Informational Frictions and Financial Intermediation

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Agenda

- We are beginning to study banking and banking regulation. Banks are a financial intermediaries.
- Before we can understand how the banking industry is organized and regulated, we have to understand the nature of problems that financial intermediaries help solve (as well as what can go wrong):
  - Transaction costs
  - Adverse selection and moral hazard
- Particularly topical is the study of how these frictions can lead to financial crises.
Stylized Facts about Financial Systems (in Developed Economies)

- Issuing marketable debt and equity instruments is not the primary way for businesses to finance their operations (Canada: 12% stocks, 15% bonds)
- Indirect finance – via financial intermediaries, especially banks – main source of funds for a business (Canada: 54% bank, 18% nonbank loans)
- Financial system is among the most heavily regulated
- Only large corporations have access to security markets (direct finance)
- Debt contracts are frequently collateralized
- Debt contracts place substantial restrictions on borrower activity
Transaction Costs

- A small investor with a few hundred dollars would be frozen out of the financial market because of brokerage fees and resulting difficulty of diversification (exposure to excessive risk)

- A financial intermediary (e.g. mutual fund) can pool the savings of many individuals and invest in large scale (*economies of scale*: 10,000 shares are not much more costly to buy than 50 shares)
  - Can also diversify as a result of the pooling, decreasing your exposure to risk
Adverse Selection: Lemons Problem

- Due to George Ackerlof (1970)
  - A used car buyer is often unable to assess the quality of a car – could be in good condition or a “lemon”
  - What price would you be willing to pay for such an unknown? – A price that averages between the value of good cars and lemons
  - Owner of car knows the car’s quality: if lemon, happy to accept the average price (it overvalues the car). If the car is good, the price in the market undervalues the car – no sale.
  - Lemons would dominate such a market. Buyers recognize this and don’t want to buy. → A non-functioning market.
  - Solution: used car dealers – the intermediary. Has expertise. Cares about its reputation and/or is able to offer warranties.
Financial Lemons

- Same problem exists in financial markets: assessing a stock (the underlying company) is hard and subject to asymmetric information
- Investor is willing to pay some average price
- Bad firms are willing to accept this price; good firms not
- Can lead to only bad firms selling securities (stocks or bonds)
- There is obviously scope for intermediation
Solutions to Adverse Selection Problem

- Private production/sale of information – private firms research firms and sell that information to investors
  - Problem: free-riding – if others pay, all you have to do is mimic them. → Less information is produced.

- Government regulation – require firms to have independent audits. This too can fail (Enron).

- Financial intermediaries: most effective in dealing with adverse selection
  - Like the car dealer, they have the expertise to evaluate different securities, and have incentive to stay honest to protect their reputation → generate business/profit
  - Banks avoid free-rider problem, because a lot of its activity is private – not observed by other banks.
Adverse selection also explains why a lot of debt contracts are collateralized:
- A guarantee – reduces lender’s losses in the event of default.

The net worth (equity capital) of a company (assets - liabilities) plays a similar role to collateral: a high-net-worth company is less risky to lend to
- Less likely to default
- In the event of default, creditors can seize the assets (e.g. under bankruptcy procedure)
Moral Hazard: Principal-Agent Problem

Firms typically sell stock to shareholders (*principals*) who are not in charge of managing the company: separation of ownership and control

- Moral hazard: managers (*agents*) may act in their own interest rather than in the interest of company/shareholders.
- Information about managers’ actions is asymmetric.

Solutions:

- Monitoring (production of information) - e.g. audits by stockholders. But: free-rider problem. \( \rightarrow \) Less auditing
- Government regulation – e.g. standard accounting practices.
- Intermediaries can overcome the free-rider problem (e.g. venture capital firms)
Moral Hazard and Debt Contracts

- Debt holders of firms (e.g. bondholders) have less of a need to monitor firms’ activities, as long as firm is able to pay off debt on time
  - The structure of repayment is fixed in advance and not affected by firms profit fluctuations, etc.
- Debt contracts are more attractive in the face of moral hazard.
- However, moral hazard is still present: manager could take the loan and make a risky investment which could cause the firm to fail.
- Solutions to moral hazard in debt contracts: collateral; restrictive covenants; financial intermediation.
Financial Crises and Economy

- Financial crises occur because, for some reason, there is a sharp increase in adverse selection and moral hazard problems.
- As a result, financial intermediaries (and financial markets) are unable to channel funds to investors – credit crunch. Example: current U.S. crisis.
- Characteristics of financial crises:
  - Sharp declines in asset prices.
  - Failures of many financial and nonfinancial firms.
Financial Crises: Causes

(1) Increases in interest rates due to contractionary monetary policy or an increase in demand for credit
   - Bad credit risks are more willing to pay high interest rates
   - When interest rates are driven up sufficiently, they will crowd out good credit risks
   - As a result, adverse selection becomes too prevalent

(2) Increases in uncertainty due to failures of prominent institutions also result in inability to screen out the adverse selection problem

→ Severe declines in lending (credit crunch)
Financial Crises: Causes

(3) Asset Market Effects – if there is a sharp decline in stock prices (e.g. 777 points in a day, like 9/29/08) –

- Firms’ balance sheets deteriorate – their assets are suddenly worth much less; big declines in net worth.
- This makes lenders less willing to lend to firms – it is like a decline in collateral.
- Overall increase in uncertainty about quality of firms – adverse selection problems exacerbated.
- Moral hazard up as well, as borrowing firms may engage in riskier activities to try to salvage their balance sheets.
- If decline in aggregate price level results, \textit{debt deflation} is a major danger – further deterioration of balance sheets.
Financial Crises: Causes

(4) Problems in banking sector -
- Bank balance sheets may also be affected by above factors.
- If bank’s balance sheet deteriorates for any reason, it is less likely to lend – contributing to the credit crunch.
- If deterioration is severe, banks may start to fail. This may cause investors/depositors to pull their funds even from healthy banks. (In absence of deposit insurance). → Bank run.
- Increase in adverse selection and moral hazard as a result of the banking panic.

Note: deposit insurance is supposed to prevent the public from staging a bank run. But think of it in current context…

(5) Fiscal imbalances (in developing countries) could also cause problems.