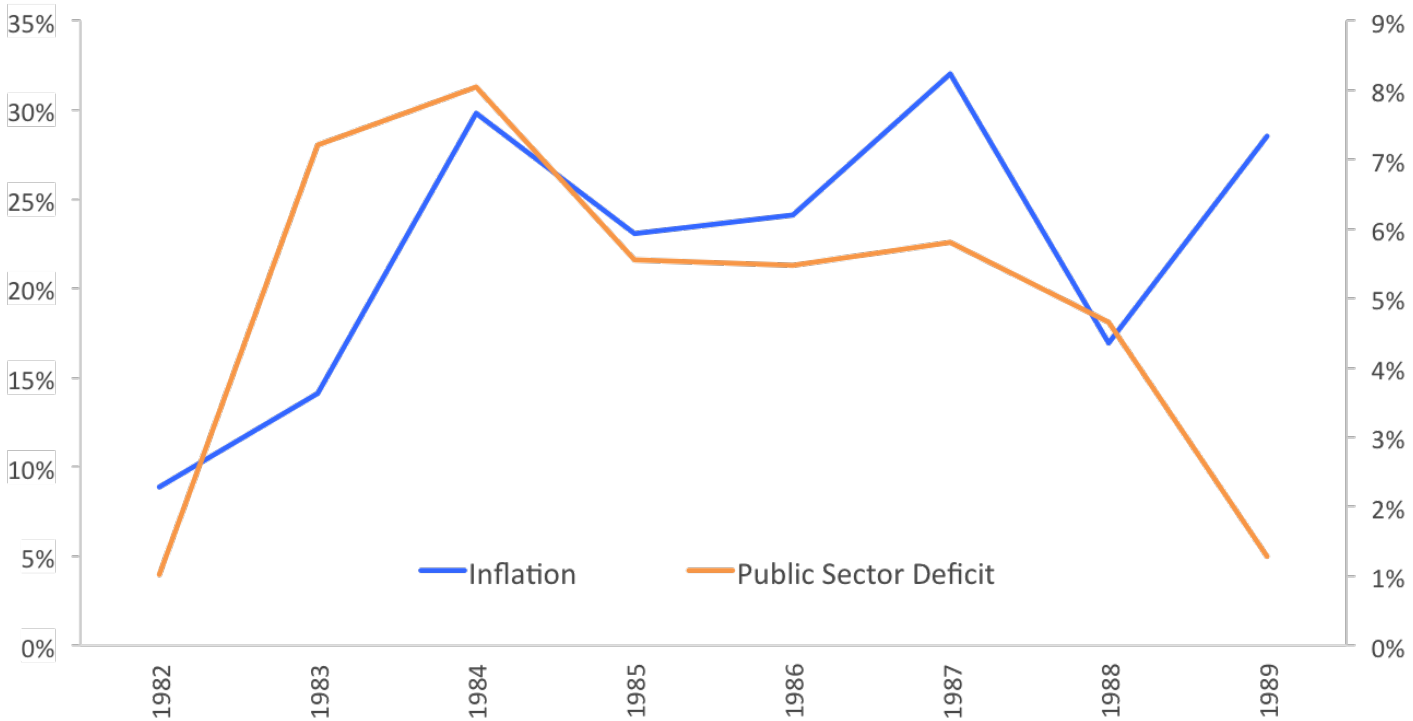
Periods of analysis 1982 - 1992

Figure 10 : Inflation and central government primary deficit



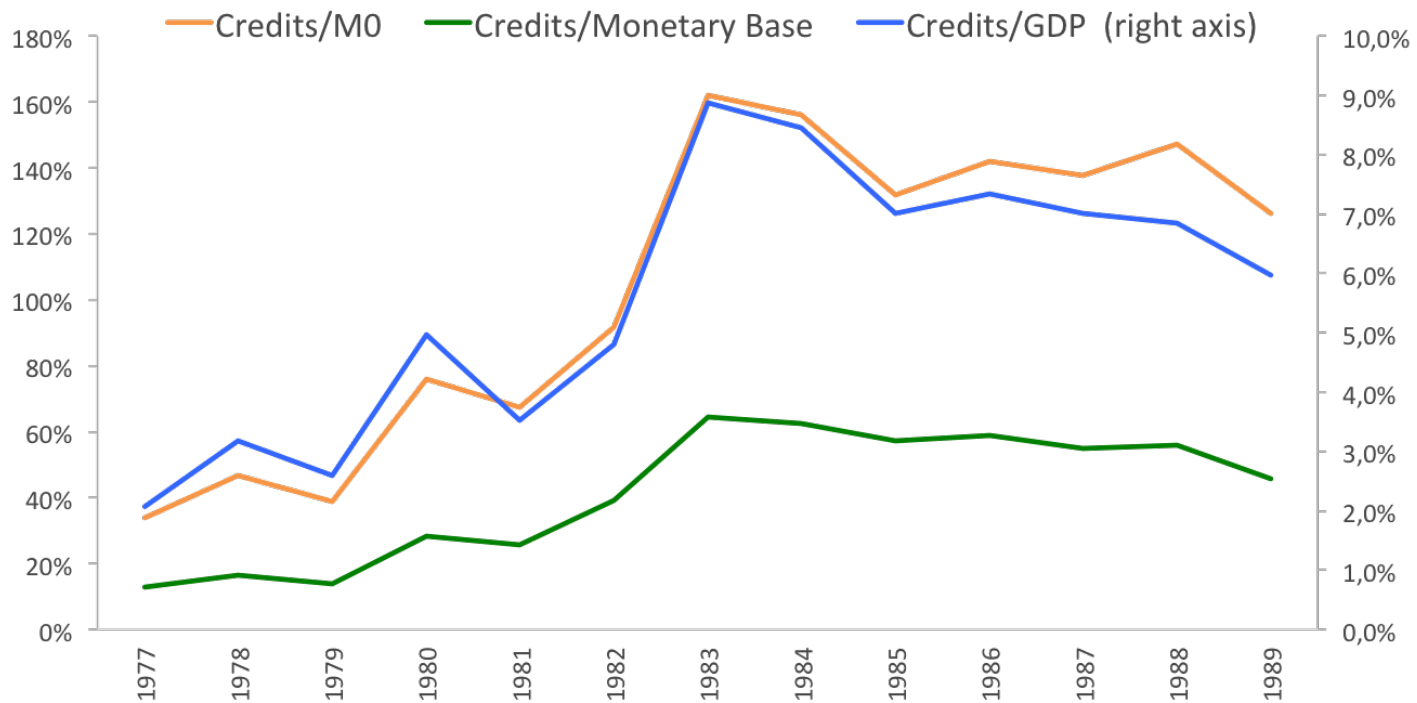
Periods of analysis 1982 - 1992

