SWEDISH HOUSE OF FINANCE

NOBEL SYMPOSIA

Nobel Symposium "Money and Banking"

https://www.houseoffinance.se/nobel-symposium

May 26-28, 2018
Clarion Hotel Sign, Stockholm

RIKSBANKENS JUBILEUMSFOND
THE SWEDISH FOUNDATION FOR HUMANITIES AND SOCIAL SCIENCES

International Financial Crises

Hélène Rey

London Business School & NBER & CEPR

2018

Nobel Symposium on Money and Banking

Anatomy of International Financial Crises

- Impressive historical description of international financial crises.
- Domestic and external financial liberalization play a key role: deregulation, financial flows, monetary policy (Diaz Alejandro (1985), Reinhart and Rogoff (2009)).
- Financial crises are hard to predict. Sequencing tends to be: private debt; banking crisis; sovereign debt crisis. Not always.
- Crises involving a banking meltdown tend to be more serious. (Kaminsky and Reinhart (1999))

Anatomy of International Financial Crises

- Crises tend to happen around the same time in different countries (waves). Role of "capital flow bonanzas".
- Push and pull factors for capital flows (Calvo, Leiderman and Reinhart (1996)).
- Fear of floating (Calvo and Reinhart (2002)). Important for the transmission of shocks. Discussion about Dilemma versus Trilemma (Rey (2013)).
- Interactions between trade liberalization and financial liberalization (Martin and Rey (2006), Caballero and Antras (2009))

Waves of crises

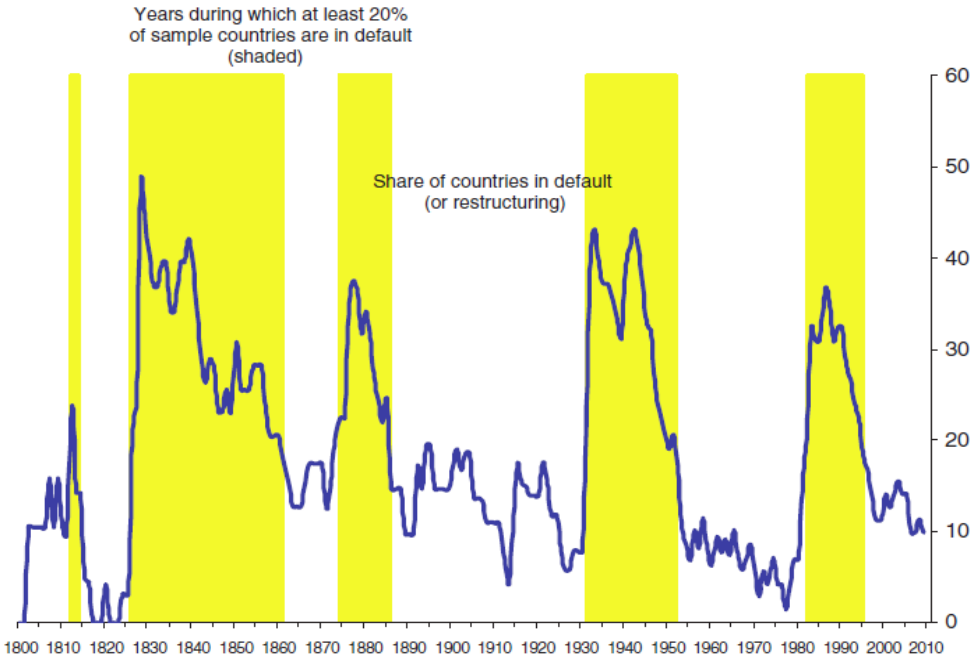


FIGURE 2. GLOBAL SOVEREIGN EXTERNAL DEFAULT CYCLES: 1800–2009
(*share of countries in default or restructuring*)

Figure: Reinhart and Rogoff (2009).

Why we should be thinking about Financial Cycles

- Crises are generally "booms gone bust" (Reinhart and Rogoff (2009) and Schularick and Taylor (2012)). To understand crises we need to understand the entire cycle.
- Risk build up phase where credit to GDP goes up, real exchange rate appreciates, leverage of intermediaries is high. (Gourinchas and Obstfeld (2012), Bruno and Shin (2015), Mian, Sufi and Verner (2018)). Basel 3.
- Risk premium and spreads are low during the risk build up phase. (Krishnamurthy and Muir (2018)).
- Which booms turn into busts is hard to predict.
- Risk premium high after financial crises not after wars despite smaller decline in consumption (Muir 2018))
- These are all very important characteristics.

