Principles of Finance

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Why Study Financial Markets?

Bird & Fortune: The Subprime Crisis

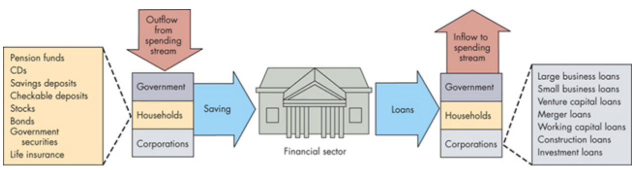
The Financial Sector and the Economy

- The Bnancial sector is central to almost all (macro)economic debates
- The **real sector** is the market for the production and exchange of goods and services
- The **Snancial sector** is the market for the creation and exchange of Bnancial assets
- Financial assets include money, stocks, and bonds
- Plays a central role in organizing and coordinating our economy

Why is the Financial Sector Important to Economics?

- For every real transaction, there is a Bnancial transaction that mirrors it
- The Bnancial sector channels savings back into spending
- For every Bnancial asset, there is a corresponding Bnancial liability
- Financial assets are assets such as stocks or bonds, whose beneBt to the owner depends on the issuer of the asset meeting certain obligations
- Financial liabilities are obligations by the issuer of the Bnancial asset

The Financial Sector as a Conduit for Savings



- Financial institutions channel savings back into the spending stream as loans
- **Saving** is outCows from the spending stream from government, households, and corporations
  - Savings deposits, bonds, stocks, life insurance
- **Loans** are made to government, households, and corporations
  - Business loans, venture capital loans, construction loans, investment loans

What Determines the Supply of Savings?

1. Smoothing consumption
2. Impatience
3. Market and psychological factors
4. Interest rates

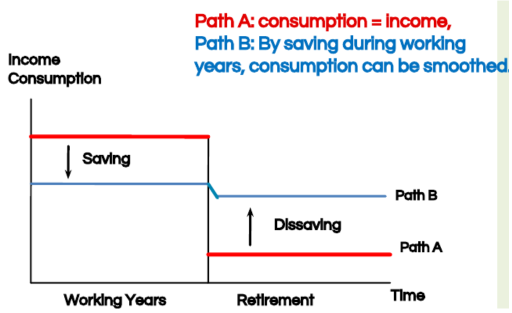
Individuals Want to Smooth Consumption

Save during working years to provide for retirement.

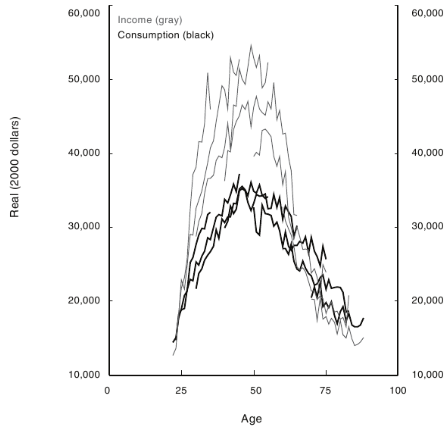
- Savings rises as life expectancy rises (or retirement age drops)

Manage Cuctuations in income.

- Save during good times in order to ride out the bad times.



Income & Consumption over the life course



AER, 2009, Karen E. Dynan, Wendy Edelberg, and Michael G. Palumbo

Individuals Are Impatient

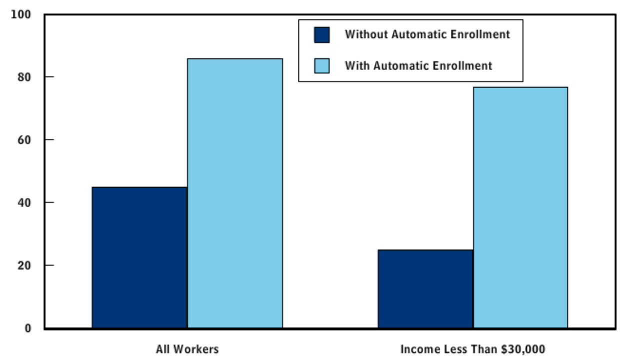
Time preference: the desire to have goods and services sooner rather than later.

- Anything with immediate costs and future beneBts must overcome time preference.
- People who discount future consumption more will save less now.

