Econ 201: Introduction to Economic Analysis

November 13 Lecture: The Financial System

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Daily dose of The Far Side

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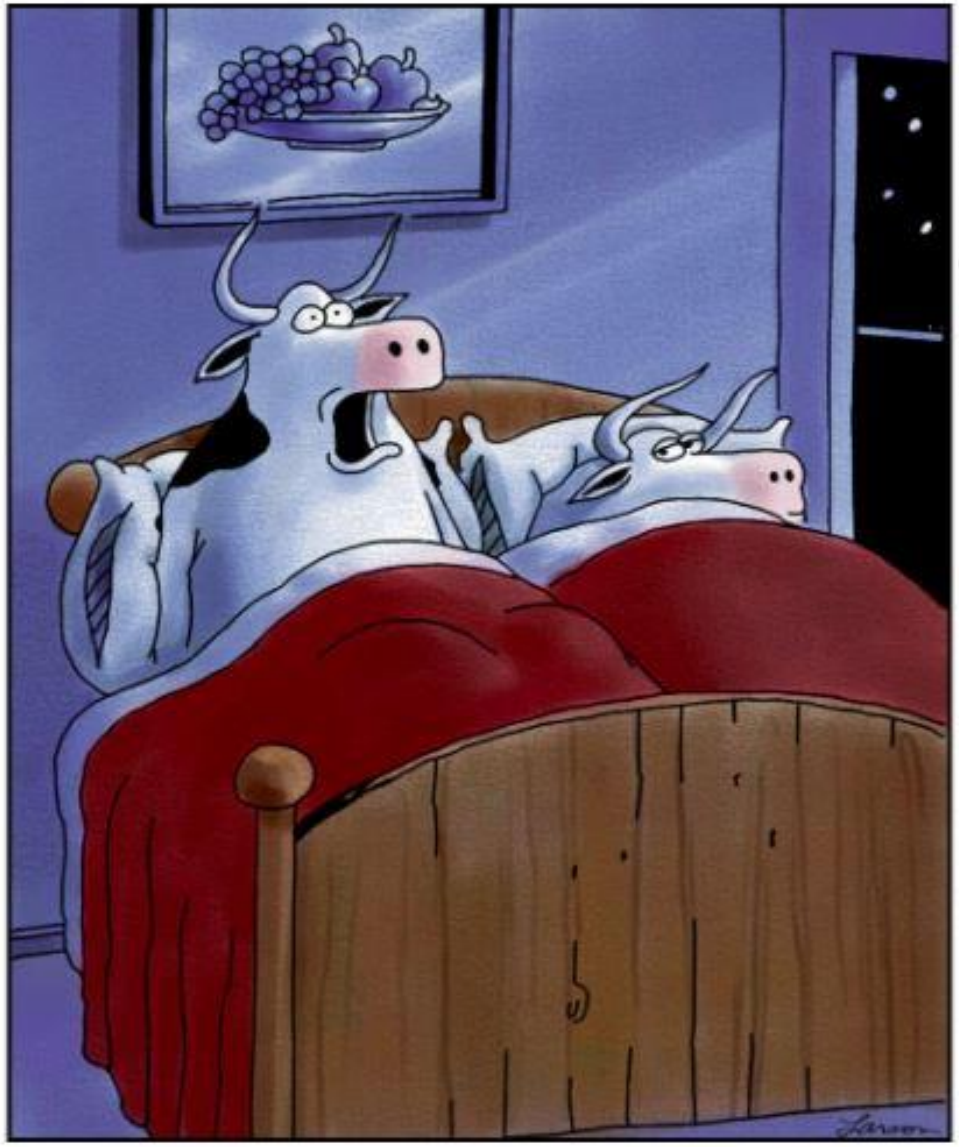


"THE GOLDEN ARCHES! ... THE GOLDEN ARCHES GOT ME!"

