Endogenous money and Minsky's Financial Instability Hypothesis

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10th PKES Summer School, 8 June 2021

Structure

1. Endogenous money and post-Keynesian economics
2. Endogenous money and shadow banking
3. Minsky's Financial Instability Hypothesis (FIH)
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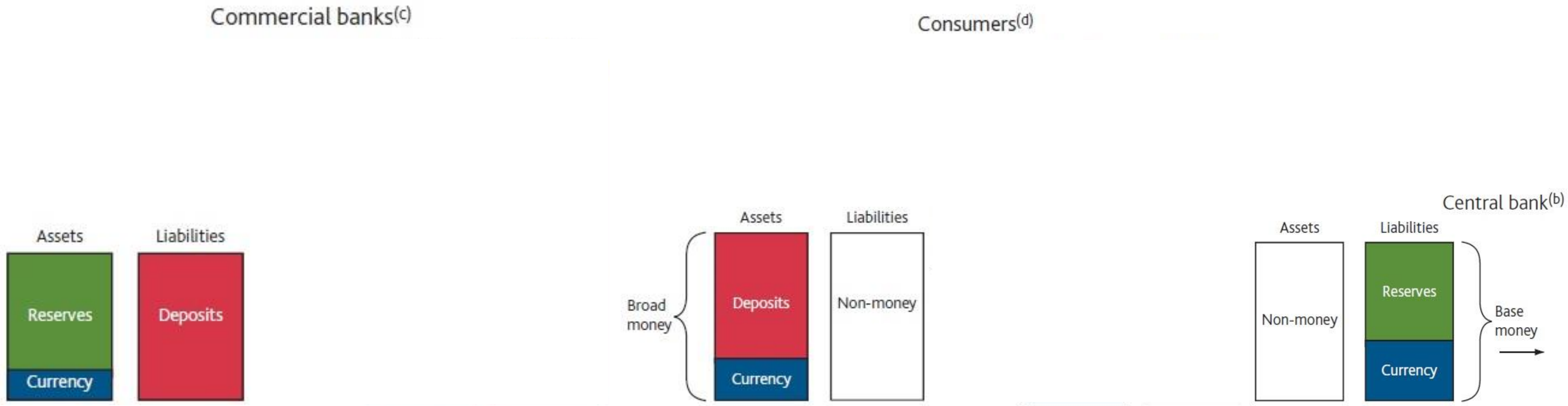
5. Conclusion

1. Endogenous money and post-Keynesian economics

- According to the traditional **mainstream** approach, banks are **financial intermediaries**: they receive deposits from households and provide loans using these deposits.
- This approach is reflected in the **multiplier model** of banking which can be found in the vast majority of textbooks.
- For many decades, **post-Keynesians** have called the money multiplier approach into question. They have argued that money is created endogenously and, therefore, banks do not need to wait for receiving deposits in order to provide loans (see e.g. Moore, 1988; Fontana, 2003).
- According to the **endogenous money approach**, loans are created ex nihilo as long as the borrower is creditworthy. Banks are not passive and their lending decisions can affect economic activity.
- Since the **Global Financial Crisis**, the view of post-Keynesians about the money creation process has been increasingly accepted in the academia and the central banking community (see e.g. Mc Leay et al., 2014; Jakab and Kumhof, 2019).

1. Endogenous money and post-Keynesian economics

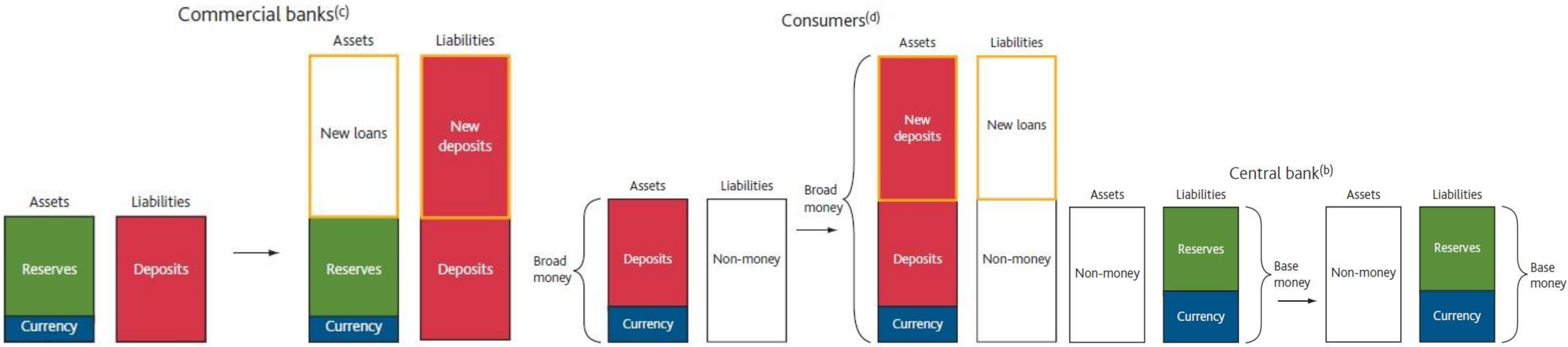
Suppose the following balance sheets of commercial banks, consumers and the central bank.



