Ch 10: Savings, Investment and the Financial System

Open

This chapter is a mish-mash of a few ideas:

- Some National Account identities that you will need for Ch 11
- A mechanism that you need to make it so sources of funds (savings) is equal to uses of funds (Investments) called the nominal interest rate
- Brief discussion of the objects traded in those markets (loans, stocks)
- Brief discussion of the institutions.

An interest rate is a price

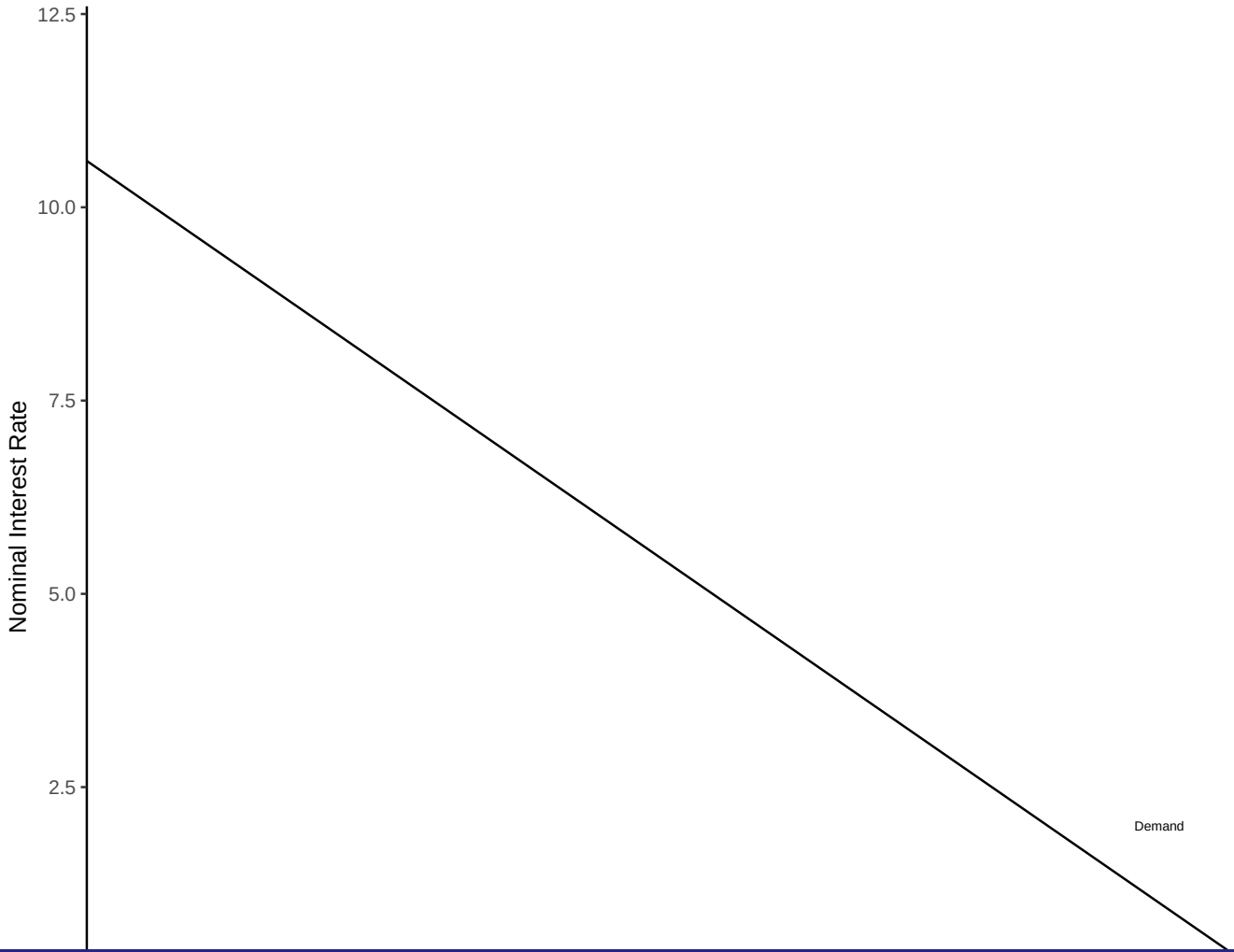
- It is the rental rate on money
  - Like renting a car.
  - You borrow it and return it and pay so much per day
- It is the price difference between consumption today and consumption tomorrow
  - Like the peanut/beer trad-off

Like any market with a price

- There is a price and associated volume
- A demand (Demand for loanable funds is one)
- A supply (Supply of loanable funds is one too)

Fits most of the generalities about slopes

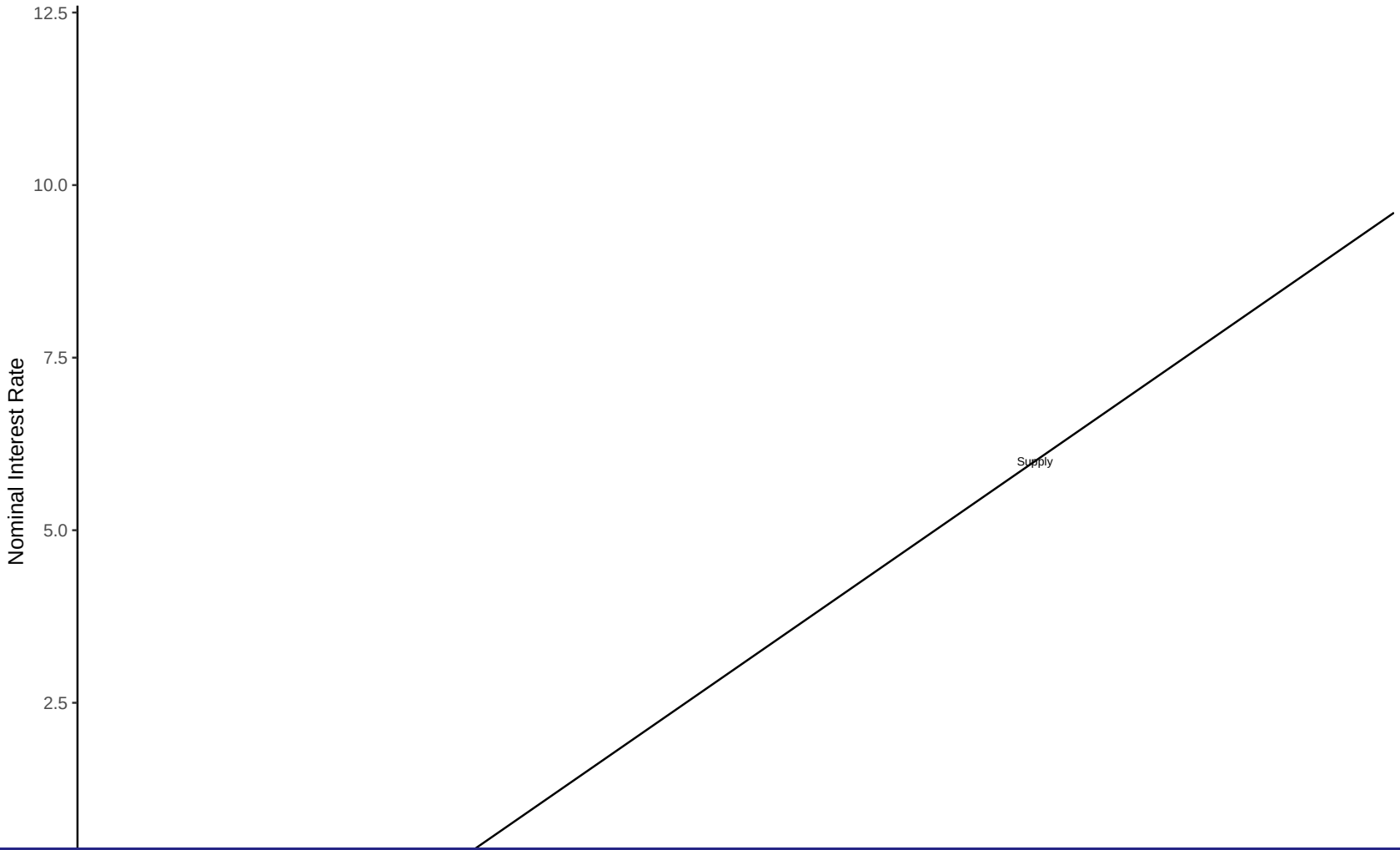
Demand for Loanable Funds



Of Note

- Desired loanable funds increases as the nominal interest rate decreases.
  - Every investment project has a rate of return (%) if it is higher than the loan rate – borrow and invest.
  - Every person has a rate of impatience on consumption (%) if the rate of impatience is higher than the loan rate – borrow and enjoy you purchase.
- What moves it?
  - Other borrowers with other interests. Government is the classic borrower that has non-financial interests
  - Perception of the investments or future consumption
    - If you think a recession is coming soon, your valuation of the investments, and rate of return (%), decreases.
    - If you think a recession is coming soon, you are more likely to save than spend.