Preview of this class session

- Financial markets link those with wealth with those who have good uses for funds, allow efficient allocation of risk and liquidity
- Many transactions on financial markets are intermediated by banks, mutual funds, and other financial firms
- The loanable-funds market balances saving and investment in the macroeconomy and sets equilibrium real interest rate
- Financial investors look for high return and low risk through diversification
- Efficient-market hypothesis asserts that asset prices respond quickly to any available information about future risks and returns

Financial Assets and Markets

Basic principles of financial assets

- **Financial assets** are claims on resources
  - Bonds are claims to repayment
  - Shares of stock are claims on the future profits of corporation and (perhaps) right to participate in selecting board of directors
  - Futures contracts are agreements to make a future transaction
  - Many assets are contingent contracts: payoff depends on conditions (bets, options, insurance, etc.)
- **Financial markets** are where financial assets are traded
  - Some are formal markets with standardized rules
  - Some are less formal ("over-the-counter") arrangements made by large banks or other market-makers

Roles of financial markets

- Exchanging the **use of funds**
  - Some people have lots of wealth but not a lot of productive uses
  - Some people have great uses but lack the funds they need
  - Financial markets bring these parties together to their mutual gain
- **Allocating risk**
  - Some people are very risk averse; others have higher tolerance
  - Contingent contracts (insurance, for example) allow the reallocation of risk to those with greater willingness to bear it
  - Pooling of individual risks can lower aggregate riskiness
- **Allocating liquidity**
  - Some need to be able to get cash quickly; others not

Financial intermediation

- Small savers and borrowers don't have direct access to primary markets
- **Financial intermediaries** play important role in "retailing" financial services to general public
- **Commercial banks** (and other depository intermediaries)
  - Accept deposits and pool them to make loans
  - Specialize in information about small customers
  - Earn return off difference between interest rates on loans vs. deposits
- **Mutual funds** allow small investors to buy pool of assets
- **Insurance companies** provide contingent contracts to risk-averse customers

Loanable-Funds Market (Redux)

Saving and investment

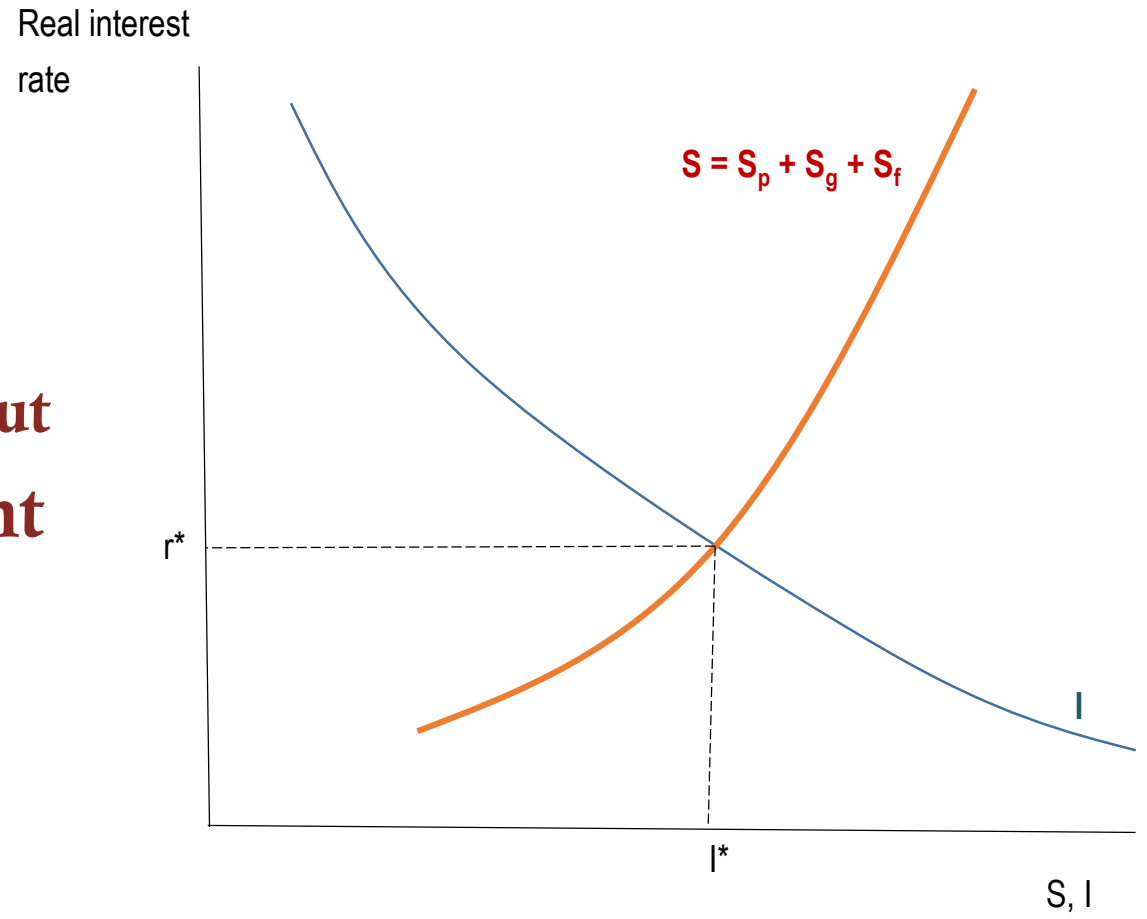
- Loanable-funds market brings together savers (supply) and real investors (demand)
- Basic macroeconomic conditions:
  - $Y = C + I + G + NX$
  - $S_p = Y - T - C$
  - $S_g = T - G$
  - $S_f = -NX$
  - $S = S_p + S_g + S_f = Y - C - G - NX = I$
  - $S = I$
- **Saving equals real investment** in aggregate economy

