Summer School
An Introduction to post-Keynesian Analysis

post-Keynesian theories of financial stability

Esteban Pérez Caldentey
ECLAC
esteban.perez@eclac.org
What is financial stability?

- There are several definitions of financial stability.
- All the definitions have common elements
  - The financial system provides the required liquidity for the needs of the economy.
  - The financial system maintains confidence in its different means of payment.
  - The financial system can manage risks and is resilient to shocks at the micro and macro levels.
  - The financial system is not volatile.
Why is it important?

- A market (capitalist) economy is organized through transactions and exchanges among the different agents in the economy (workers, entrepreneurs, investors, bankers) and most of the transactions take place through the financial system.

- Financial stability is a **public good**.
Why is it important?

- What happens when there is no financial stability? What does the historical evidence tell us? What have we learned?

**Developed countries:**
Investment growth rates in the five years before and after financial crises

*(Percentages)*

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<tr>
<th>Year</th>
<th>Precrisis</th>
<th>Poscrisis</th>
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<tr>
<td>1970-79</td>
<td>2.1%</td>
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<td>1980-89</td>
<td>3.7%</td>
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<td>1990-99</td>
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<td>2000-11</td>
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<td>-4.4%</td>
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Why is it important?

- What happens when there is no financial stability? What does the historical evidence tell us? What have we learned?

Rate of growth of investment and GDP growth for developed countries (2003-2015)
Why is it important?

It may also be maintained that capitalist societies are inequitable and inefficient. But the flaws of poverty, corruption, uneven distribution of amenities and private power, and monopoly-induced inefficiency (which can be summarized in the assertion that capitalism is unfair) are not inconsistent with the survival of a capitalist economic system. Distasteful as inequality and inefficiency may be, there is no scientific law or historical evidence that says that, to survive, an economic order must meet some standard of equity and efficiency (fairness). A capitalist economy cannot be maintained, however, if it oscillates between threats of an imminent collapse of asset values and employment and threats of accelerating inflation and rampant speculation, especially if the threats are sometimes realized. If the market mechanism is to function well, we must arrange to constrain the uncertainty due to business cycles so that the expectations that guide investment can reflect a vision of tranquil progress.

H. Minsky, Stabilizing an unstable economy, 1986. p. 6
And does anyone disagree?

- Not really.

- Some may argue (associated with an Austrian view of the cycle) that crises fulfill an important function because these make the capitalist system stronger.

  - This view is associated with liquidationism. Liquidationism viewed business cycle downturns as serving the Darwinian function of weeding out the weak enterprises least well adapted to a dynamic economy.

  - Crisis are good for the system.
How can we achieve financial stability?

- It all depends on the view one has about the financial system:
  
  - The role and functions it performs.
  - In other words **what does the financial system do?**
  
  - How does the financial system interacts with the rest of the economy?
  
  - Does the financial system complement “real activity.”
    - Does the financial system help to promote full employment and growth?
      - Does the financial system amplify or mitigate the changes and variations in “real activity”?
  
  - Are the fluctuations in financial variables (for example credit) driven by internal factors (**endogenous**) or by external factors (say external shocks) (**exogenous**)?

- Achieving financial stability requires addressing these issues.
The financial and business cycles in the United States

Graph 1
More importantly it requires an understanding of how the economy as a whole (the macroeconomy) functions

• Broadly speaking there are **two broad views** of how the economy functions.

• **The first view (mainsteam view)** sees the economy organized around the figure of the consumer.

  ➢ Consumers drive the economy.

  ➢ The end of economic activity is consumption.
    o This is because consumption provides pleasure (utility).

  ➢ What is left over after consumption is savings. Since savings is not consuming it is seen as a displeasure (a disutility).

  ➢ Since every one wants pleasure (utility), incurring in savings requires a compensation, a reward.

  ➢ This reward is called the rate of interest.
What does this have to do with the financial system and with the stability of the financial system?

• The financial system helps to ensure that the pricing of the reward for not consuming, that is for savings is adequate and correct.

• The financial system channels the savings to productive uses, to investment.