Marketing and Psychological Factors

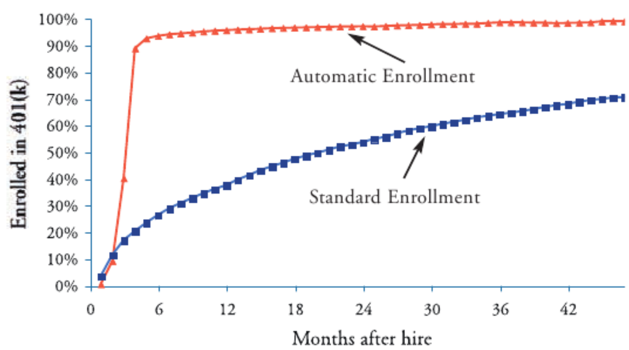
401(k): Automatic Enrollment & Initial Participation Rates

The way choices are presented makes a difference.



NBER, 2004, Choi et. al

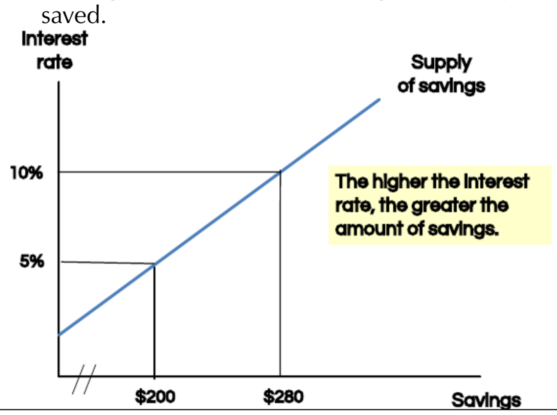
401(k): Longterm Effect of Automatic Enrollment



NBER, 2004, Choi et. al

The Interest Rate: Supply of Savings

- Interest is the reward for savings. It's the "price" of savings.
- The higher the interest rate, the greater the quantity saved.



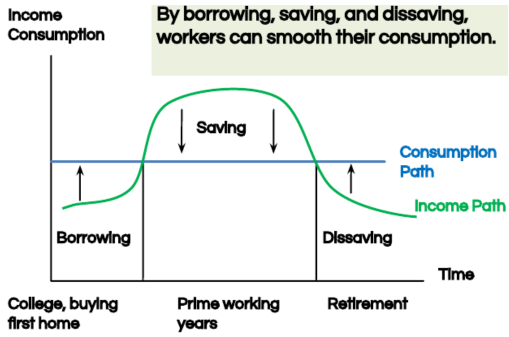
What determines the demand for borrowing?

1. Smoothing consumption
2. Financing large investments
3. The interest rate

Smoothing Consumption

Lifecycle Theory of Saving

Nobel laureate Franco Modigliani:
By borrowing, saving, and dissaving at different times in life, workers can smooth their consumption path, improving their overall satisfaction.

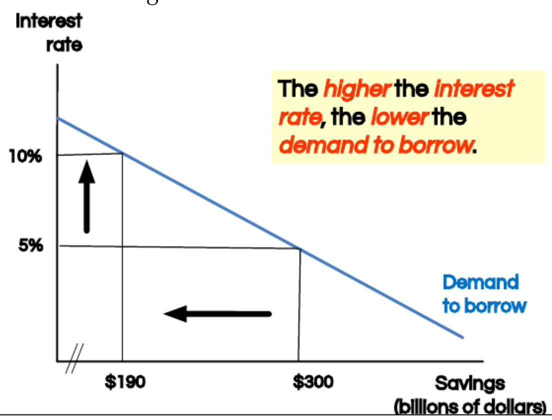


Borrowing Is Necessary to Finance Large Investments

Without the ability to borrow many proBtable investments will not happen.

The Interest Rate: Demand to Borrow

- Determines the cost of the loan.
- An investment will be proBtable only if its rate of return is greater than the interest rate.



Why Study Financial Institutions and Banking?

- Financial Intermediaries: institutions that borrow funds from people who have saved and make loans to other people:
  - Banks: accept deposits and make loans
  - Other Financial Institutions: insurance companies, Bnance companies, pension funds, mutual funds and investment companies
- Financial Innovation: the development of new Bnancial products and services
  - Can be an important force for good by making the Bnancial system more efBcient

The Role of Intermediaries

Banks, Bonds, and Stock Markets

- Financial Institutions reduce the costs of moving savings from savers to borrowers and investors.
- Middlemen who help coordinate Bnancial markets.
- