SToppIng inFLation in a FRAGIle Global Context

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INTRODUCTION

• Trying to stop inflation is a familiar issue in these parts of the world.

• We have a lot to learn from past experience.

• However, nowadays the international macroeconomic arena has become extremely shaky and much harder to understand.

• Therefore, it is important that EM policymakers take this into account, which I will proceed to do.
GLOBAL LIQUIDITY
CENTRAL LIQUIDITY PUZZLE:

• The Lehman crisis was associated with huge “haircuts”: **Liquidity Crunch**

![Figure 4: The Repo-Haircut Index](image)

Source: G.Gorton and A. Metrick “Securitized Banking and the Run on Repo,” 2012

• However, Developed Market economies (DMs) exhibited **Liquidity Trap**
"[...] the fact that contracts are fixed, and wages are usually somewhat stable in terms of money, unquestionably plays a large part in attracting to money so high a liquidity-premium"

Keynes (General Theory, Chapter 17, p. 236, emphases are mine)
• Money dominates other instruments, because there is a large array of goods that money can fetch on the spur of the moment, due to price stickiness.

• Especially if it is a non-inflationary global unit of account, e.g., USD and euro, i.e., reserve monies.

• This helps to explain Liquidity Trap in reserve currencies, while there is a massive Liquidity Crunch in other financial assets.
LIQUIDITY DEFLATION: The Limits of PTM

- However, the output backup of reserve monies may not increase in proportion with their real value (i.e., stock/price level).

- Hence, it is possible that the Liquidity Quality of reserve monies decline as their real stock increases beyond a certain point: Liquidity Deflation.

- In that case, pumping in more reserve money may not increase significantly the effective value of reserve money as credit collateral.

- Liquidity Deflation weakens the credit stimulus of reserve-money QE.
Unconventional Monetary Policy with a Trembling Hand

• UMP was an Advanced Markets’ response to the ineffectiveness of central banks’ interest rates to offset Liquidity Trap and prevent price deflation.

• However, money may not be a good substitute for financial assets that are impaired by Liquidity Crunch, and

• Furthermore, money may be subject to Liquidity Deflation.

• This helps to explain why the crisis symptoms are taken so long to subside.
HERE IS WHERE CENTRAL PROBLEM LIES!!

SAVING FLOW

SAFE LIQUID ASSETS

PRIVATE SECTOR INVESTMENT

, etc., LIQUIDITY TRAP
Where We are Now

• Deflation has not been defeated in EU and Japan.
• Total Factor Productivity is flat across Advanced Markets.
• New unconventional monetary policy
  – will fail to spur growth unless credit flows are restored (unlikely in the Eurozone).
  – and, moreover, may provoke bubbles and volatility in EMs.
• Under those conditions, one cannot discount:
  – Protectionism
  – Currency Wars
EUROZONE
Eurozone. Broad Money/GDP

Source: World Bank
research.stlouisfed.org
Eurozone: Credit Flow Sudden Stop

Note: Credit Flow to Private Non-Financial Sector as share of GDP, %.
Eurozone: Harmonized Inflation

HICP – Overall index
Percentage change

Latest: -0.2 (-0.5)
Change from Jan 1999 to Feb 2016: -1.0
Min.: -0.7 (Jul 2009)
Max.: 4.1 (Jul 2008)
EUROZONE: Real GDP (in logs)
UNITED STATES
US. Velocity of M2

Source: Federal Reserve Bank of St. Louis
fred.stlouisfed.org
USA: Credit Flow Sudden Stop

Note: Credit Flow to Private Non-Financial Sector as share of GDP, %.
USA: Total Factor Productivity (in logs)
EMERGING MARKETS
Macroprudential Policy in EMs

- Financial conditions are highly unstable because of financial fragility and volatility in Advanced Markets.
- **Therefore, macroprudential policy is of the utmost importance.**
- **Banks’ wholesale funding** have played a major role in magnifying Sudden Stops. Hence, such funding **should be strictly regulated**.
- A serious problem is that bank regulation may cause **disintermediation**. Thus, **macropru may have to be extended to other credit granting institutions** (e.g., auto retailers).
INFLATION

• In contrast to reserve currencies, EM monies are only locally liquid and, therefore, are akin to Junk Bonds and prone to Currency Substitution.

• Thus, monetary aggregates alone may furnish a weak nominal anchor. Hence, to reinforce the nominal anchor it is advisable to consider,
  – Pegging to reserve currencies (Fear of Floating)
  – Pegging to a subset of goods (Inflation Targeting)
  – Addressing Credit Flow Sudden Stop issues.