Figure 11 : Inflation and public sector deficit



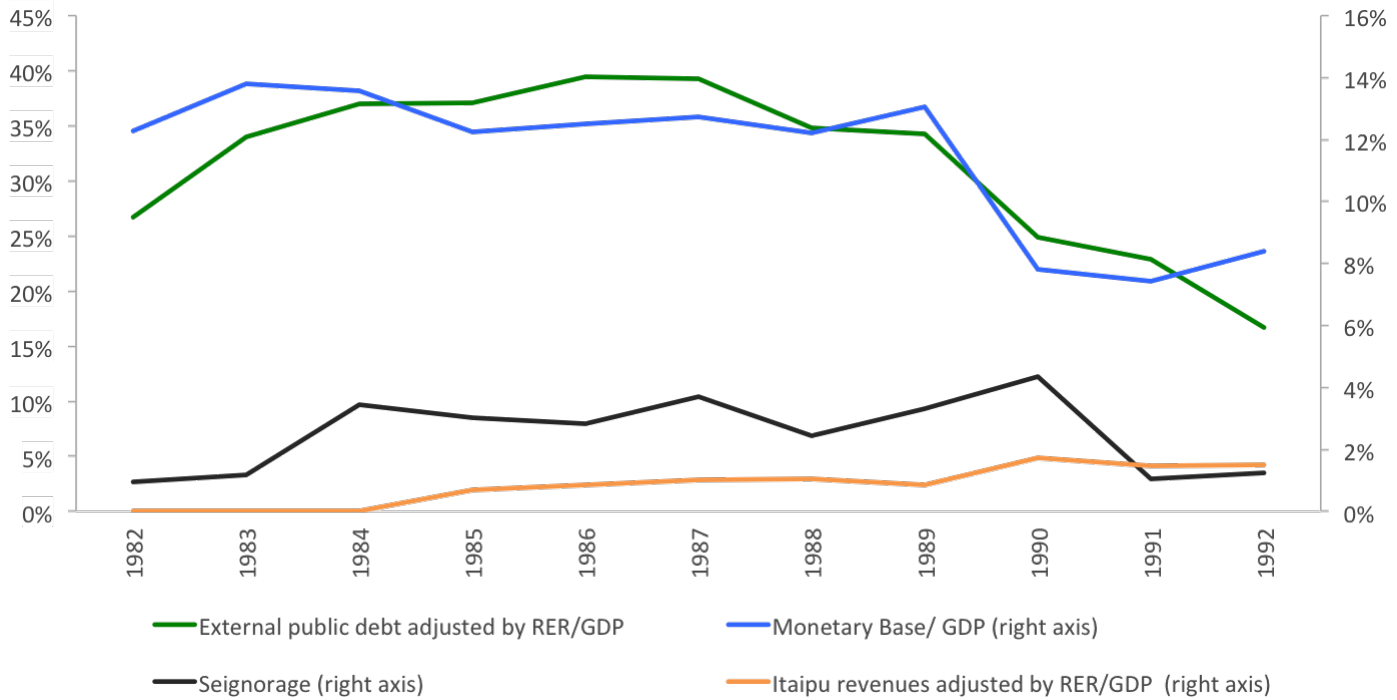
Periods of analysis 1982 - 1992

Figure 12 : Credits financed by the Central Bank

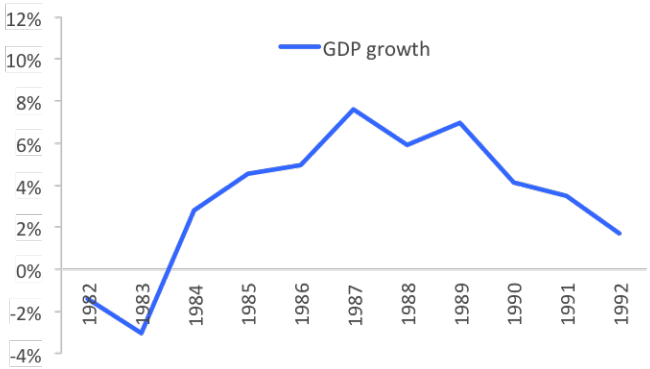


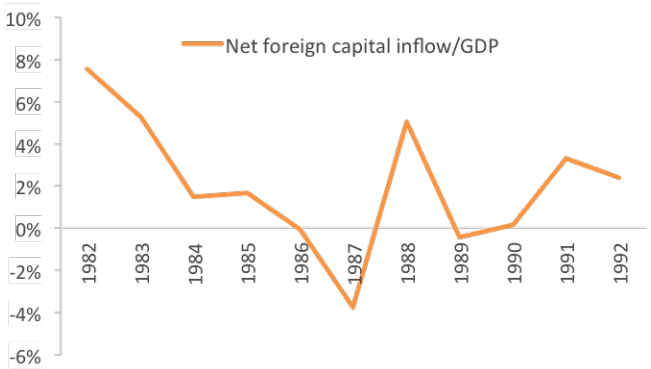
