Risk Financing Immunization
The case of Uruguay

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Lessons from experience

- Recent debt crises taught that **roll over risk** is the most important challenge debt managers have to deal with.

- **Sudden capital reversals** are the usual trigger of debt crises, mainly when the debtor's profile amortization has a high concentration of short term maturities.

- Debt management strategies that are **biased towards reducing financing costs** without a proper risk evaluation are prone to enter in this trap.

- **Funding** is concentrated in the **short term** because debt managers:
  - Take for granted short term funding availability under any circumstances.
  - Underestimate the probability of fiscal or financial crisis (external or domestic).
  - Dismiss the real dimension of international contagion.
  - Ignore fat tails events (uncertain events).

- Once **Roll Over constraints** appear, policy makers begin to run the facts from behind.
  - Accepting higher financing costs.
  - Shortening maturities even more.
  - Triggering a sequence of events characterized by the increase in risk aversion and liquidity stringency which deepen the crisis.

- That scenario could degenerate in a **solvency problem**, that eventually lead to default.

Principles in Roll Over Risk Immunization

- Financing risk prevention is always less expensive than crisis resolution costs. This principle must be included in any Debt Management Strategy.

- Adequate Liability Management (LM) is the crucial tool to achieve that goal.
  - Stretching out maturities
  - Pre-financing short term amortizations (cash holdings)

- Cash management becomes a strategic component to strengthen financing risk immunization.

- The implementation of some sort of Greenspan-Guidotti rule is suitable to achieve that goal.

Principles in Roll Over Risk Immunization

- The optimal policy mix between extension and cash accumulation depends on market conditions.

- As a general rule, financing risk immunization is done cheaper through maturity extension than cash accumulation.
  - Particularly in times when long term interest rates are low.
  - Carry trade on reserve holdings is high.

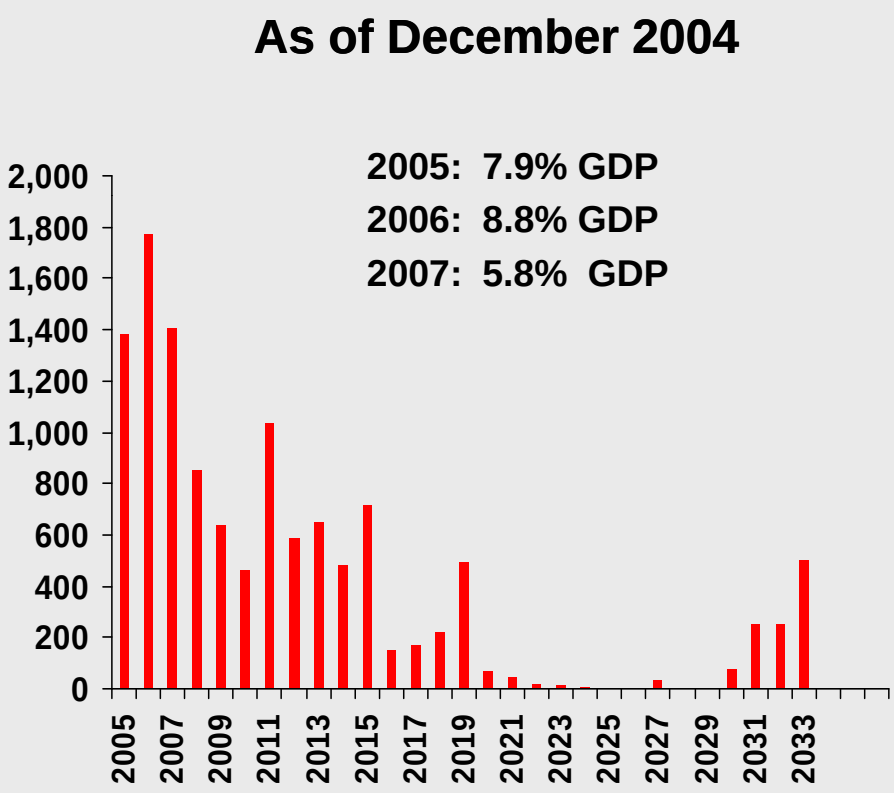
- The respective policy sequence is
  - Look for maturity extension through swaps and buybacks in the short end of the curve and then
  - Implement some sort of Greenspan-Guidotti rule.

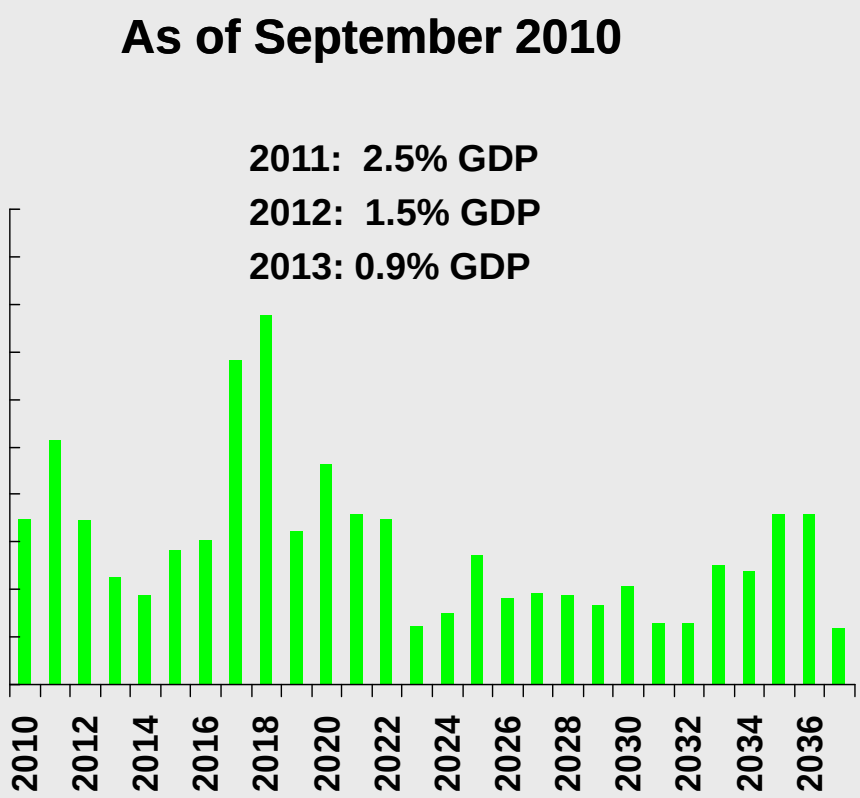
Roll Over Risk Immunization in Uruguay

First Step: Debt Profile Smoothening

Second Step: Greenspan - Guidotti Rule implementation

First Step: Debt Profile Smoothening



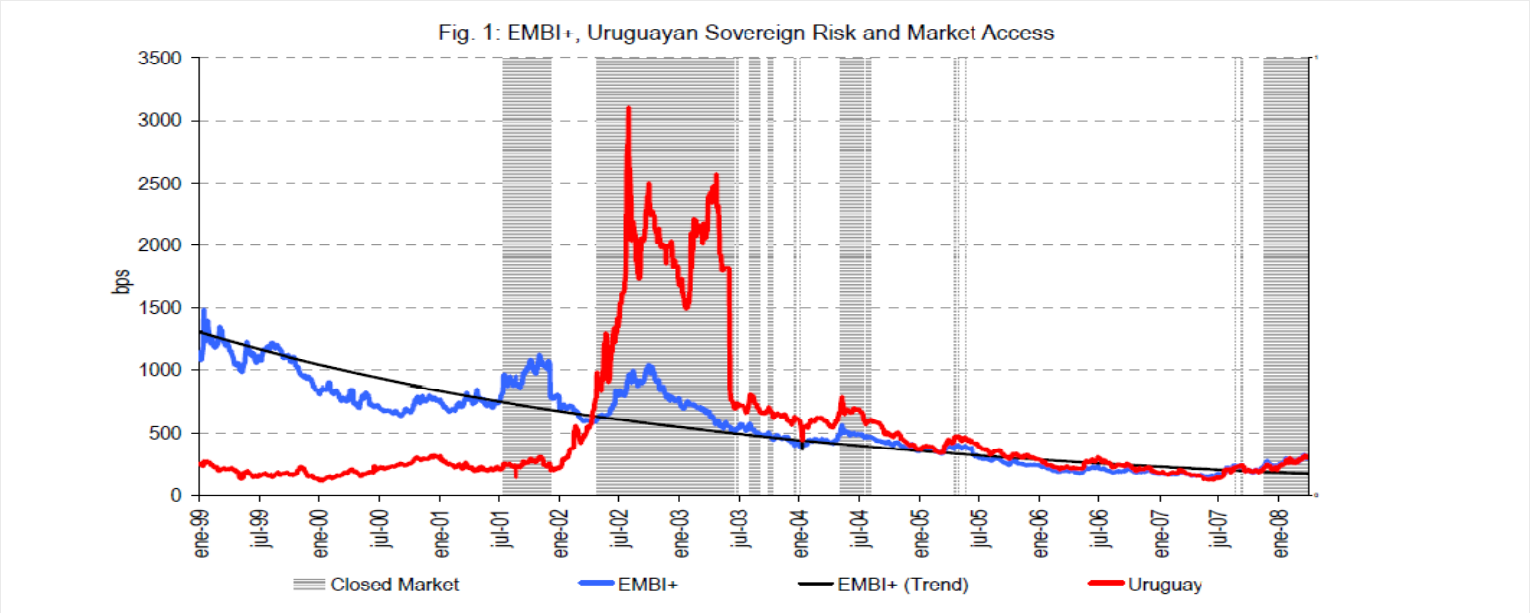


Source: Debt Management Unit, Ministry of Finance

Second Step: Greenspan - Guidotti Rule implementation

- PRINCIPLES
  - Fiscal gap is financed with debt.
  - Macroeconomic policy could be affected by uncertainty (fat tails, sudden Stops, unexpected events).
  - Cash accumulation to cover short term debt service (interest + amortization).
- SETTING THE RULE
  - Value at Risk model to determine bad states of nature occurrence probability.

Shadowed area show periods when Uruguay faced financing stringency

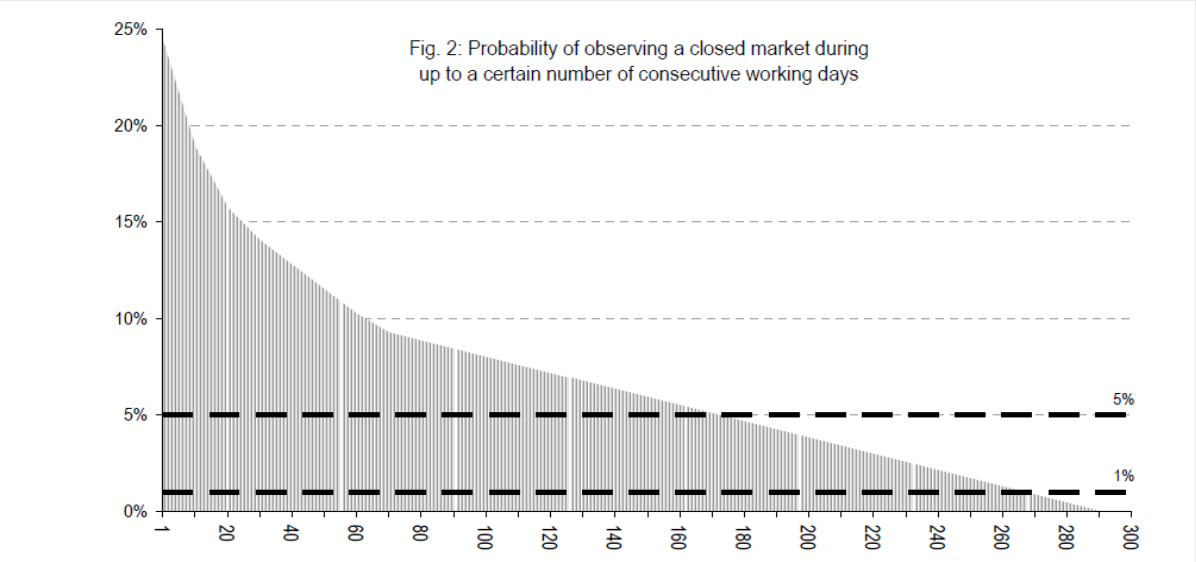


Source: Ministry of Finance.

DMU´s studies show that Markets were closed up to:

i) 9 months with a 95% probability;

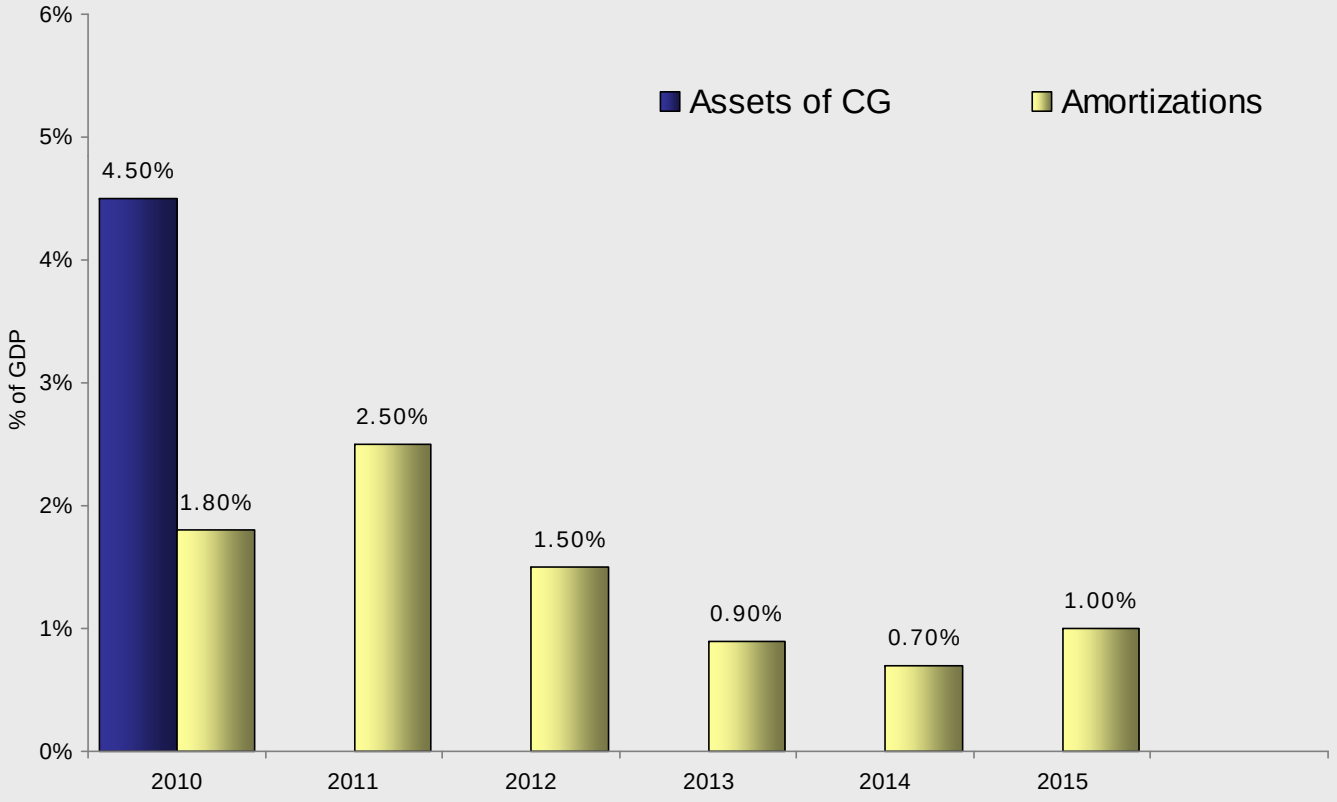
ii) 14 months with a 99% of probability



Results

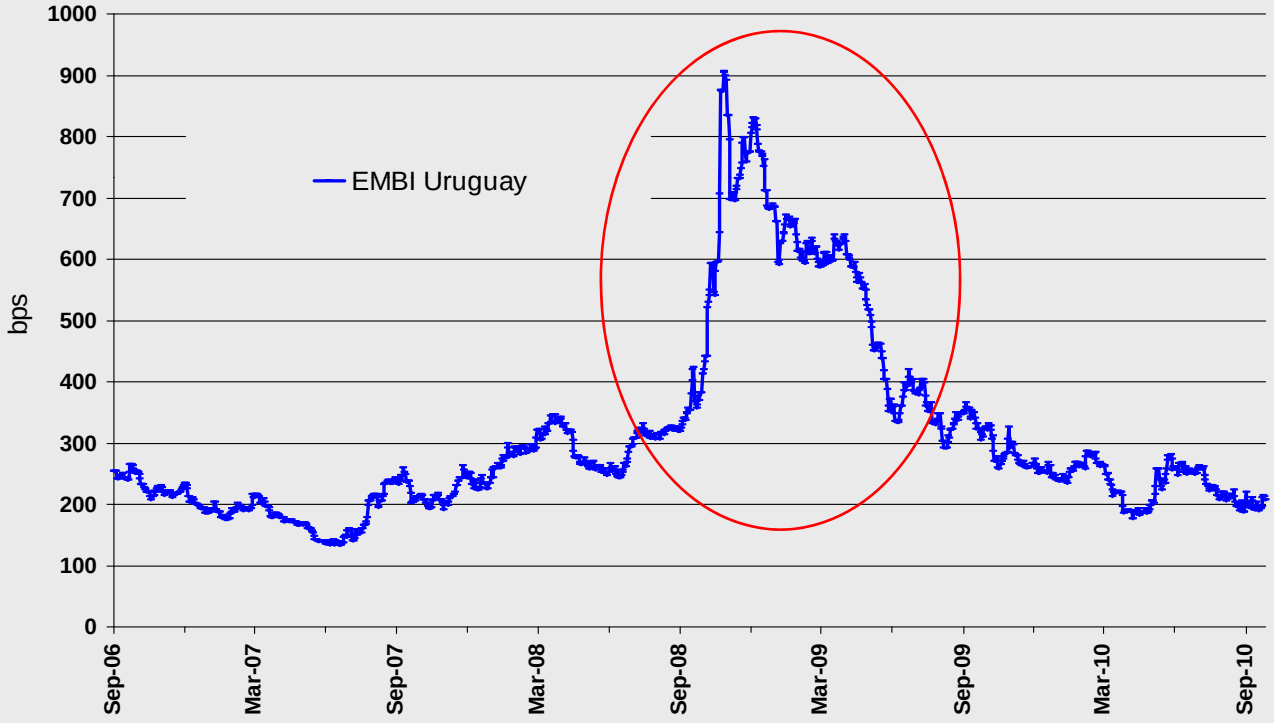
- Central Government cash holdings equivalent to:
  - 9 months protects against 95% of capital reversal risk
  - 14 months cover 99% of that risk

Uruguay´s Central Government cash holdings could easily cover both events



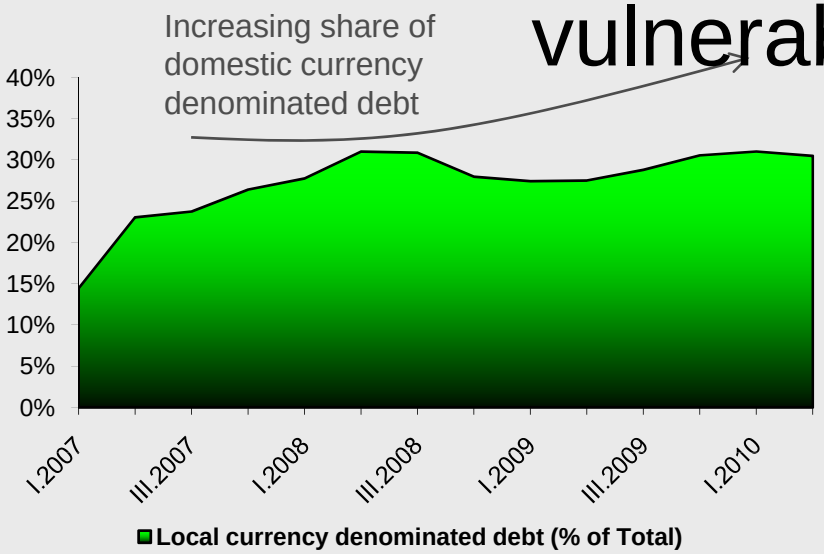
Sources: Ministry of Economy.