• Moreover, for stopping inflation it is essential to ensure:
  – Credibility
  – Preventing the existence of widely different multiple-equilibrium solutions
Expectations Dominance:
An Example of Multiple Equilibrium Inflation Rates

• Suppose high inflation expectations.
• Thus, nominal interest would be high.
• If government succeeds in lowering inflation, real interest rate will be high.
• This may seriously disrupt fiscal and private-sector balances.
• And may lead to abandoning stabilization program. See Brazil 1980s. Calvo (1988).
• But, if inflation expectations are low, a low inflation equilibrium may be achieved, and the same stabilization plan would succeed!!
Exchange-Rate Based Stabilization

• ERBS have been widely studied and applied in the Southern Cone; e.g., Kiguel and Liviatan (1994).
• Lack of credibility is costly but in the short run it is associated with:
  – overheating
  – accumulation of reserve currencies (International Reserves)
• Hence,
  – ERBS doesn’t necessarily call for an initial large stock of International Reserves,
  – and overheating helps to enhance ERBS popular support, even though the program may not be sustainable in the medium run.
Floating XRates in EMs

Stabilization without full credibility is associated with
• unemployment,
• currency real appreciation.
Moreover, using interest rate as an anchor may make things very confusing under imperfect credibility – even though costless stabilization would be achieved with full credibility!
• Confusion may stimulate Time Inconsistency.
Infl Target with $i$ – Low Credibility

**Variables**

- $i = $ policy nominal interest rate
- $\rho = $ international interest rate
- $E = $ nominal exchange rate
- $\varepsilon = \dot{E}/E = $ rate of devaluation
- $e = $ real exchange rate
- $\pi = $ inflation home goods
- $\Pi^{L/H} = $ Low/High inflation target
- $\overline{h} = $ inelastic supply of home goods
- $c = C(e, i - \pi), \text{ home-goods demand}$

$i = \varepsilon + \rho, \text{ interest rate parity}$

$\dot{\pi} = \overline{h} - c, \text{ Calvo staggered prices}$

$i = \Pi + \theta(\pi - \Pi) + \rho, \theta > 1, \text{ Taylor rule}$

**Reduced Form** (initially)

$$\dot{e}/e = \varepsilon - \pi = (\theta - 1)(\pi - \Pi^{L})$$

$$\dot{\pi} = \overline{h} - C(e, (\theta - 1)(\pi - \Pi^{L}))$$
unemployment, currency appreciation and rising inflation

Source: Calvo, NBER WP 13177, June 2007.
CONCLUSIONS

• The actual global context leave few degrees of freedom for EM monetary policy.

• There is no well-defined global monetary system, and “beggar-thy-neighbor” policies in Advanced Markets cannot be discounted.

• Credibility is central but it also depends on external factors that can be unruly.

• Floating XRates may give exacerbate the problem of Time Inconsistency.

• Financial regulation must take center stage.
STOPPING INFLATION IN A FRAGILE GLOBAL CONTEXT

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BONUS MATERIAL
Conventional Macro Models

• Conventional macro models were designed mostly of deal with price stickiness, not with financial disorder like Credit Sudden Stop.

• This explains the central attention paid to Money and Interest Rate,

• It is only now that macroprudential regulation has been brought to the fore.
Bare-Bones New Keynesian Model

- Fisher equation:
  \[ r = i - \pi \]

- Taylor Rule:
  \[ i = \theta \pi + \gamma c, \theta > 1, \gamma > 0 \]

- Euler equation:
  \[
  \begin{cases}
  \frac{\dot{c}}{c} = r - \rho = (\theta - 1)\pi + \gamma c - \rho \\
  \dot{\pi} = \bar{y} - c
  \end{cases}
  \]

(Where is money?)

Dynamic System: \( c \) and \( \pi \) can jump at \( t = 0 \). All characteristic roots are positive. One can show that, if unstable paths are ruled out, equilibrium is unique.
MILTON FRIEDMAN DICTUM

THE USUAL QUOTE:

INFLATION IS ALWAYS AND EVERYWHERE A MONETARY PHENOMENON

THE COMPLETE STATEMENT ADDS:

IN THE SENSE THAT IT IS AND CAN BE PRODUCED ONLY BY A MORE RAPID INCREASE IN THE QUANTITY OF MONEY THAN IN OUTPUT
EEUU: Inflación y Crecimiento de M1/PIB real
Chile: Inflación y Crecimiento de M1/PIB real

Friedman dictum is at best a necessary condition.
FRIEDMAN REPHRASE

FOR HIGH INFLATION IT IS NECESSARY THAT MONEY GROWS FASTER THAN REAL OUTPUT

THIS IS NOT INCONSISTENT WITH CASES IN WHICH HIGH MONEY GROWTH RESULTS IN LOW INFLATION.
JAPAN: The Pluses of Being Credible
Argentina: Credit Flow Sudden Stop

ARGENTINA: Growth Rate of Total Loans y/y

Source: BCRA
A Few References