• In this sense the financial system acts as intermediary between those that want to save and those that want to invest.
What is the traditional or mainstream view?
The circular flow of income

Source: Mankiw (2010), p. 46
The financial sector is an important contributor to growth

- This view goes back at least to Schumpeter (1912). According to Schumpeter, the banker is “the capitalist par excellence…He is the ephor of the exchange economy”; ´the money market is the headquarters of the capitalist system´.

- Schumpeter sees two roles for bankers: provision of funding for start-up entrants and a filter screen to determine the feasibility and profitability of a project.

- More recent analyses document the relationship between development and growth through cross-country studies.

- Finance contributes to growth by: (i) producing ex ante information about investment opportunities; (ii) improving ex post monitoring of investment and exerting corporate governance; (iii) facilitating risk management and diversification; (iv) mobilizing and pooling savings; (v) easing the exchange of goods and services (Levine, 2005).
<table>
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<th>Main assumptions</th>
<th>Theorems/hypothesis</th>
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<td>Normal utility maximizing risk averse agents</td>
<td>EM</td>
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<td>Agents have rational expectations</td>
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<td>Markets are frictionless and information is costless and simultaneously available to all agents</td>
<td>X</td>
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<td>Agents update their expectations continuously and appropriately to new relevant information</td>
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<td>Investing decisions made on the basis of expected values and standard deviations of the returns on the portfolios</td>
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<td>Investors are price takers</td>
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<td>Prices adjust rapidly but smoothly to reflect all information</td>
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<td>Investors have homogenous expectations</td>
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<td>All assets (shares) are marketable and are infinitely divisible</td>
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<td>Unlimited lending and borrowing at the constant riskless rate</td>
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<td>Stock prices follow a random walk</td>
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<td>No taxes</td>
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<td>No danger of bankruptcy</td>
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<td>Investment decisions are independent of how investment is financed</td>
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<td>Asset returns are (jointly) normally distributed random variables</td>
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<td>Correlations between assets are fixed and constant</td>
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Notes: EM = Efficient market hypothesis; RR = Risk and return (CAPM model); MM = Modigliani-Miller theorem; BSM = Black-Scholes-Merton equation.
Source: Pérez Caldentey and Vemengo (2012)
What does this have to do with the financial system and with the stability of the financial system?

- Thus as long as the reward for not consuming (i.e. for savings) is priced correctly (the rate of interest is at an adequate level), as long as the financial system is allowed to act as an intermediary between savers and investors the financial system will be stable.

- According to this view financial instability arises when interest rates are manipulated
  - Policy mistakes and policy incompetence.

- Financial instability can arise due to market imperfections (asymmetric information).

- Within this view financial instability can also arise when intermediation becomes more indirect and complex (´longer intermediation chains´).
  - Prior to the financial crisis (2008-2009) the process of intermediation became more difficult to follow and monitor due to proliferation of different financial institutions.
BEFORE (good for financial stability)

AFTER (bad for financial stability)
The growth of the financial sector

- Financial assets have grown exponentially in the past decade and represent over 1,000% of world GDP.
  The rise in global financial depth is explained mainly by the exponential growth in derivatives.
The importance of the “Shadow Banking System”

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<td>Pozsar and Singh (2011)</td>
<td>United States (late 2007)</td>
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<td>United States (late 2010)</td>
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<td>Europe (late 2010)</td>
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<td>World (2007)</td>
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<td>World (2010)</td>
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<td>Bakk-Simon and others (2012)</td>
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<td>World (2012)</td>
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<td>Tyson and Shabani (2013)</td>
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The post-Keynesian approach provides an alternative vision and analytical model of a capitalist economy

- The post-Keynesian view takes as its starting point an economy driven not by consumers but by **entrepreneurs and bankers**.

- The interaction of entrepreneurs and bankers provides the underlying dynamics of the evolution of capitalist economies.

- Entrepreneurs and bankers **do not pursue consumption** as their main goal in life.

- **Entrepreneurs and bankers want money** and they get money through the realization of profits.
How do entrepreneurs obtain profits?

• By investing, producing and selling.

