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

As of December 2004

- 2005: 7.9% GDP
- 2006: 8.8% GDP
- 2007: 5.8% GDP

As of September 2010

- 2011: 2.5% GDP
- 2012: 1.5% GDP
- 2013: 0.9% GDP

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.
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

Increasing share of domestic currency denominated debt

Increasing debt with fixed rate

Local currency denominated debt (% of Total)

% of Debt with Fixed Rate

Average Time to Maturity (in years)

% Debt Due in One Year

Source: Debt Management Unit, Ministry of Finance