Real-interest-rate effects

- **Supply of saving**
  - Higher real interest rate = greater financial reward to saving: $r\uparrow \rightarrow S_p\uparrow$
  - Higher U.S. interest rate vs. world → capital inflow: $r\uparrow \rightarrow S_f\uparrow$
  - Supply curve slopes upward
- **Demand for investment** funds
  - Higher real interest rate →
    - Higher opportunity cost of real capital
    - Present value of investment projects falls
    - Fewer projects have rate of return > interest rate
    - Demand curve slopes downward
  - Should we use nominal or real rate in present-value formula?
    - Discount future nominal values using nominal rate
    - Discount future real values using real rate

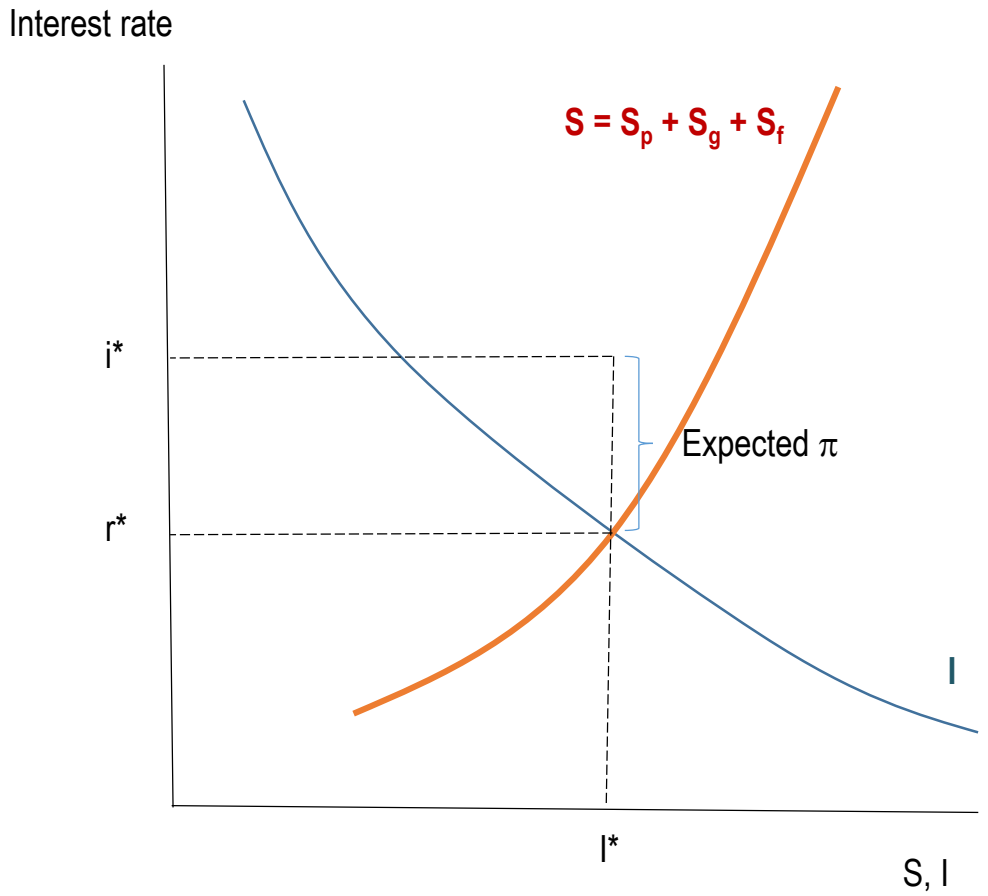
Equilibrium in loanable-funds market

- **Increase in supply of saving**
  - Households save more
  - Government deficit falls
  - Trade deficit increases
  - More investment and lower *r*
  - Government deficit and **crowding out**
- **Increase in demand for investment**
  - Rise in marginal product of capital
  - More investment and higher *r*