• Investment is a complex decision because it is highly irreversible. Have to think twice before investing.

  ➢ Firms cannot disinvest or can only do so at high cost and very gradually via depreciation of their fixed assets; investment thus becomes a sunk cost.

• Entrepreneurs will undertake an investment project if they expect to gain enough revenue to justify their investment. Since an investment project can take a given period of time to mature entrepreneurs must make ´expectations regarding future conditions.´
How do entrepreneurs obtain profits?

- If entrepreneurs invest and produce and they can’t sell what they produce, they will have losses and so will reduce production.

  - **Investment depends on demand (expected demand)**
Once entrepreneurs decide to invest where do they get the funding?

- They get the funding partly by past profits (retained earnings) and by the banking system.
Bankers (the financial system) will lend under two conditions

- Bankers will lend if they think they will recover the amount of the loan (the debt).

- But recovering is not enough incentive to lend. In addition bankers will lend if they can make a profit. And in this sense they are exactly like entrepreneurs.

- The greater is the profit bankers can make the more they will lend and the more ways they will find to lend.

- Entrepreneurs determine the volume of investment (expenditure) they are willing to undertake and bankers determine the volume of investment (expenditure) they are willing to finance.
In the post-Keynesian approach the figure of the banker is very different from that of mainstream economics

- Bankers do not intermediate, they do not channel savings to investment.

- Rather they simply provide (endogenously) the finance required for investment. If bankers do not want to finance an investment, the investment project will not materialize.

- In other words bankers (the financial system) provides and guarantees the acceptance of debt and this is the main function of the financial system.
Under the post-keynesian view is the financial system prone to stability?

- Not really. The financial system provides debt and the growth is driven by the expectation of profits.

- When the expectation of profits is buoyant (when there is an optimistic mood) the financial system is willing to lend. And the contrary occurs when profit expectations are dim.

- This gives rise to credit (debt) fluctuations that can be highly volatile. The sharper are the changes from optimism to pessimism (or vice versa) the greater the credit fluctuations.

- This view has little to do with policy mistakes or with ´long intermediation chains.´ This view emphasizes that finance and financial cycles and financial instability are a part of the workings of capitalist economies.
How does the financial system make its profits?

- This can be shown by a very simple but powerful equation

\[
\frac{Earnings}{Equity} = \frac{Earnings}{Assets} \times \text{Leverage}
\]

\[
ROE = ROA \times \text{Leverage}
\]
How does the financial system make its profits?

• This can be shown by a very simple but powerful equation

(1) \( Earnings = Earnings \)

(2) \( Earnings = Earnings \cdot \frac{Assets}{Assets} \)

(3) \( \frac{Earnings}{Equity} \cdot Equity = Earnings \cdot \frac{Assets}{Assets} \)

(4) \( \frac{Earnings}{Equity} = \frac{Earnings}{Equity} \cdot \frac{Assets}{Assets} \)

(5) \( \frac{Earnings}{Equity} = \frac{Earnings}{Assets} \cdot \frac{Assets}{Equity} \)
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\]

Rate of return over equity
Rate of return over assets
Debt
How does the financial system make its profits?

- This can be shown by a very simple but powerful equation

\[
\frac{Earnings}{Equity} = \frac{Earnings}{Assets} \times Leverage
\]

\[\uparrow\]

\[ROE = ROA \times Leverage\]
What are some of the manifestations of this “quest for profits”

Provisions for loan losses for selected banks of the United States
1997-2015 (Billions of Dollars)
What are some of the manifestations of this “quest for profits”?
What are some of the manifestations of this “quest for profits”
What are some of the manifestations of this “quest for profits”

**Interconectivity for US, European and Asia banks**

**United States**

- Banks from 1 to 9
- Banks from 10 to 19
- Banks from 20 to 55

**Asia**

- Banks from 1 to 8
- Banks from 9 to 21
- Banks from 22 to 76

**Europe**

- Banks from 1 to 8
- Banks from 9 to 21
- Banks from 22 to 45
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*Correlation coefficients which are positive and statistically significant*
What are some of the manifestations of this “quest for profits”

Rate of return on equity for the major banks of the United States 2000-2015

- More than 1 trillion
- Between 100 billions and 1 trillion
- Between 25 billions and 100 billions
- Less than 25 billions
Financial instability does not occur all of a sudden. Rather it is the result of a process that builds over a period of time.