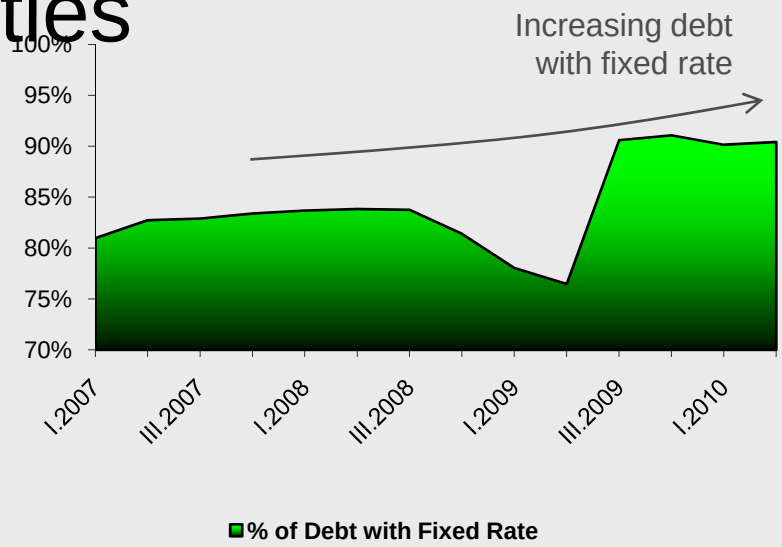
Uruguay pre-funding strategy allowed the country to stay out of capital markets during the post Lehman episode (Sept 2008)

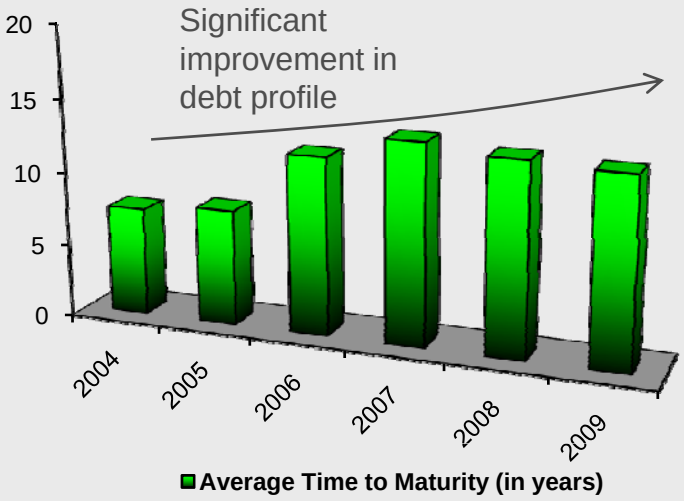


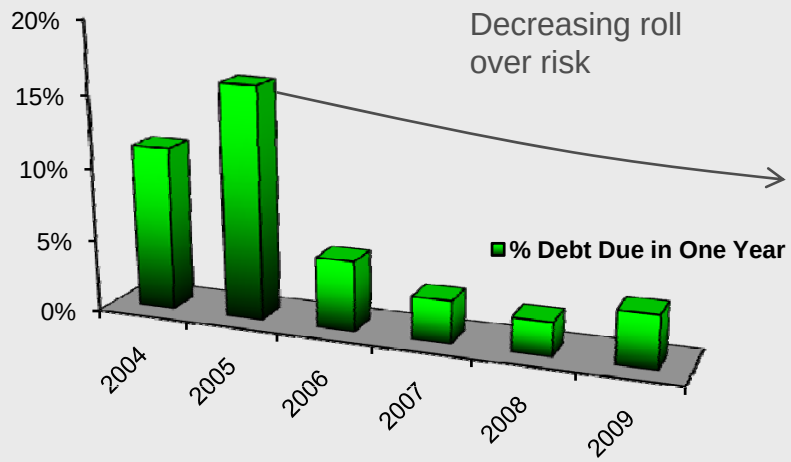
Source: Bloomberg - JP Morgan

Liability Management diminished financial vulnerabilities









Source: Debt Management Unit, Ministry of Finance