Source: McLeay et al (2014)

1. Endogenous money and post-Keynesian economics

New lending affects the balance sheets as follows:



Source: McLeay et al (2014)

1. Endogenous money and post-Keynesian economics

- At the **individual level**, however, the issue is a bit more complicated.
- Consider this hypothetical balance sheet of a bank:

Assets	Liabilities
Loans: 90	Deposits: 100
Reserves: 10	

If the bank decides to create new loans, the change on its balance sheet is as follows: →

Assets	Liabilities
Loans: 90 (+50)	Deposits: 100 (+50)
Reserves: 10	

- What will happen if the borrower of the bank buys goods and services from a depositor of another bank? Even if there are no reserves requirements, the bank needs to find £40.

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1. Endogenous money and post-Keynesian economics

- These are 3 ways via which the bank can address this issue:

1) Loans from other banks

Assets	Liabilities
Loans: 90 (+50)	Deposits: 100 (+50)
Reserves: 10 (+40)	Loans from other banks (+40)

2) Loans from the central bank

Assets	Liabilities
Loans: 90 (+50)	Deposits: 100 (+50)
Reserves: 10 (+40)	Loans from the central bank (+40)

3) Deposits of other banks

Assets	Liabilities
Loans: 90 (+50)	Deposits: 100 (+50+40)
Reserves: 10 (+40)	

- Therefore, even at the individual level, the lending behaviour of banks is not restricted by reserves.

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1. Endogenous money and post-Keynesian economics

The fact that banks face no **technical** limits to expanding their balance sheets instantaneously does not mean that banks do not face **economic** limits. Some economic limits:

1. Borrowers need to be willing to borrow
2. The amount of the collateral needs to be sufficient
3. Banks need to be willing to provide loans once financial regulation restrictions (that refer both to liquidity and solvency issues) and expected profitability have been taken into account

2. Endogenous money and shadow banking

- **Shadow banking** captures financial intermediaries that conduct maturity, credit and liquidity transformation without access to central bank liquidity or public sector credit guarantees.
- Shadow banking has given rise to the so-called **'originate-to-distribute' model of banking** in which the default risk on granted loans is disconnected from loan originators.
- The originate-to-distribute model comes in contrast to the traditional **'originate-to-hold' model**.
- A very important process conducted by the shadow banking is **securitisation**.
- Broadly speaking, securitisation is a technique that **transforms illiquid assets into liquid tradable instruments**.

