7th session

27th March 2014

Financial Turmoil

- Financial crises: banking and/or currency (balance of payments), sovereign debt, hyperinflation.

- ## Banking Crises
  - Collapse of financial institutions. Systemic banking failures.
  - Situations of panic, with too many withdrawals of deposits.
  - Massive governmental intervention.

- Localized *vs* Systemic Crises
  - Demirgüç-Kunt & Detragiache (1997) – at least one of the following conditions should be in order for an episode of distress to be considered a systemic banking crisis:
    - Ratio "non-performing assets / total assets"> 10%
    - Costs of rescue operations by the authorities> 2% GDP
    - Banking-problems resulted in large-scale nationalization of institutions.
    - Extensive bank runs or freezing of bank deposits or generalized deposit guarantees were enacted.

- ## Currency Crises
- When there is massive sale of a currency (speculative attack).
  - In fixed exchange rates, sale → pressure to devaluation.
  - In floating exchange rates, sale, → larger depreciation.
  - Selling pressure indicators in fixed exchange rate regimes:
    - loss of reserves,
    - rise in short term interest rates
    - currency at a discount,
    - exchange rate depreciating in the black market.

Twin Crises

- Feedback mechanisms

Currency Crisis ⇨ Banking Crisis

- When bank's liabilities are mainly in foreign currency, but assets are mainly in domestic currency – CURRENCY MISMATCH

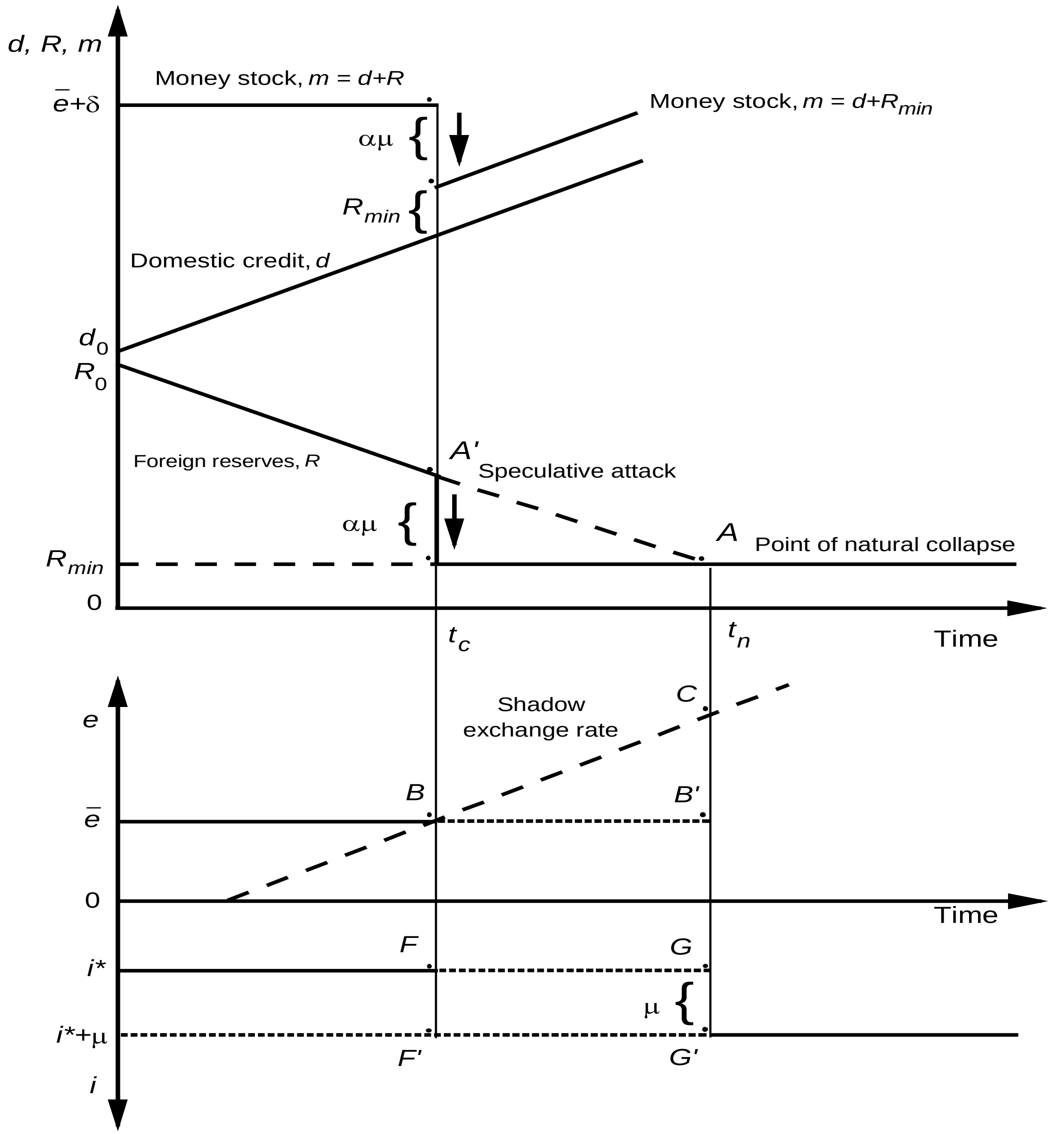
Banking Crisis ⇨ Currency Crisis

- The cost of addressing the consequences of a banking crisis (liquidation of insolvent banks), is borne by the public sector - worsening of the fiscal position - expectations of monetization of the fiscal deficit and exchange rate depreciation

Models of crises

- First generation
  - Crises are viewed as the unavoidable result of unsustainable policies or fundamental imbalances.
    - An expansionary monetary policy (ex. monetization of budget deficits) with a fixed exchange rate – depletion of monetary reserves – increased demand for foreign currency.
    - A key insight of these models is that the exhaustion of reserves takes the form of a sudden depletion, instead of a gradual running down of the stock, as could be expected. Even a Central Bank with a large volume of foreign assets is not safe.

Figure 7.1
The "Conventional" Model of an Exchange Rate Crisis



Source: Adapted from Agénor and Flood (1994, p. 230).

- **Second generation**
  - Crises are not the unavoidable result of inconsistent policies – CREDIBILITY
  - They result from the interaction between investors' expectations and actual policy outcomes. Investors know that there are conditions under which the authorities will abandon the peg.
  - Different outcomes can occur depending on the agents' expectations – indeterminacy, multiple equilibria – models can rationalize large market movements, even in the absence of corresponding changes in fundamentals.
  - A currency crisis can occur because of a shift in expectations toward the devaluation outcome. Such a shift suddenly makes the defense of the peg excessively costly.

Third generation

- Twin crises

- Also possible, an observed fiscal balance with shocks to the private sector that threaten banks or firms profitability, and that require a bailout of the troubled institutions – agentes anticipate na expansionary monetary policy in the future.

- Currency crises leading to Banking crises:

  Devaluation of the currency → banks solvency problems when they lend to locals but borrow abroad.

- Banking crises leading to Currency crises:

  Bail-out of banks or activation of deposit insurance → financing of expenses (monetization or rising debt)

Early Warning Systems

Precise definition of Crisis + Mechanism for generating Predictions

- Need to distinguish crises from other movements in exchange rates and reserves.
- If the purpose is to predict only successful attacks – definition of a currency crisis as a sufficiently large change in the exchange rate over a short period of time.
- If the purpose is to predict failed as well as successful attacks – combination of exchange rate changes and reserves changes - Crisis Index

- **Exchange market pressure** = weighted average of the rate of depreciation of the local currency, the monthly percentage changes in international reserves, and the monthly change in the interest rate.
- Currency crisis occur within some time after the measure of the exchange market pressure exceeds a certain threshold.

  Kaminsky, Lizondo, Reinhart (1998):

  Crisis: *index 3 standard-deviations above the average*

  - The index increases with depreciation, loss of reserves and rise in interest rates.

- *Assessing Financial Vulnerability: An Early Warning System for Emerging Economies* by Morris Goldstein, Graciela Kaminsky, and Carmen Reinhart, 2000

- 'Leading indicators' of crises :
  - Appreciation of the real exchange rate (relative to trend).
  - Decline in equity prices.
  - Fall in exports.
  - High ratio of broad money (M2) to international reserves
  - Recession.
  - Large current-account deficit relative to investment.

- <u>Practical Issues</u>
  - How far in advance the prediction is to be made.
  - What set of historical data and what number of countries to use: too large or too small…
  - What variables to include: some potential interesting variables are difficult to measure and/or are not easily comparable across time and countries (e.g. health of financial systems).

- Ukraine – contagion risks

http://www.theglobeandmail.com/report-on-business/video/video-contagion-risks-from-europes-new-battlefield/article16994768/

CONTAGION

Kaminsky & Reinhart (2000) On crises, contagion, and confusion