Macroeconomics II

4. Financial Crises and Bank Runs

BSc in Economics

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March 7, 2024

The IS Curve (goods market) incorporating confidence and risk premium

- The equilibrium in the goods market is given by the IS curve:

$$Y = C(Y - T, \text{confidence}) + I(Y, i + rp) + G$$

  where C represents consumption as a function of available income, $Y - T$; I gives investment as a function of income, Y, the interest rate, i, and the risk premium, rp; and G regards government expenditures.

- Shifts in the IS curve: T, G, confidence or rp.
- Movements along the IS curve: i or Y.

Diamond Dybvig Model (1983)

- Shows that there is a basic problem of bank runs.
- The model consists of two parties: depositors and banks.
- The model has three time periods: yesterday, today and tomorrow.
- Depositors deposit an amount yesterday. They may be:
  - Patient: need their money today or tomorrow.
  - Impatient: need their money today.
- Banks can use deposited money in short-term and long-term investments.
- A deposit contract defines what happens if depositors withdray their money today or tomorrow.

Why can asset prices be above fundamentals?

- Take an asset in fixed supply that will pay either 12 (with 50% prob.) or 6 (with 50% prob.) in a year's time. Assume the expected dividend in a year is zero. If the discount rate is 10%, the fundamental price of the asset is given by:

$$P_F = (0.5 \times 12 + 0.5 \times 6)/1.1 \approx 8.2$$

- What if the asset is purchased with a loan? Assume there is limited liability, that in case the bad outcome happens the borrower (risk neutral) can default on the loan (obtaining a payoff of zero), and that the alternative investment has 0% marginal return above the interest rate.

$$0 = 0.5 \times (12/P - 1.1) + 0.5 \times (6/P - 1.1) \Leftrightarrow 0 = 0.5 \times (12/P - 1.1) + 0.5 \times 0 \Leftrightarrow P \approx 10.9$$

- There is a bubble (prices exceed fundamentals by approximately 2.7).

References

- Blanchard, O. (2017). *Macroeconomics. Global Edition.* (7th ed.). Routledge.