2. Endogenous money and shadow banking

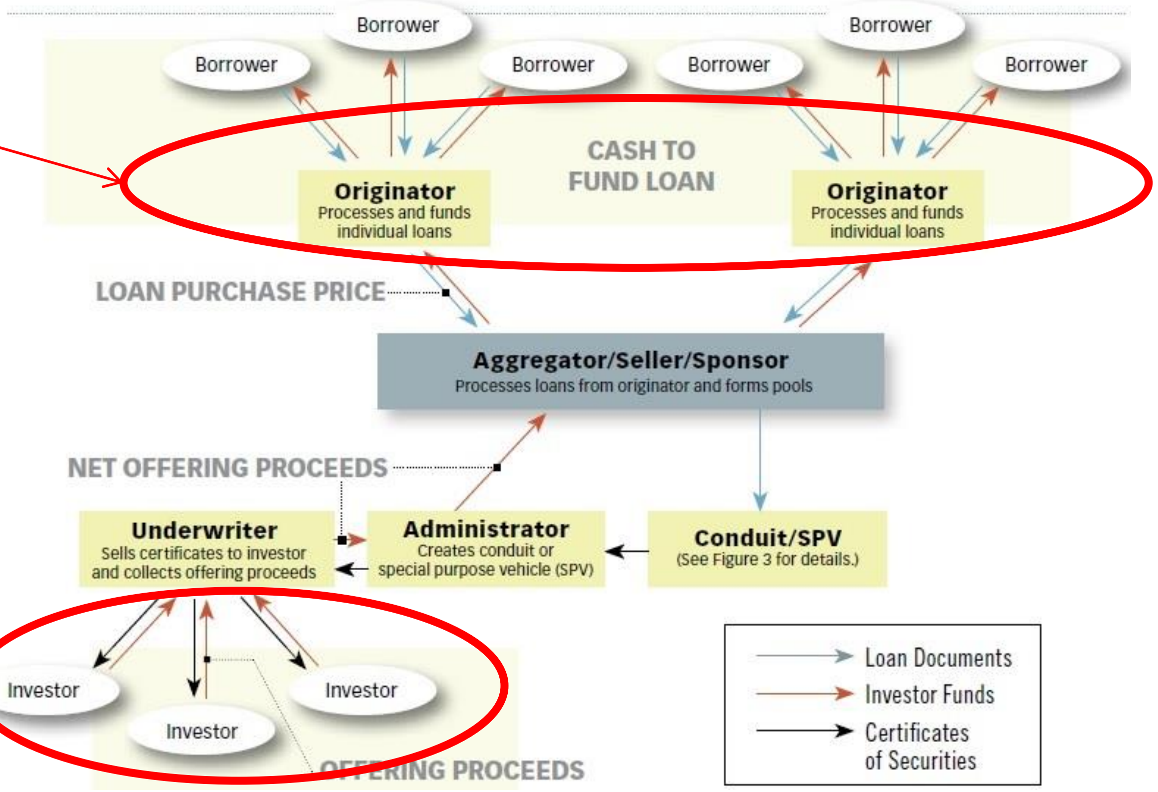
A simplified securitisation process

The securitisation process begins when **commercial banks** (the originators) decide to securitise a part of their loans.

The securities are bought by **investors**.

FIGURE 2

The Creation of Securities from Loans



Source: Noeth and Sengupta (2011)

2. Endogenous money and shadow banking

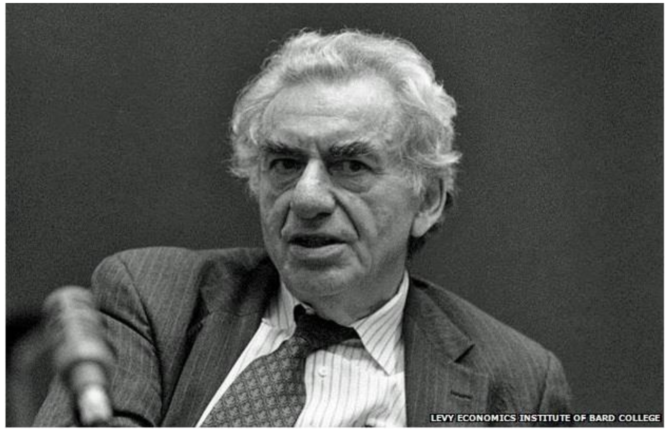
How can shadow banking affect the money creation process?

Citybank		Goldman Sachs (GS)		IBM		PIMCO hedge fund	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
	IBM deposit −100 GS deposit +100	Deposit +100	Repos +100	Deposit −100 Repos +100			
Securitized loans −100	IBM deposit −100	MBS +100	Repos +100	Deposit −100 Repos +100			
Securitized loans −100 New loan to PIMCO +100	IBM deposit −100 PIMCO deposit +100	MBS +100	Repos +100	Deposit −100 Repos +100		Deposit at City bank +100	Loan from City bank +100

Source: Lavoie (2014)

3. Minsky’s Financial Instability Hypothesis (FIH)

- The **Financial instability hypothesis (FIH)** was developed in the 1970s and 1980s by Hyman **Minsky**.
- It has been used by various economists to explain the **global financial crisis**.
- Minsky’s FIH can be summarised by the phrase ‘**stability is destabilising**’.
- There are two **reasons** why stability can be destabilising.
- The first one is linked to the way that financial agents form **expectations**. During periods of euphoria both firms and banks might be induced to participate in more debt contracts and increase their **financial fragility**.