Global Financial Cycles

- Booms and busts tend to be global.
- Global financial cycles: Fluctuations in financial activity (risk taking, credit creation, asset prices, gross capital flows, spreads, leverage) on a global scale (Rey (2013)),
  - Findings of important co-movements of gross flows, credit creation, leverage across main currency areas, of one global factor in risk asset prices.
- Origins of Global Financial Cycles: US monetary policy is one important factor (Miranda-Agrippino and Rey (2015)). One of the drivers of the global "risk-on risk-off" phenomenon (Bernanke (2016)).
  - Increasing body of evidence highlighting importance of Dollar and US monetary policy beyond US borders.

US monetary policy: Effect on Global Credit, with and without US

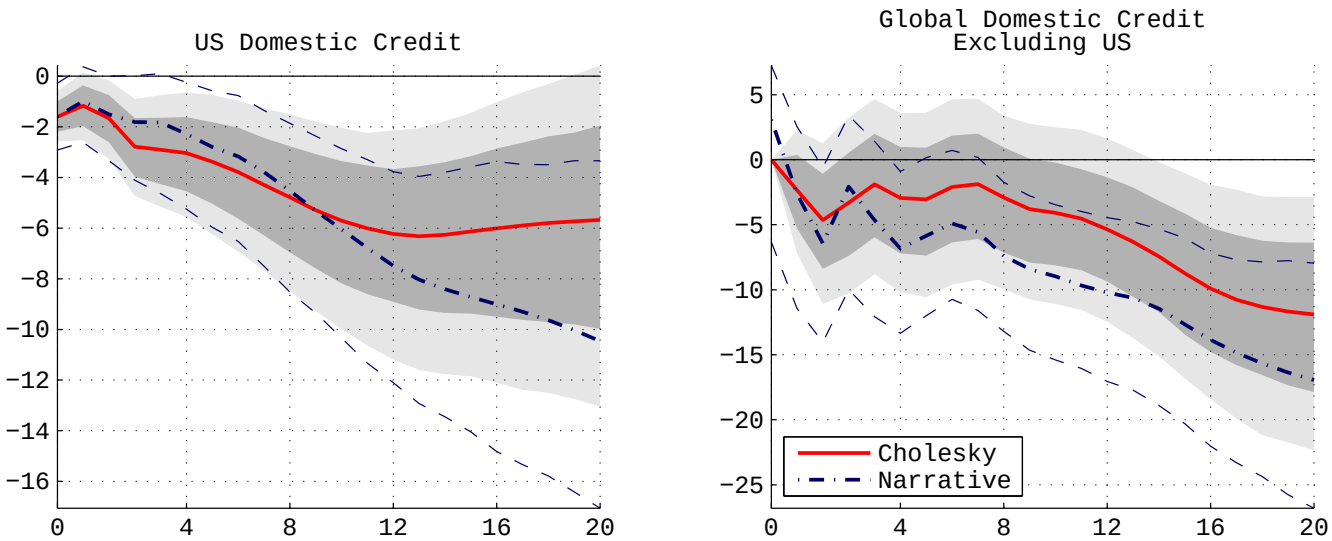


Figure: Response of Global Credit (% points) to a monetary policy shock inducing a 100bp increase in the Effective Fed Funds Rate. Source: Miranda-Agrippino and Rey (2015).

US monetary policy: Banks Leverage in the US, Euro area, UK (GSIBs)

