FREIXAS AND ROCHET (2008) MICROECONOMICS OF BANKING, CHAPTER 5

EQUILIBRIUM IN THE CREDIT MARKET AND ITS MACROECONOMIC IMPLICATIONS

Alberto Ortiz

Review

- During the last month we analyzed extensively the characteristics of loan and insurance contracts in static and dynamic settings.
- We discussed the complex relationships between a Principal (borrower) and an Agent (lender) and how to design efficient contracts when credit market imperfections are present.
- Today we turn to the credit market to examine the formation of equilibrium interest rates when multiple borrowers and lenders compete.

Equilibrium

- The usual graphical analysis of supply and demand does not work in the context of the credit market.
- The credit supply function may well be backward-bending for high levels of the interest rate.
- Demand and supply curves may not intersect, which means that a new equilibrium concept (less demanding than the usual market-clearing condition) has to be designed to describe the outcome of a competitive credit market.
- Typically it involves a situation of credit rationing.

5.1 Credit Rationing

- A situation when the demand for credit exceeds supply at the prevailing interest rate.
- Def^{n} (Baltensperger, 1978): **equilibrium credit rationing** occurs whenever some borrower's demand for credit is turned down, even if this borrower is willing to pay all the price and nonprice elements of the loan contract.
  - Price elements: interest rate
  - Nonprice elements: collateral requirements

Types of rationing

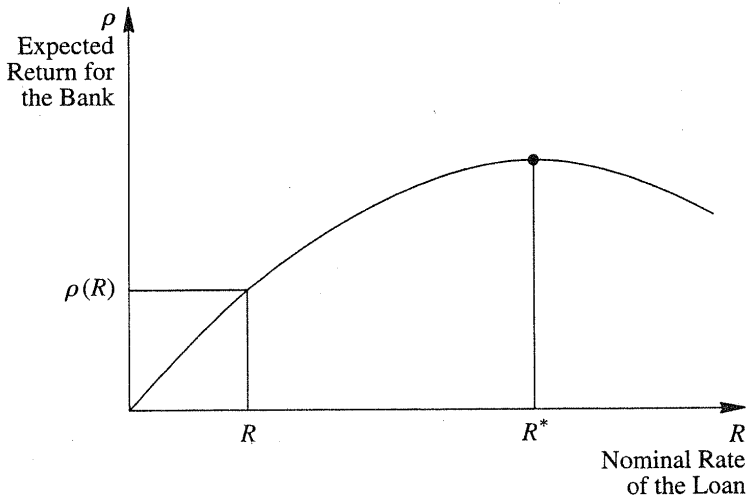
- Following Keeton (1979) one can distinguish two types of rationing:

- **Type I rationing** occurs when there is partial or complete rationing of all the borrowers within a given group.
  - each borrower gets one-half unit.

- **Type II rationing** occurs within a group that is homogeneous from the lender's standpoint, so that some randomly selected borrowers of this group obtain the full amount of the loan they demand while others are rationed.
  - only N borrowers randomly selected out of the 2N potentials obtain one unit.

5.2 The Backward-Bending Supply of Credit

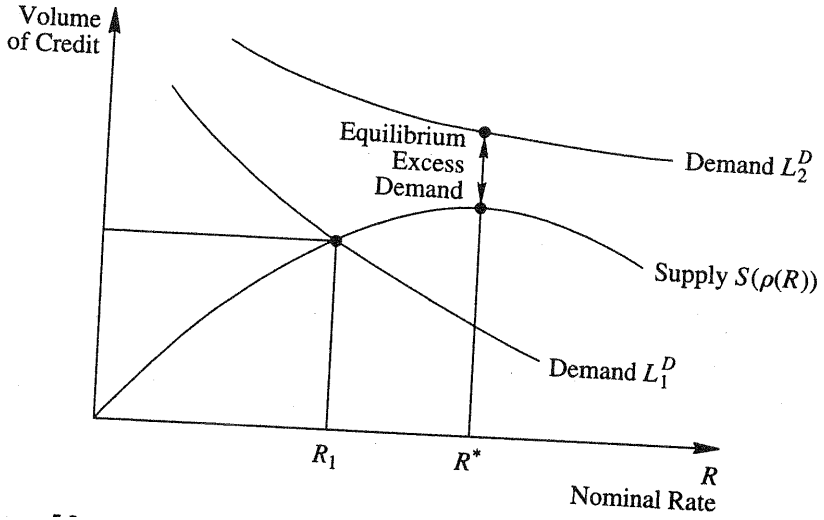
- Equilibrium rationing can appear as soon as the expected return on a bank loan (for a given category of borrowers) is not a monotonic function of the nominal rate of this loan.



- A monopolistic bank facing the return schedule of figure 5.1 will never offer an interest rate above R*. This explains why a monopolistic bank may prefer to ration credit applicants.

5.3 Equilibrium Credit Rationing

- If the demand schedule is L^1, a competitive equilibrium exists, characterized by the equality of supply and demand, so that the nominal rate R^1 clears the market.



- On the other hand, if the demand schedule is L^2, the supply and demand curves do not intersect. An equilibrium with credit rationing will then occur, characterized by the interest rate R* and zero profit for the banks.

How to justify the backward-bending supply curve for high levels of interest rates?

- So far we just assumed that the expected return on a loan is not always a monotonic function of the nominal rate *R* of this loan.
- This result can be explained by asymmetric information due to
- Adverse Selection
  - Stiglitz and Weiss (1981).
- Costly state verification
  - Williamson (1987).
- Moral Hazard
  - Bester and Hellwig (1987).