Hyman Minsky (1919-1996)

Available at :
http://www.economist.com/blogs/freeexchange/2010/01/the_fed_discovers_hyman_minsky

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3. Minsky's Financial Instability Hypothesis (FIH)

- Minsky suggested a **distinction** between three finance regimes: (a) hedge (b) speculative and (c) Ponzi.
- A **hedge** unit is deemed viable and debt financing is not expected.
- A **speculative** economic unit is expected to take on new debt in order to cover (partially or totally) the amortisation of debt commitments.
- The **Ponzi** finance regime corresponds to the more financially fragile situation.
- The economy is more **financially fragile** the higher is the proportion of speculative and Ponzi firms.
- Financial fragility can lead to **financial instability** which is captured by an increase in defaults, a decline in asset prices and a fall in economic activity.
- The passage from hedge towards Ponzi finance regimes is driven primarily by **euphoric expectations**.

Charles Ponzi (1882-1949)

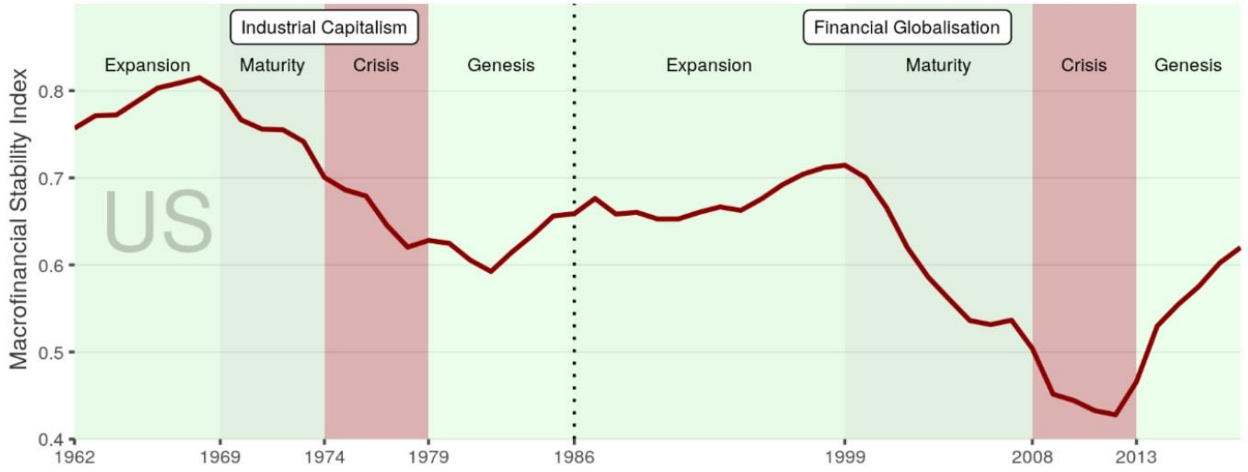
3. Minsky's Financial Instability Hypothesis (FIH)

- The second reason why stability is destabilising is the fact that stability brings about **institutional** and **policy changes** that might make the system more fragile.
- One evolution that Minsky paid particular attention to was the change in institutions that led to the emergence of the so-called **money managers,** who replaced **corporate managers** as the masters of private sector economic activity since the early 1980s.
- Wray (2011) has used the concept of **money manager capitalism (MMC)** to explain the processes that led to the Global Financial Crisis.

3. Minsky’s Financial Instability Hypothesis (FIH)

- Minsky used the term **‘thwarting mechanisms’** to describe those institutional structures and policies that can stabilise the inherently unstable macrofinancial system.
- Dafermos et al. (2020) argue that the endogenous change in the effectiveness of thwarting mechanisms can give rise to institutional supercycles.

Macrofinancial Stability Index (MSI) and supercycles, US, 1962-2018



Source: Dafermos, Gabor and Michell (2020)

