Sudden Stops

"It is not speed that kills, it is the sudden stop"

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Agenda

- Definition of Sudden Stops
- Historical Examples of Sudden Stops
- Economic Analysis of the Effects of Sudden Stops
- Policy Implications

What is a Sudden Stop?

- A sudden stop in capital flows is defined as a sudden slowdown in private capital inflows into emerging market economies, and a corresponding sharp reversal from large current account deficits into smaller deficits or small surpluses
- A sudden stop can be triggered either by foreign investors when they reduce or stop capital inflows into an economy, and/or by domestic residents when they pull their money out of the domestic economy, resulting in capital outflows.

Quantitative Definition of Sudden Stops

- Calvo defined it as a phase that meets the following conditions
  - It contains at least one observation where the year-on-year fall in capital flows lies at least two standard deviations below its sample mean
  - The Sudden Stop phase ends once the annual change in capital flows exceeds one standard deviation below its sample mean.
- Edward defined it as an abrupt and major reduction in capital inflows to a country that up to that time had been receiving large volumes of foreign capital.
  - The country in question must have received an inflow of capital larger than its region's third quartile during the previous two years prior to the "sudden stop."
  - Net capital inflows must have declined by at least 5% of GDP in one year

Extended Definition of Sudden Stops

- Systemic Sudden Stops
  - Calvo et al (2004) define systemic sudden stop events as episodes with mild and large output collapses that coincide with large spikes in the aggregate emerging market bond index (EMBI)spread and large reversals in capital flows.
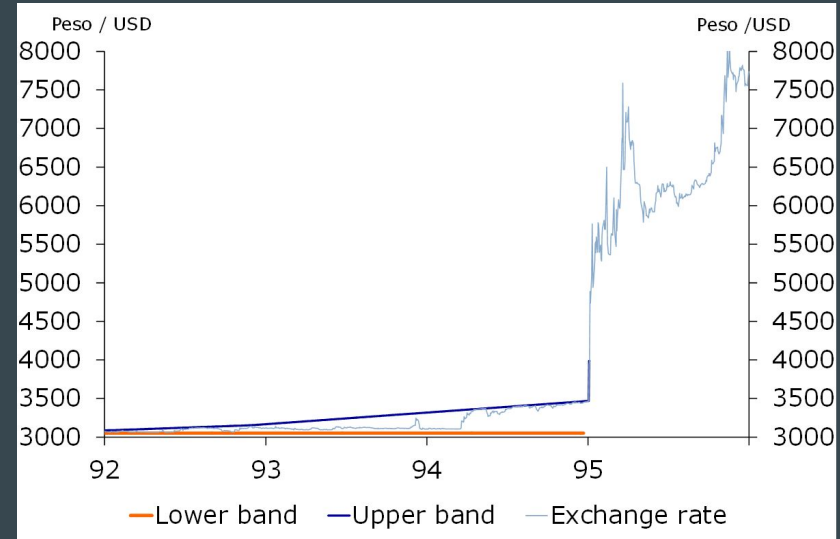
Taxonomy of Sudden Stops
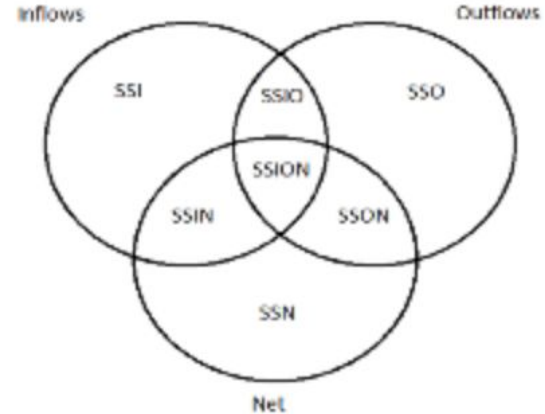
Examples of Sudden Stops

- 1982 Mexico Crisis
- 1992 EMS attacks
- 1994 Mexican devaluation
- 1997/98 Asian Crisis
- 1998 Russian default
- 1999 devaluation of the Brazilian real
- 2008 global financial crisis