Supply of Loanable Funds



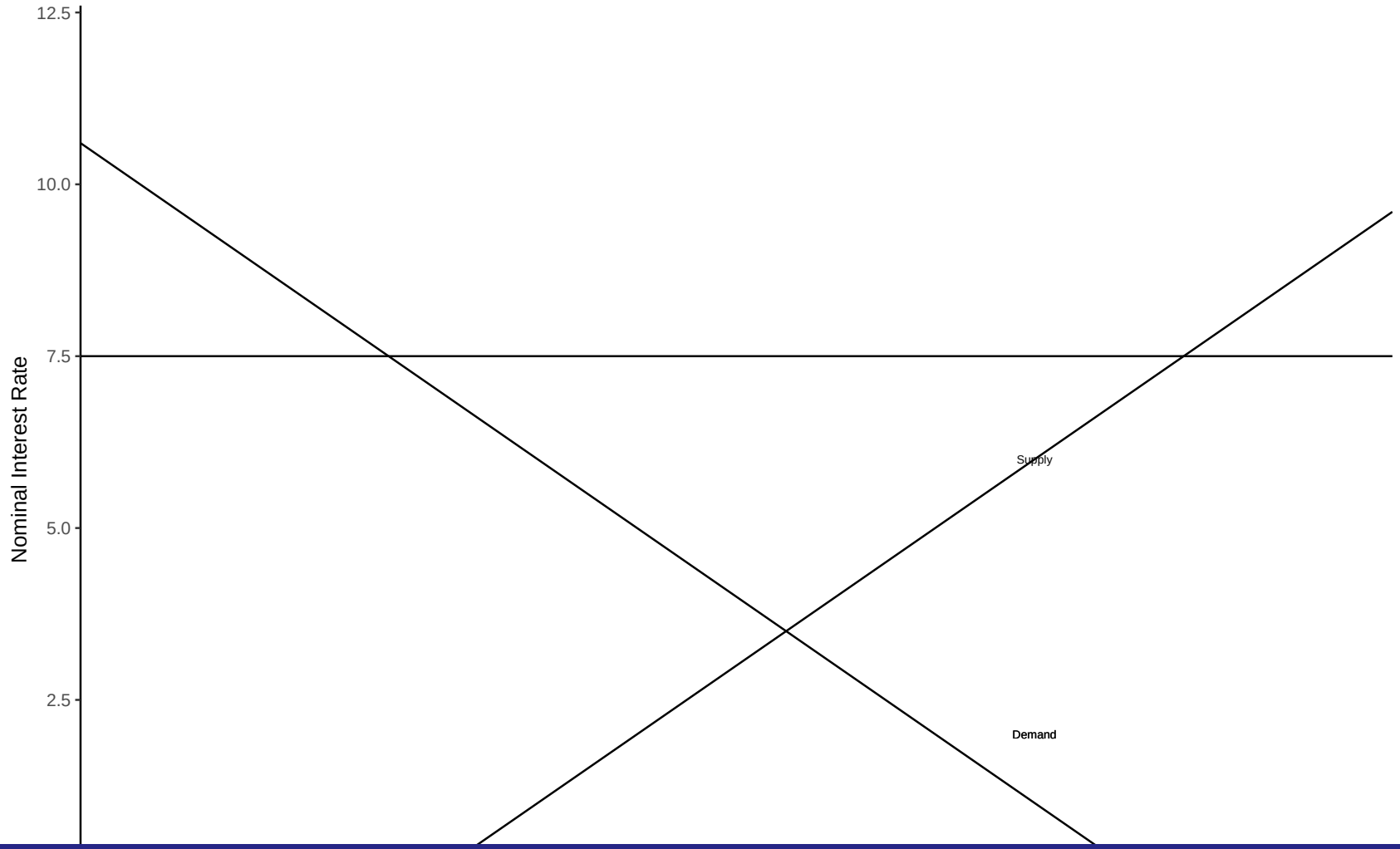
Of Note

- Quantity Supplied of loanable funds increases as the nominal interest rate decreases.
  - Every person has a rate of impatience on consumption (%).
  - If the rate of impatience is lower than the loan rate – loan the money out and enjoy greater consumption in the future.
- What moves it?
  - Beliefs about the future, save now if you think the future is bad.
  - Inflows from out of the country.

Remember Models of Trade?

- You can have domestic and world markets for loanable funds operating at the same time.
- When $r_{ROW} < r_{Dom}$ funds flow *into* the country from the rest of the world.
- When $r_{ROW} > r_{Dom}$ funds flow *out of* the country to rest of the world.

Outflows of funds



What Does this Have to Do with National Income Accounting?