Periods of analysis 1982 - 1992

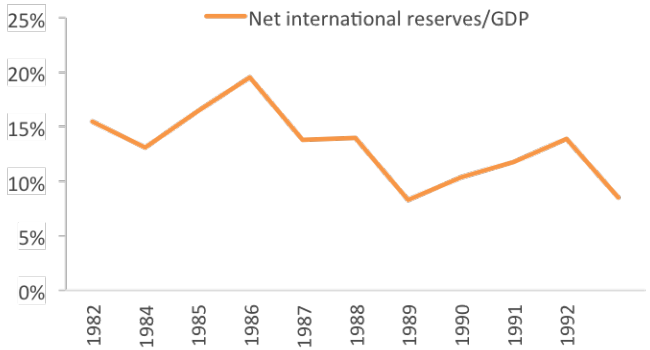
Figure 13 : Funding sources

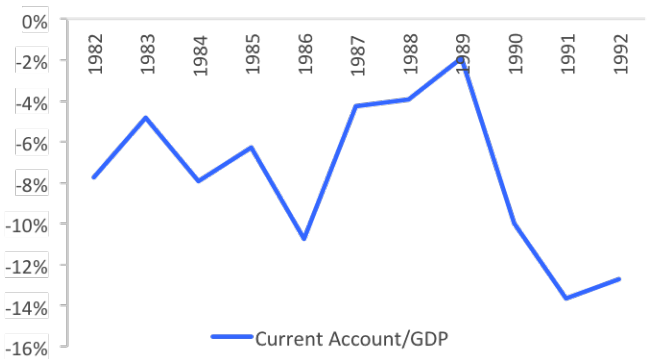


Periods of analysis 1982 - 1992









Periods of analysis 1993 - 2003