Real and nominal interest rates

- Real rate is determined by intersection of *S* and *I* curves
- **Nominal rate** = real rate + expected inflation
  - Increase in equilibrium real rate raises nominal rate 1-for-1
  - Increase in inflation expectations raises nominal rate 1-for-1
  - The is the "Fisher effect"
- Nominal rate is bounded below by zero: **liquidity trap**
  - That's important with expected deflation (Great Depression, Japan)



Basic Principles of Finance

Risk and diversification

- Most people are **risk-averse** in major decisions
- **Diversification**: investing in broad portfolio of firms/assets
  - If asset returns are not perfectly positively correlated, diversification reduces risk
  - Some assets will have unexpectedly high returns, some unexpectedly low
  - Average return of diverse portfolio will have less risk
- **Idiosyncratic risks** offset each other by diversification
- Underlying **market risk** is still there because there are common movements affecting most assets together
- Assets that contribute more to risk of portfolio must have higher expected return to motivate holding them
- **Mutual funds** are good way for small investor to diversify

Valuing shares of stock

- **Limited-liability corporation**
  - Shareholders can only lose the amount of their investment, not be sued
- Stock is ownership of share of corporation
  - "Common" stock entitles voting for board of directors that makes decisions
  - Owner is entitled to share of corporation's future accounting profits
  - Profits can be paid out in **dividends** or **retained**; latter should add to share value
- Share price should equal present value of the share of expected profits it represents
- Increase in interest rate reduces present value, should lower stock prices

Efficient markets

- Stock price should depend on PV of expected future profit
- Expectations are based on all available information
- Example: USWidget is awarded profitable government contract
  - Higher expected future profits → stock price should rise
  - Stock price should rise whenever contract is publicly known, regardless of timing of official announcement or actual payments
  - If USWidget had been expected (by market) to get contract and it doesn't, share price will go down
- **Insider trading**: Very profitable to trade on information before rest of market knows it
  - That's why it's illegal!

Expected return in efficient markets

- Suppose that USWidget has higher expected return than other stocks ("the market") in its risk class
  - Everyone tries to buy shares in USWidget
  - Price of USWidget shares increases
  - Rate of return falls as stock prices rises until it matches others
- Asset markets are gigantic equilibrium system; everyone tries to beat others to higher return (given risk)
- Anything that is known is already "priced into" asset value in **efficient market**
- Tomorrow's price change cannot be correlated with anything known today: Stock returns follow a "**random walk**"

Why are stock markets volatile?

- Share prices depend on information (and market interest rates)
- Information about firms and general market changes fast!
- Change in expectations (or in interest rate) can have big effect on present value of expected future profit flow
  - This is true even if the firm's current profits do not change
  - It's all about traders' perceptions of the firm's future profits
- Current example: News about election and about pandemic have had large effect on day-to-day share prices
  - Insider trading example: Did members of Congress trade based on early briefings about potential severity of pandemic?

Does every downturn provoke financial crisis?

- No! It depends on the response
- If fall in asset value causes further sell-off, then downturn spreads to other assets
- Contagion
  - Expectations are hypersensitive to small change
  - Reduction in value of firm USWidget leads to sale of shares in other widget makers
  - Downturn may reduces confidence in overall market
- Balance-sheet problems
  - Firm (bank) may be illiquid, need to raise cash by selling assets
- Case study about 2008 financial crisis: No one knew which banks were solvent and which were not

Review

- Financial markets provide medium for allocating investment funds, risk, and liquidity
- Investors try to reduce the risk of their portfolios through diversification
- Real interest rate is determined in loanable-funds market
- Nominal rate is equilibrium real rate plus expected inflation
- Share prices should reflect present value of future profits
- In efficient markets, asset prices respond quickly to all public information

Daily diversion

Maybe the oldest bad economist joke I know, which has been attributed to the discipline's first Nobel laureate, Paul Samuelson

A physicist, and chemist, and an economist are stranded on an island with nothing to eat. Then a can of soup washes ashore.

The physicist says, "Let's smash the can open with a rock."

The chemist says, "Let's build a fire and heat the can first."

The economist says, "Let's assume that we have a can opener…"

What comes next?

- Monday's class examines the aggregate labor market and unemployment
  - Case study on unemployment in Slovakia
- Next Wednesday we return to finance by studying the banking and monetary system
- Problem Set #7 is due next Wednesday
- As of this class you have studied all the subjects covered on the exam