3. Minsky's Financial Instability Hypothesis (FIH)

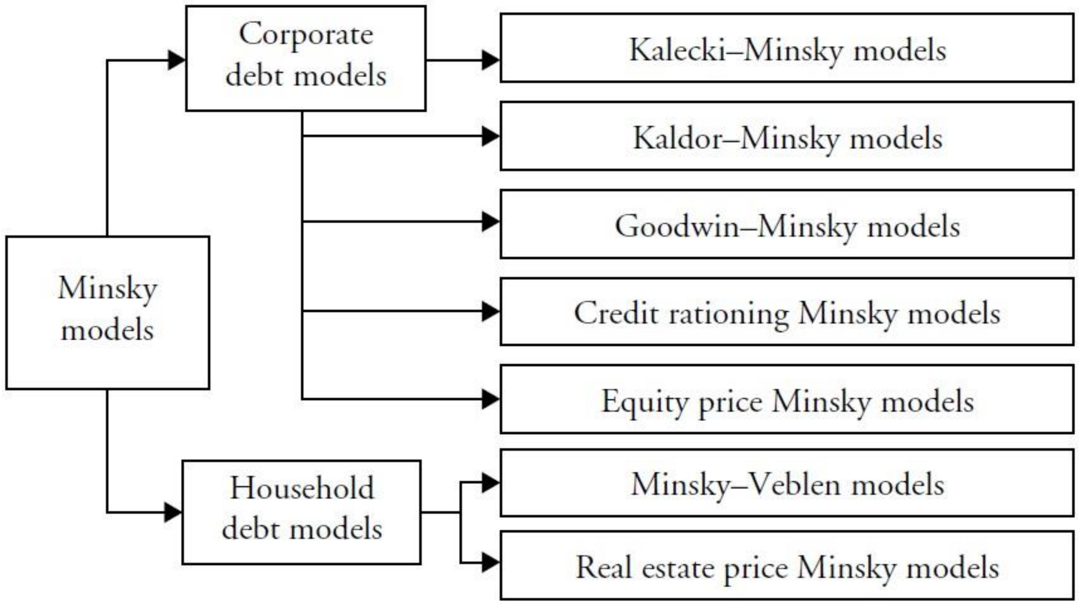
What are the key features in Minsky's FIH that make it unique compared to conventional approaches to financial crises?

- First, Minsky views the financial system as a network of **interconnected balance sheets** that interact dynamically (Gabor, 2020). Financial instability is the result of the endogenous interaction of balance sheets.
- Second, in Minsky's FIH **money is endogenous**.
- Third, Minsky's understanding of financial instability takes explicitly into account **evolutionary** changes that affect the stabilising role of institutions (see Wray, 2011; Argitis, 2019; Dafermos et al., 2020).

4. Modelling Minsky's FIH

- Almost all Minsky models are **closed** economy models (thus, they consist of households, firms and banks).
- **Debt** (household or corporate) plays a key role.
- **Asset prices** are important, but not in all models.
- Dynamic interaction between **goods** and **financial markets**.
- In most models **output** is **demand-determined**.
- Most of these models assume that **money is endogenous**.