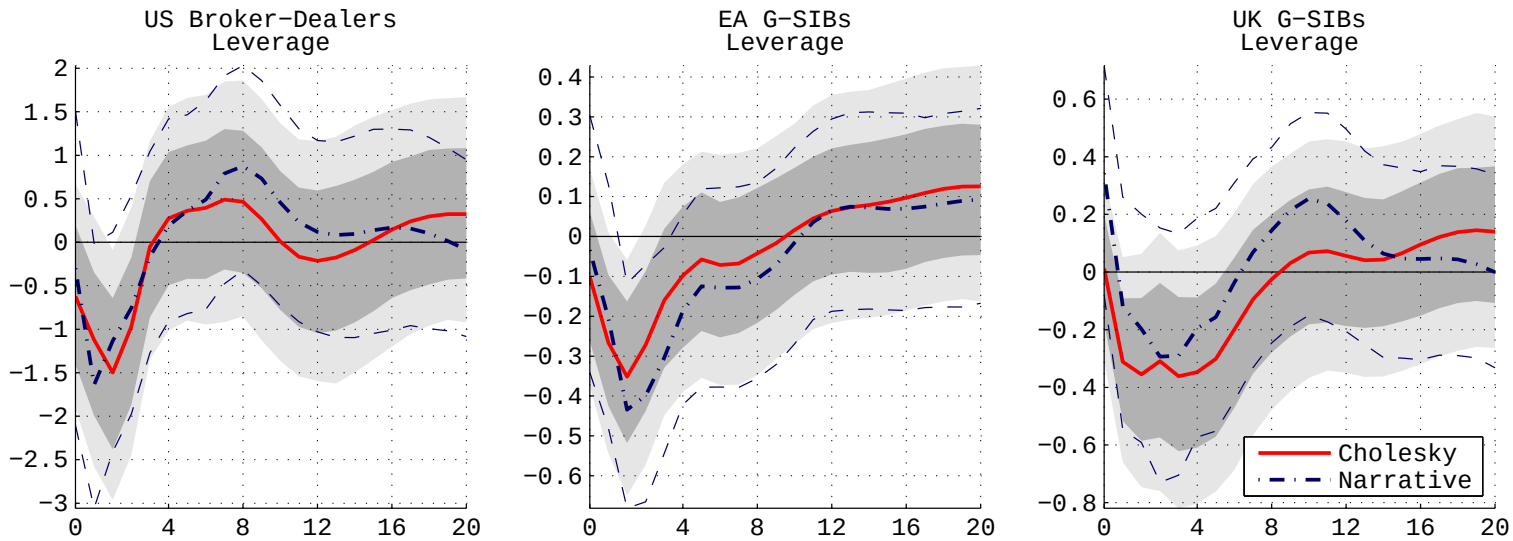


Figure: Response of Banking Sector Leverage (% points) to a monetary policy shock inducing a 100bp increase in the Effective Fed Funds Rate. Source: Miranda-Agrippino and Rey (2015).

Global financial cycles and Low real rates

- Global Financial Cycles help us understand historical movements in real rates (Gourinchas and Rey (2017)).
  - 'Irrational exuberance' in asset prices ('Roaring 20s' and the 'Exuberant 2000s') leads to fast growing financial wealth and risk taking.
  - Large financial crises (in 1929 and in 2008) lead to deleveraging (increased savings) for an extended period and to low real rates.

Theory of Financial Crises

- Risk centric global macroeconomics. Elegant and consistent way of understanding the world.
- Supply of safe assets is asymmetric: low in fast growing emerging markets. There is a "shortage" of safe assets (trend -world more emerging market like) and it is particularly acute during crisis times (cyclical -risk-on risk-off).
- "Shortage of safe assets" has a lot of explanatory power:
  - Direction of capital flows– global imbalances (Caballero, Farhi and Gourinchas (2008))
  - Emergence of bubbles in emerging markets hence financial vulnerability (Caballero Krishnamurthy (2006))
  - Real rates trending down as emerging markets demand for safe assets grows
  - During crisis, flight to safety: risk premium goes up.
  - Safety trap and currency wars (Caballero Farhi (2017); Caballero Farhi Gourinchas (2016))

Theory of Financial Crises: Remarks

- Minsky type world: a recession happens because of a flight to quality, as people try to shift their portfolios in the direction of safe assets. Eliminating the excess demand for safe assets (expanding supply via guarantees) will help.
- Different from Keynes type world: a recession happens when there is an excess demand for bonds–to transfer purchasing power from the present into the future (low natural rate of interest). Policy: reducing the market rate of interest (monetary policy) or raising the natural rate of interest (fiscal policy) will help.
- Different from Friedman type world: a recession is the result of an excess demand for money. The central bank should boost the money stock. Eliminating the excess demand for money brings the goods and labor markets into balance and out of excess supply.
- Connections with disequilibrium literature - Barro and Grossman (1971), Muellbauer and Portes (1978). (DeLong (2010))