Figure 14 : Budget constraint

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External Debt	0.50%	-0.37%	0.34%	-0.56%
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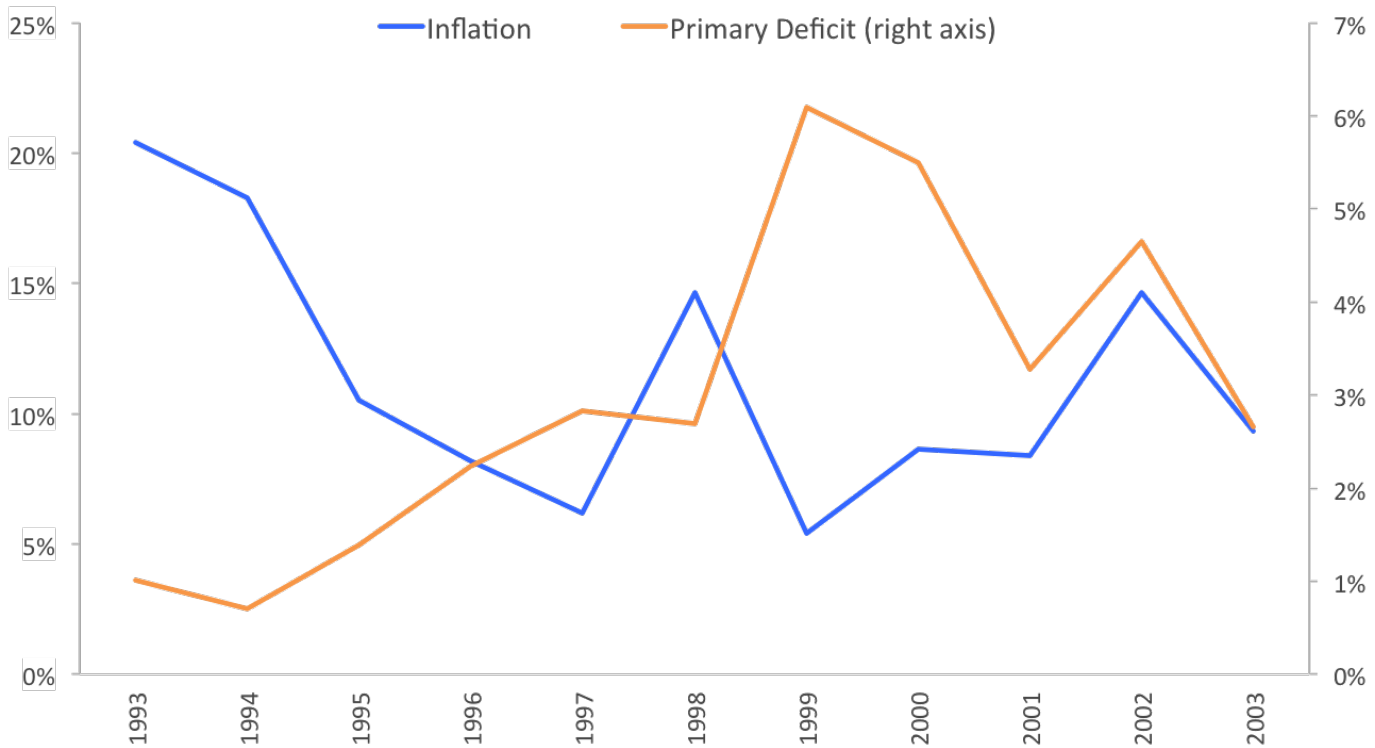
Estimated as a residual.