1994 Mexican Peso Crisis

- Sparked by the Mexican government's sudden devaluation of the peso against the U.S. dollar in December 1994
- Devaluing the peso after previous promises not to do so led to sudden stops
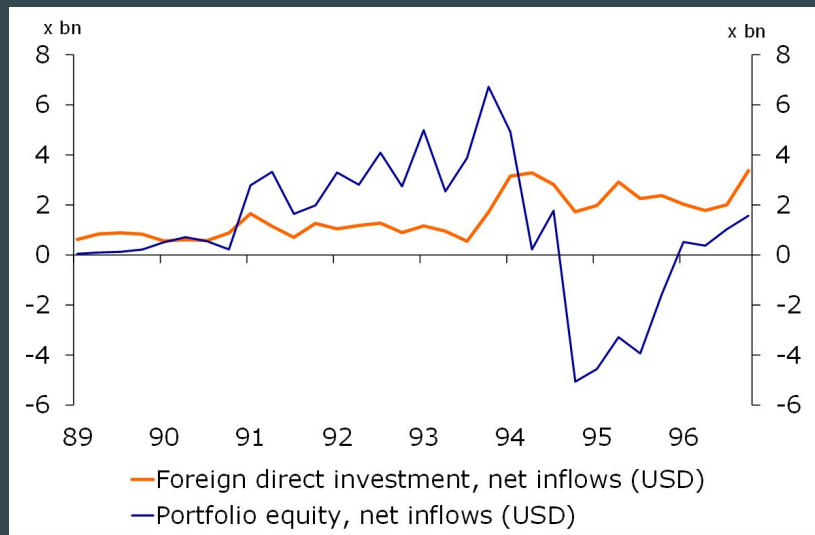- The sudden stop leads to currency crisis in Mexico

Peso / USD — Peso /USD

Lower band — Upper band — Exchange rate

1994 Mexican Peso Crisis

Foreign Reserves
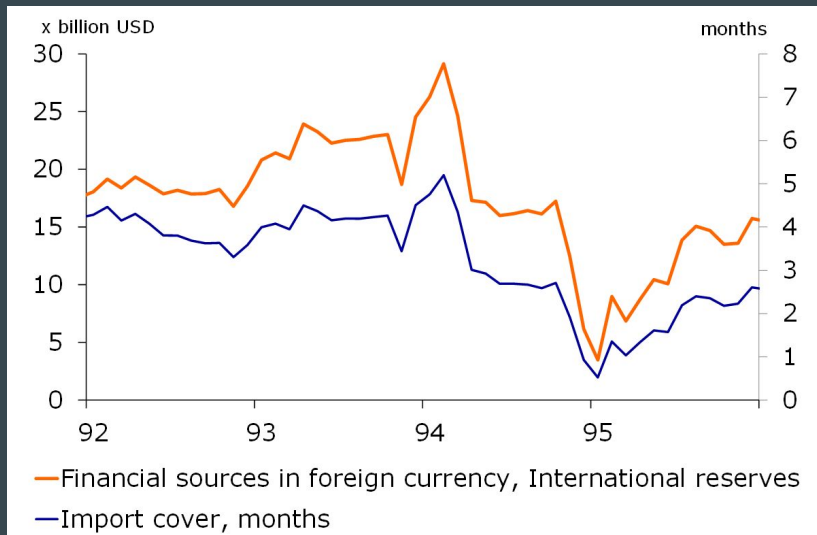
Financial Account in Mexico

Calvo's Simple Economic Model for Sudden Stops

- First model explaining mechanism of sudden stops
- Explains basic mechanisms that sudden stops can trigger a crisis
- Can be applied in non-monetary and monetary economy

Effects of a Capital Inflows Slowdown: The Non-Monetary Economy

- KI=CAD
  - KI: capital inflow
  - CAD: current account Deficit
- CAD=Z-GNP=Z*-GDP*-NFTA
  - Z: Aggregate Demand
  - GNP: Gross National Product
  - Z*: Demand for Tradables
  - GDP*: Gross Domestic Product of Tradables
  - NFTA: Net Factor Transfers Abroad

Insights

- KI sudden stop implies=> Z* lower => Z-Z* lower =>real exchange rate I* higher
- The larger is the share of consumption in total expenditure Z and, in particular, on Z^*, the more pronounced will be the damage to the real economy on from a fall in CAD.
- The shorter is the residual maturity structure of a country's debt, the more fertile will be the ground for a sudden stop crisis
- Sudden stop may come to be true through a self-fulfilling prophesy mechanism