- Within the post-Keynesian tradition the best known analysis of the generation of financial instability was put forward by Hyman Minsky.

- It is the financial instability hypothesis (FIH). The FIH is meant to explain instability as “an internally generated result of the normal functioning of capitalist economies” (Minsky, 1972, pp. 144-145; 1978, p.92, p.111).

- It is based on two theorems (Minsky, 1992, 1986).

- The first states that a capitalist economy has financing regimes (characterized by relations between cash payment commitments on debts and expected cash receipts) under which it is stable and financing regimes under which it is unstable.
Financial instability does not occur all of a sudden. Rather it is the result of a process that builds over a period of time.

- Minsky identifies three financing regimes: hedge, speculative and Ponzi. Their importance and weight in economic unit’s portfolios determine to a large extent the stability or instability of an economy.

  - Hedge finance refers to a situation where the gross capital income of an economic unit (defined as gross profits before taxes minus interest paid on business debts) “exceeds by some margin the payment commitments due to debts in every relevant period over the horizon given by the debts now on the books and the borrowings that must be made if expected gross capital income is to be earned” (Minsky, 1980, p. 25).

  - Speculative finance refers to a situation where cash payment commitments on debts are greater for some periods than the expected gross capital income.

  - Ponzi finance refers to “speculative units with the special characteristics that for some if not for all near term periods cash payment commitments to pay interest are not covered by the income portion of the expected excess of receipts over current labor and material costs.” Ponzi units must borrow in order to pay interest on their obligations so that the outstanding debt grows over time.
Financial instability does not occur all of a sudden. Rather it is the result of a process that builds over a period of time.

- The FIH second theorem holds that prosperity is conducive to financial instability, i.e., “stability is destabilizing”. As Minsky put it: “. . . over periods of prolonged prosperity, the economy transits from financial relations that make for a stable system to financial relations that make for an unstable system” (Minsky, 1992, p.8). The transition occurs during the upward phase of the cycle (“the path of this basic instability is upwards” (Minsky, 1980b, p.517; 1980a p.83).

- For the upward phase of the cycle to lead to instability two conditions must be met. First, debt commitments have to increase at a faster pace than the underlying income supporting those levels of debt. Second the composition of debt has to shift towards short-term debt Minsky (1995, p.201).

- Economic agents also become dependent on higher and increasing levels of liquidity. The normal functioning of financial markets imply the realization of optimistic expectations regarding profit flows (i.e., quasi-rents). Within this context the possibility of crisis can arise from factors that can disappoint these expectations. According to Minsky (1975, p. 115) these include “rising wages or production costs, feedbacks from rising interest rates to the value of older long-term debt, the high cost of refunding previous debt.”
Unfortunately, the economic theory that is taught in colleges and graduate schools—the equipment of students and practitioners of economics over the past thirty years and the intellectual basis of economic policy in capitalist democracies—is seriously flawed. The conclusions based on the models derived from standard theoretical economics cannot be applied to the formulation of policy for our type of economy. Established economic theory, especially the highly mathematical theory largely developed after World War II, can demonstrate that an abstractly defined exchange mechanism will lead to a coherent, if not an optimum, result.¹ However, this mathematical result is proven for models that abstract from corporate boardrooms and Wall Street. The model does not deal with time, money, uncertainty, financing of ownership of capital assets, and investment. If, on the other hand, the factors from which theory abstracts are important and relevant, if financial relations and organizations significantly influence the course of events, then the established economic theory does not furnish an underpinning for the proposition that coherence results from the type of decentralized market economies that exist. In fact, the Wall Streets of the world are important; they generate destabilizing forces, and from time to time the financial processes of our economy lead to serious threats of financial and economic instability, that is, the behavior of the economy becomes incoherent.²

H. Minsky (1986), p. 5