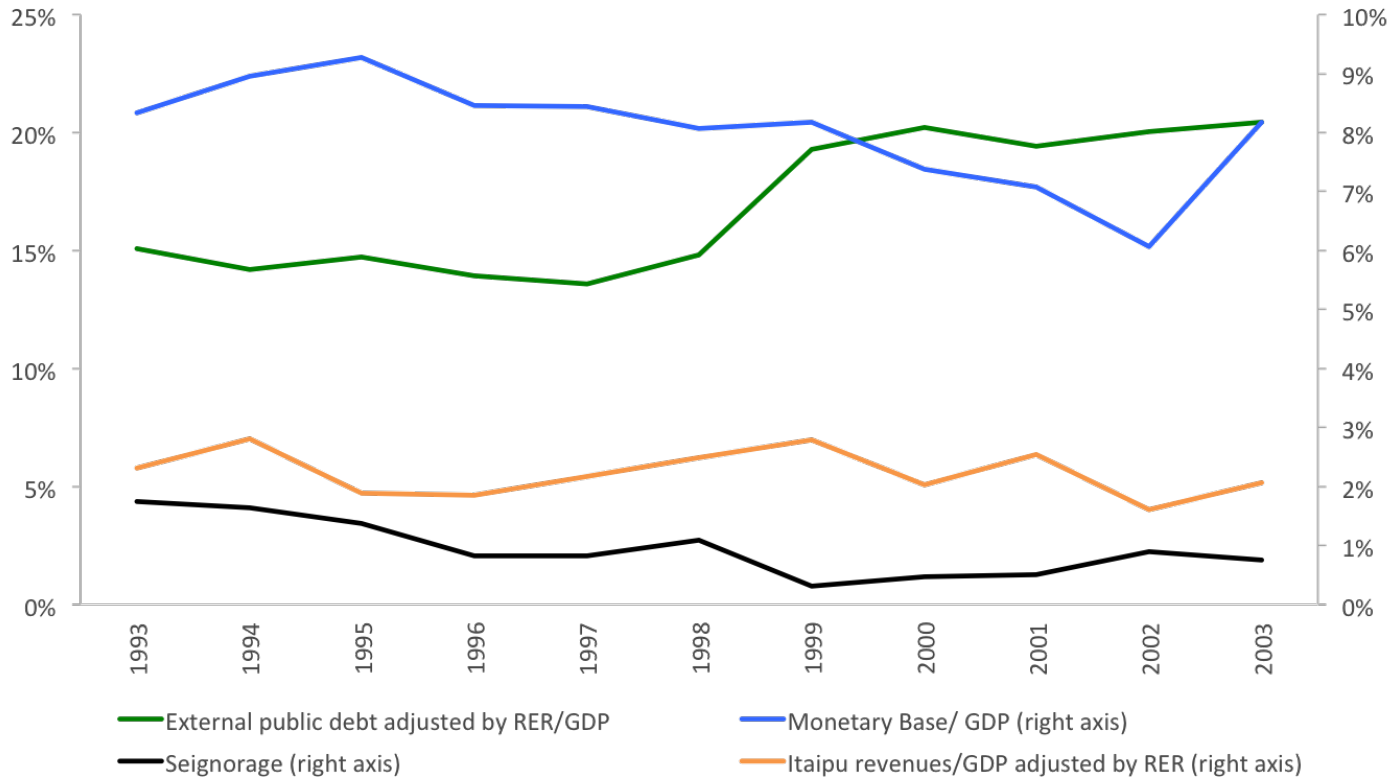
Periods of analysis 1993 - 2003

Figure 15 : Inflation and central government primary deficit

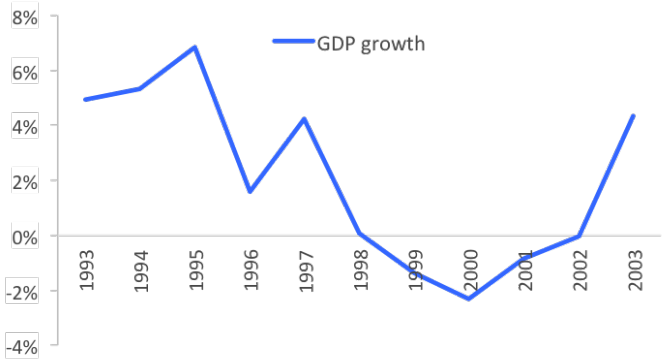