Nominal interest rates adapt so that savings, supply of loanable funds, is equal to investment, demand for loanable funds

Start with simple model:

- No government and no international sector
- $GDP = NI = C + I$
- The interest rate, r, adapts so that Savings, $S(r)$, is equal to investment, $I(r)$.
- All income, NI, must be saved, S, or spent, C.
- $NI = C + S(r) = C + I(r)$
- Since consumption has to equal consumption
- $S(r) = I(r)$

Be Clear What this Means

$$S(r) = I(r)$$

- The nominal interest rate,r , adapts to make them equal.
- If savings increases, investment increases.
- If savings decreases, investment decreases.
- Investment now means higher per capital GDP, and consumption, later

More complicated with Government

$$GDP = NI = C + I + G$$

- Two types of savings, private and government
  - $S_{private}(r)$
  - $S_{gov} = T - G$ Taxes,T, less expenditures, G..
- Income must be spent or saved.
  $NI = C + S(t) + I(r) + (T - S_{gov})$
  - $S_{private}(r) + S_{Gov} = I(r)$
  - Suppose:
    - If government runs a deficit, $S_{Gov} < 0$, meaning $T < G$, then less investment.
    - If government runs a surplus, $S_{Gov} > 0$, meaning $G < T$, then less investment.
    - Above comments have more assumptions and only considers *current* investment.

With International Sector

$$GDP = NI = C + I + G + (X - M)$$

- Three sources of funds:
  - $S_{private}(r)$
  - $S_{gov} = T - G$
  - $Capital\ Inflow = M - X$
- $S_{private}(r) + S_{Gov} + Capital\ Inflow = I(r)$

The interpretation can get crazy:

- Running a trade deficit, $M > X$, means you are borrowing money from foreigners to buy their goods.
- Government runs deficits, means net imports increase and/or investment falls.
- Trade deficits and budget deficits are bound together.

More on the twin deficits

Lets make the simplifying assumption that there is no private savings, $S_{private} = 0$ and that nobody wants to invest, $I(r)$

$$0 + S_{Gov} + Capital\ Inflow = 0$$

If the government wants to run a deficit, $S_{Gov} < 0$, the we need a net capital inflow, $Capital\ Inflow > 0$ and that only happens when imports are greater than exports, i.e., we run the deficit by borrowing money from foreigners.

Financial Systems

How supply and demand of loanable funds meet.

What Do Financial Systems Do?

- Book's Story
  - Reduce transaction costs, either per transaction or number of transactions
  - Reduce risk through diversification
  - provide liquidity
- Alternative formulation: Intermediation with respect to scale, time, risk.

Book Discusses a Few Kinds of Securities

- General classification
  - Debt
    - Loans
    - Bonds
    - Loan backed securities
  - Assets
    - stocks
- There are way, way more.
  - Futures
  - Options
  - Generally, derivatives

Debt Details

- Loans
  - One person borrows from one person and pay them back.
  - Rights to collect are bought and sold.
- Bonds
  - One person borrows from many people.
  - Pay back with interest coupons every six months (common)
  - Pay back the principal at the end.
  - Organized market to buy and sell
- Loan backed securities
  - Lend out money to a lot of different people.
  - Package all the loans together and sell fractional shares rights to collect

Quick Insight into Mortgage Backed Securities circa 2008

- Sell loans to people.
- Package them into a security
- Sell the security to a bunch of people.
- Repeat.

Why They Thought They Were Safe

Tranches based on who goes in foreclosure (One way to tranche)

- A, B and C tranche.
- If someone defaults on a loan, the C tranche takes the loss till there are no loans in C.
- Then if more defaults, the B tranche

Then they pulled an inception move

- Built up new securities from a bunch of C tranches
- Like making sausage out of sausage and adding filler each time.

Are These Prices Right?

Shockingly hard question!

It depends on how you think information is embedded in asset prices.

Three Basic Kinds of Efficient Market Assumptions

Usefulness of information to predict future prices

- Weak: All past price data will not help.
- Semi-Strong: Public data does not help
- Strong: No data public or private can help

Grampa Ish and Betting on Horses

- You don't know who will win.
- Calculate your own odds of each horse.
- Bet the horse that is paying off more than you think it should.
- You win more often if you have your grandson talk to the jockeys.

Behavioral Finance

- Behavioral Economics has a brother.
- There are plenty of anomalies
  - Monday Effect, French (1980): Monday same trend as Friday
  - January Effect, Roll(1983): January is up
  - Firm Size, Banz(1981): Small firm, high return
  - Mean Reversion, DeBondt and Thaler (1985): What goes up, comes back down.
  - Momentum, Jegadeesh (1990): Returns keep rising or falling.
- Anomalies get smaller after a paper about it is published.
- Many critiques have to do with statistical details.