A classification of Minsky models

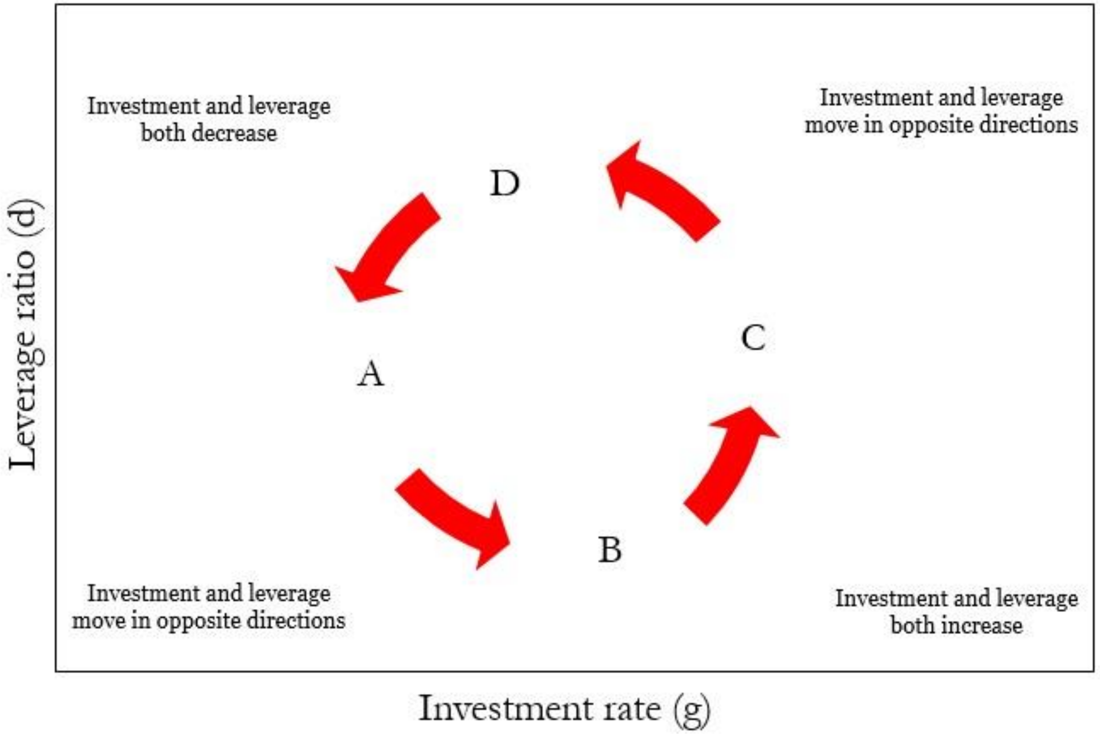


Source: Nikolaidi (2017); see also Nikolaidi and Stockhammer (2017)

4. Modelling Minsky's FIH

Kalecki-Minsky models

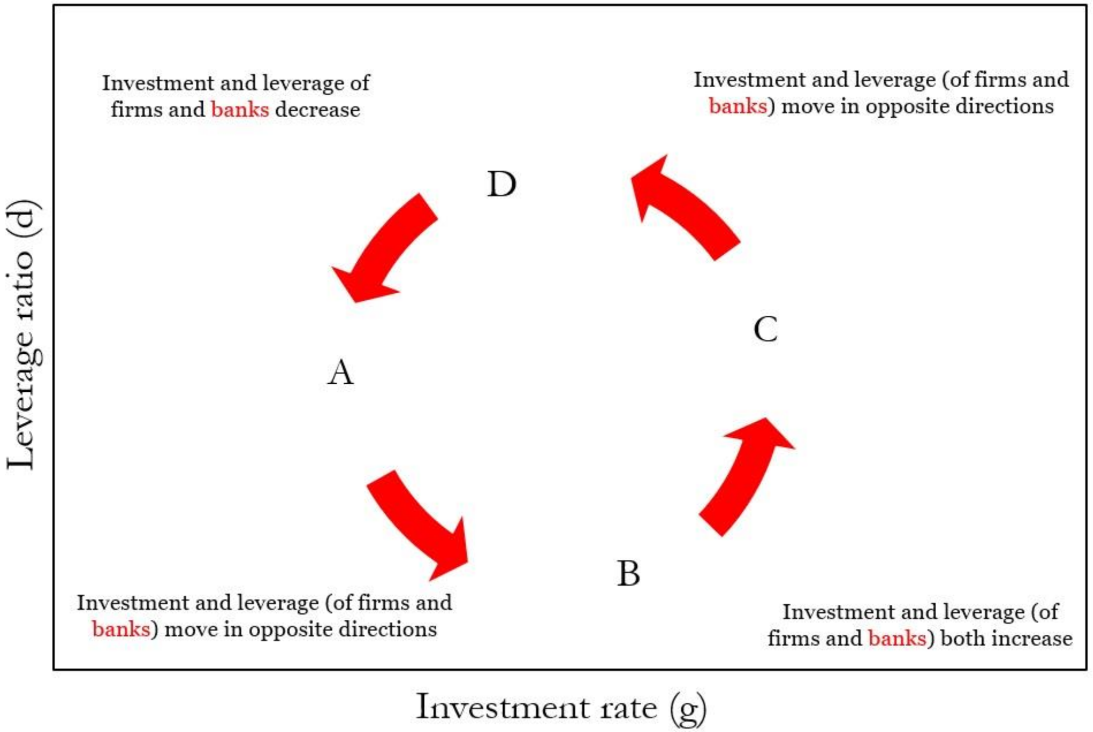
- The family of Kalecki-Minsky models includes Lima and Meirelles (2007), Charles (2008), Fazzari et al. (2008), Nishi (2012) and Di Guilmi and Carvalho (2017).
- The graph shows how a cycle can arise in the Kalecki-Minsky models.
- The **cycle** emerges from the interactions between the leverage ratio of firms and the investment rate.