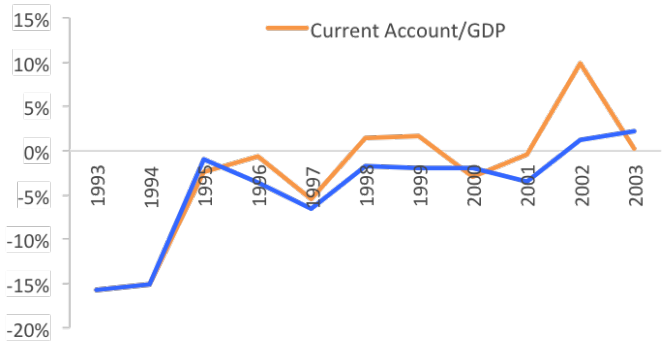
Periods of analysis 1993 - 2003

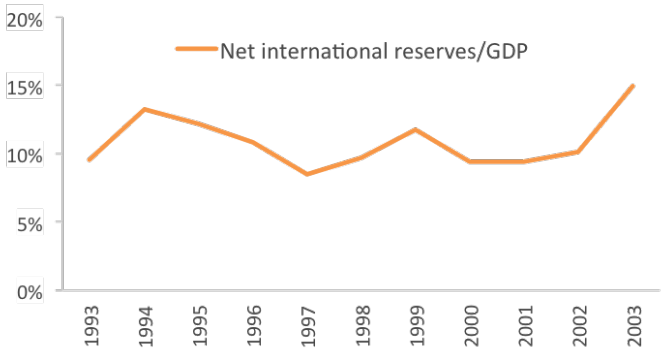
Figure 16 : Funding sources



Periods of analysis 1993 - 2003