Self-fulfilling Prophesy Mechanism

- The capital inflows slowdown could drastically lower the "average and marginal productivity of physical capital" as a result of socially-costly bankruptcy battles following sharp and largely unexpected changes in relative prices
- Crisis that lead to bankruptcies destroy specific human capitals

Effects of a Capital Inflows Slowdown: The Monetary Economy

- KI=CAD+RA
  - RA: Accumulation of International Reserves per unit of time
- R+NDA=H
  - R: International Reserves
  - NDA: Net Domestic Assets
  - H: High-powered Money

Insights

- If KI falls
  - Case 1: stick to reserve, then same as the non-monetary economy
  - Case2: domestic interest rate increases, NDA increases to cushion the rate rise ->H increases -> devaluation-> release RA
- If the country is committed to a fixed exchange rate, this mechanism makes the central bank vulnerable to a speculative attack. If the country is committed to a fixed exchange rate, the public will lower their demand for assets, and try to convert dollar-denominated liabilities into domestic currency. The rush out of domestic currency could exacerbate the fall in capital.

Conclusions from the Model

- Sudden Stops result in bankruptcies, and destruction of human capital and local credit channels.
- Large current account deficits are dangerous independently on how they are financed.
- Short-term financing may add to those risks to the extent that they contribute to generate larger slowdowns in capital inflows.

Domestic Factors that Influence effects of Sudden Stops

- Openness
  - Essential link in the chain mapping an external liquidity shock to a financial crisis and an economic collapse


Figure 3. Probability of a Sudden Stop for Different Values of Portfolio Integration
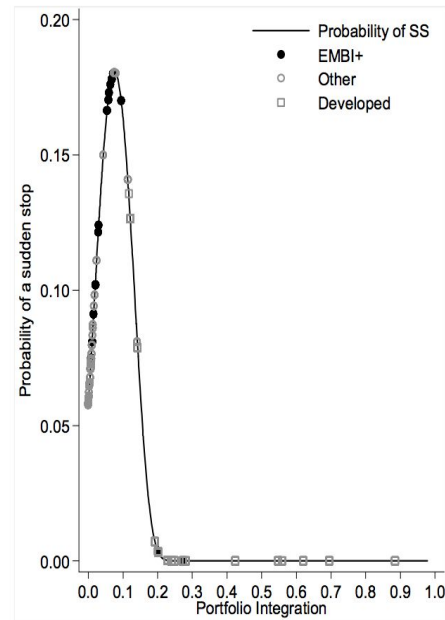
Domestic Factors that Influence effects of Sudden Stops

- Liability Dollarization
  - High dollarization of private debt implied large financial mismatches in the balance sheets

Figure 2. Probability of a Sudden Stop for Different Values of ω and Domestic Liability Dollarization in the Average Country
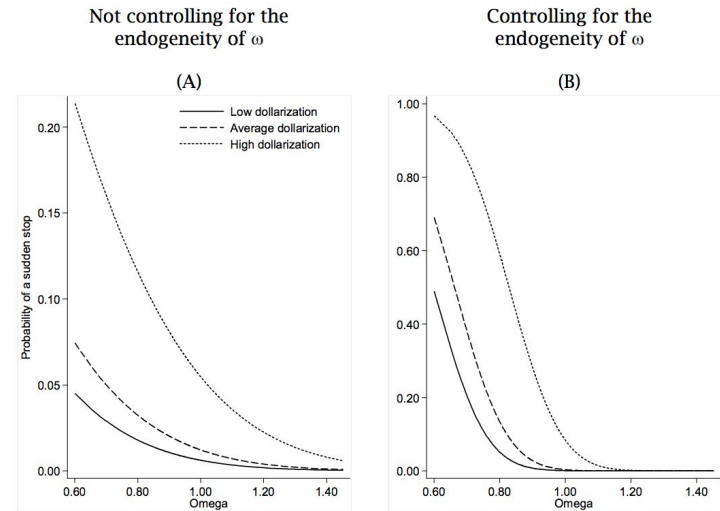
Policy Response to Sudden Stops

- Attention to Financial Sector
- Self Insurance
- Capital Controls.
- Exchange Rate Regime.
- De-dollarization
- Trade Policy
- To react to sudden stops, governments are advised to implement:
  - Monetary policy aimed at price stability and a fiscal policy that does not further constrain aggregate demand in the short run, and moves towards a balanced budget

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