4. Modelling Minsky’s FIH

Credit rationing Minsky models

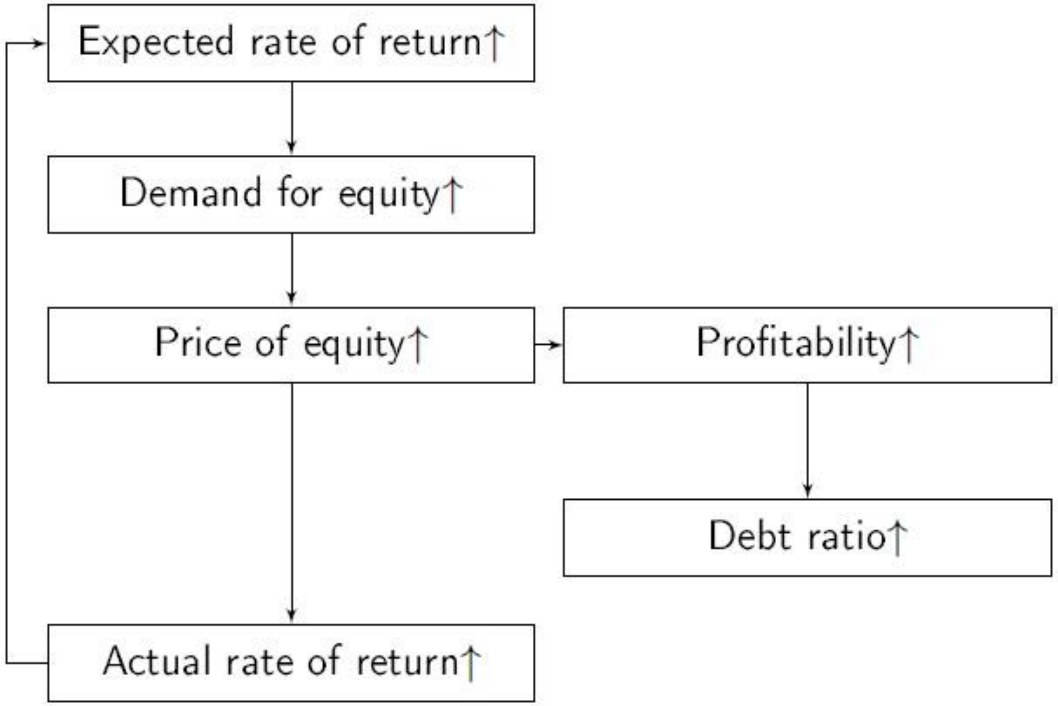
- According to Minsky (1986 [2008], p. 265) ‘…the higher leverage ratio of banks was part of the process that moved the economy toward financial fragility because it facilitated an increase in short-term borrowing (and in leverage) by bank customers: the leverage ratio of banks and the import of speculative and Ponzi financing in the economy are two sides of a coin’.
- Credit rationing Minsky models typically impose **quantity credit rationing** (see e.g. Ryoo, 2013a; Nikolaidi, 2014).



4. Modelling Minsky’s FIH

Equity price Minsky models

- The previous Minsky models do not incorporate financial asset prices.
- There are some Minskyan models (see e.g. Taylor and O’Connell, 1985; Ryoo, 2010, 2013b) that emphasise the **destabilising role of the equity market**.
- Asset price inflation allows debt to expand together with capital accumulation.
- **Investment** depends on profitability, interest rate and equity prices (Tobin’s q).