Periods of analysis 2004 - 2014

Figure 17 : Budget constraint

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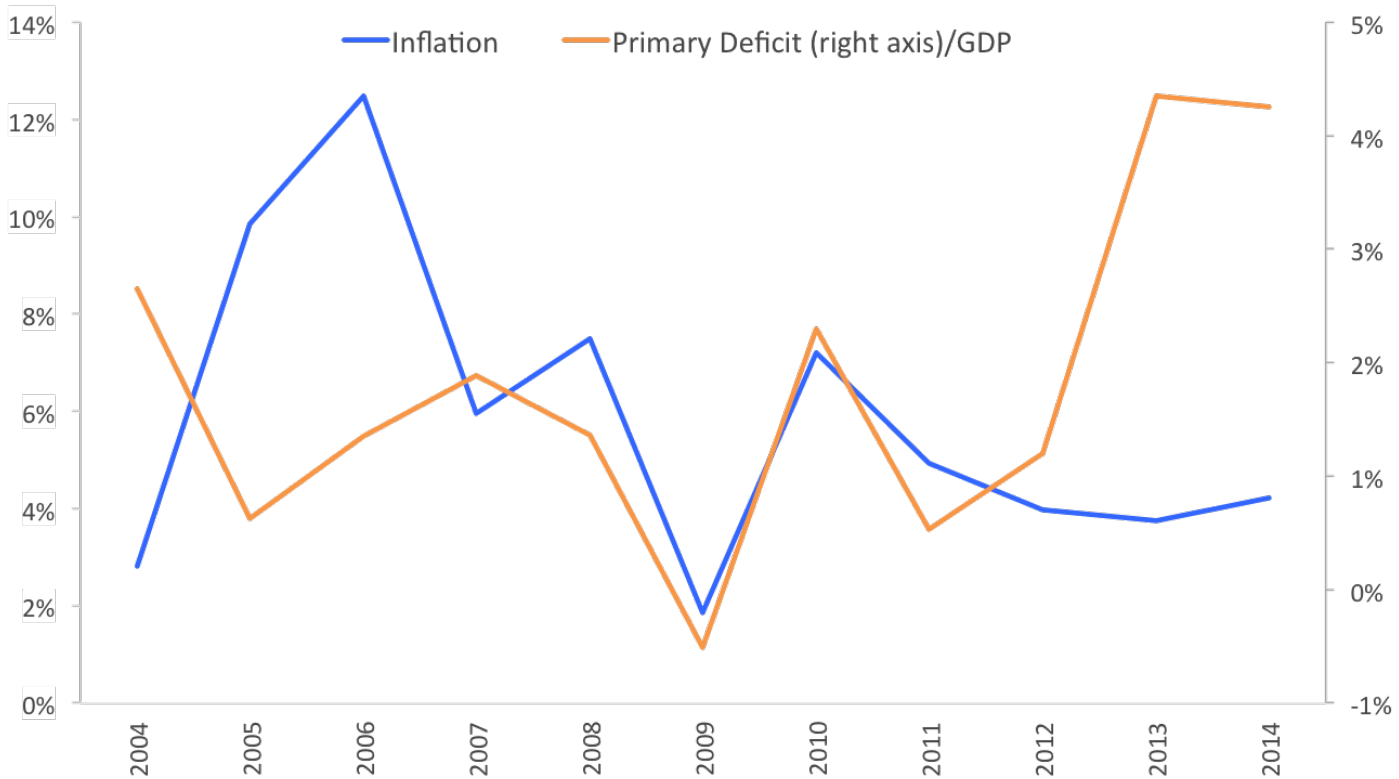
Estimated as a residual.