Theory of Financial Crises: Remarks

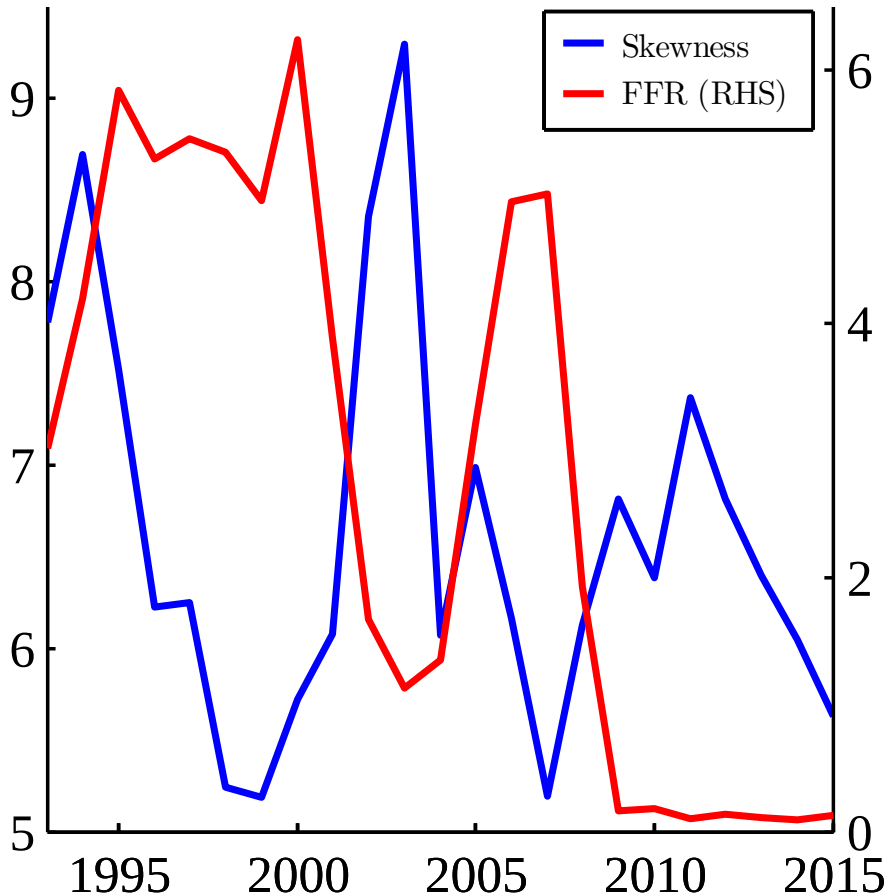
- Emphasis of many models in the literature is on the existence of a pecuniary externality (usually the friction takes the form of a collateral constraint). These models explain very well the bust phase of the cycle (amplification). But we still need to work on:
- The risk build up. Overinvestment phase of the cycle.
- Fluctuations in credit supply seem to play a key role in the data.
- Empirically, large heterogeneity in credit creation behaviour over time and across intermediaries. Risk concentrates in certain balance sheets. Very important for financial vulnerability.
- Definition of systemic risk that reflects probability of default of financial intermediaries (rather than probability that a constraint binds)
- Asset pricing. Models struggle to match the pre-crisis (low) spread evidence: a prolonged period in which leverage rise comes with an increase in spreads and risk premia. Asset prices in the models reflect the increased risk of a crisis as fragility grows (unlike in the data).

Theory of Financial Cycles: Remarks

- Overinvestment in the risk build up phase: risk-shifting (Coimbra and Rey (2017)) or bounded rationality (Gennaioli, Shleifer and Vishny (2012)).
- Asset pricing. Heterogeneity in risk taking or optimism (Geanakoplos (2010), Coimbra and Rey (2017), Caballero Simsek (2018)). Composition of investors pool vary over the cycle so asset pricing can match the data better (low risk premium in boom, high risk premium in bust).
- Heterogeneity. Importance of distribution of macro risk across balance sheets. When distribution of leverage very positively skewed systemic risk is high. (Coimbra and Rey (2017))
- Definition of systemic risk that reflects probability of default of financial intermediaries (rather than probability that a constraint binds or notions of interconnectedness)

Cross-sectional skewness of leverage and cost of funds

All banks balance sheets in Bankscope data. Source: Coimbra and Rey (2017)



Conclusions and Research Agenda

- We should try to understand more fully the drivers and mechanism of the Financial Cycle and its global characteristics.

- Heterogeneity of investors, time variation in risk concentration on balance sheets are key to assess systemic risk.

- Important to understand better monetary policy and financial stability interactions (Gertler and Kiyotaki (2015), Farhi and Werning (2016), Coimbra and Rey (2017), Brunnermeier and Sannikov (2017), Svensson (2017), ...)