4. Modelling Minsky's FIH

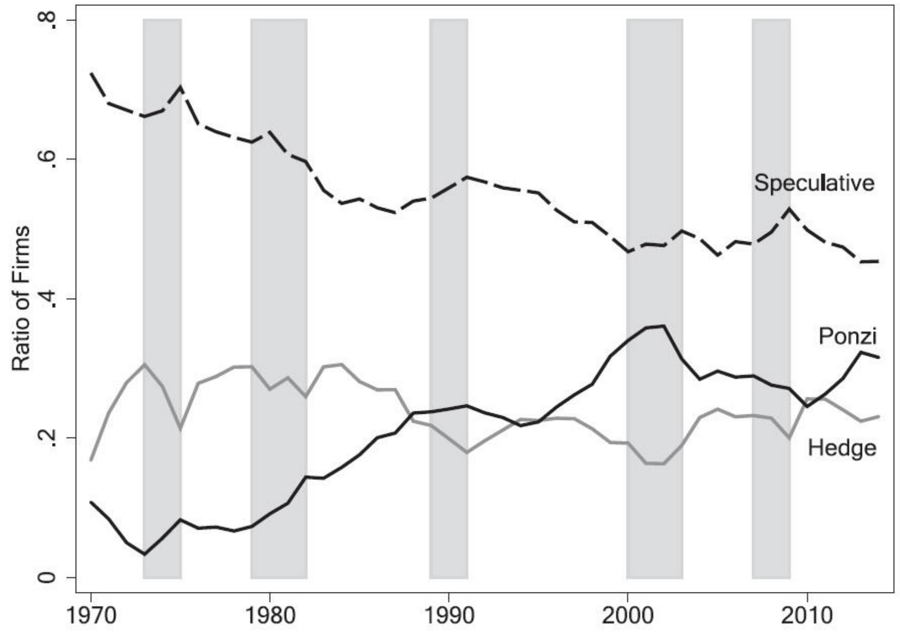
Mainstream Minsky-inspired models

- Since the financial crisis, aspects of Minsky's FIH have been incorporated into **DSGE-type models**.
- Eggertsson and Krugman (2012) develop a model in which debt relationships are driven by a **debt limit** that can change over time. A decline in this debt limit can trigger a debt deflation process.
- Bhattacharya et al. (2015) formalise how **investors** shift their portfolios in projects that are considered more risky when expectations are euphoric.
- However, these DSGE-type models suffer from some **drawbacks**. For example:
  1. They do **not** incorporate **endogenous money**.
  2. The **financial system** does **not** interact dynamically with the **macroeconomy**. For example, according to Gali (2018, p. 107):
     '…none of the extensions of the New Keynesian model proposed in recent years seem to capture an important aspect of most financial crises—namely, a gradual build-up of financial imbalances leading to an eventual "crash" characterized by defaults, sudden-stops of credit flows, asset price declines, and a large contraction in aggregate demand, output, and employment.'

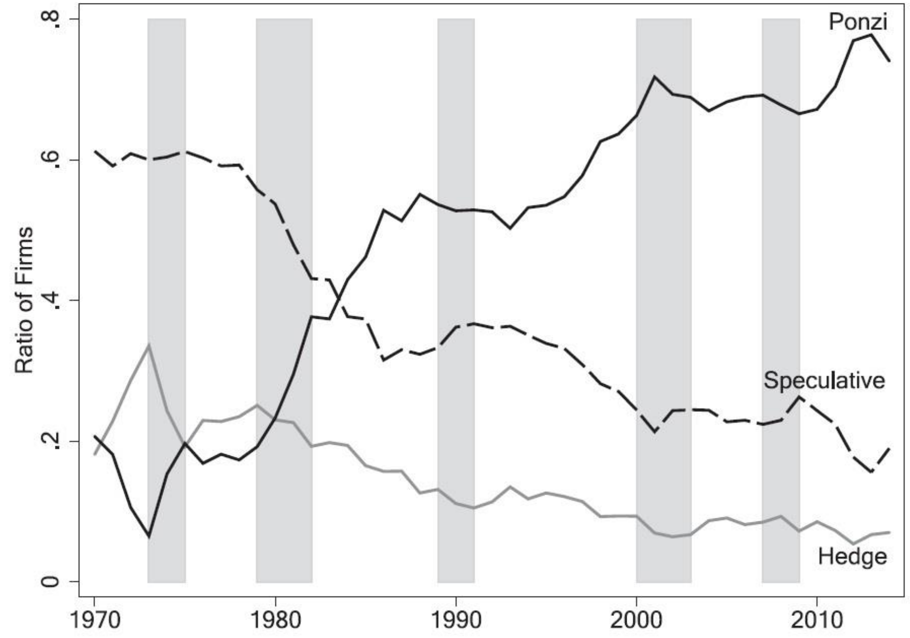
4. Modelling Minsky's FIH

- The pro-cyclicality or not of the leverage ratio of firms (or proxies of it) has been the subject of many **empirical studies**.
- There is some evidence for the existence of a counter-cyclical leverage ratio (see e.g. Lavoie and Seccareccia, 2001). This is the so-called **paradox of debt**.
- Similarly Davis et al. (2019) do not find a strong relationship between aggregate downturns and the probability of being Ponzi.

Incidence of hedge, speculative and Ponzi financing regimes. Full sample of firms; 1970-2014.



Incidence of hedge, speculative and Ponzi financing regimes. First quartile; 1970-2014.



Source: Davis et al. (2019)

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5. Conclusion

- Minsky's original writings focused on the destabilising role of **corporate debt**.
- However, Minsky's FIH has been extended to analyse the role of **household and external debt**.
- There is a need for more **empirical work** on the sources of financial fragility.
- More work needs to be done to explore the channels of transmission of financial fragility from **high-income** to **low-income economies**.
- In the era of climate change, Minskyan perspectives can illuminate the complex dimensions of **climate-induced financial instability**.

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CHANGE
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