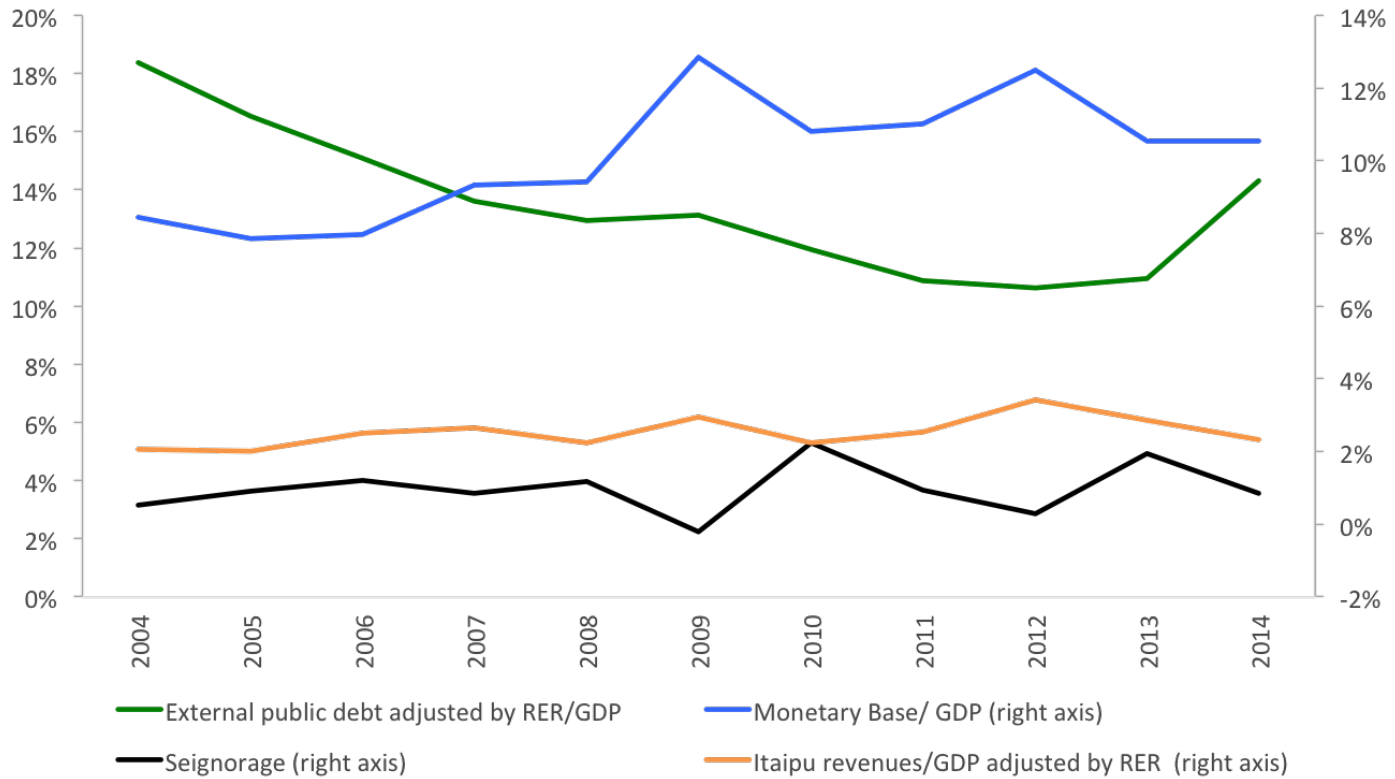
Periods of analysis 2004 - 2014

Figure 18 : Inflation and central government primary deficit

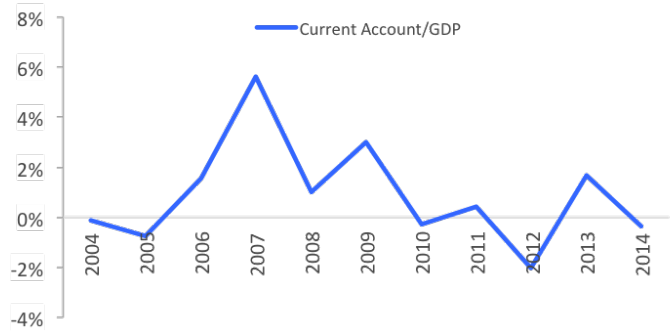


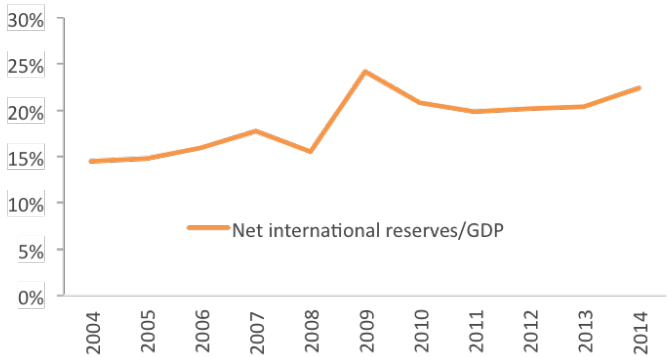
Periods of analysis 2004 - 2014

Figure 19 : Funding sources



Periods of analysis 2004 - 2014





Thanks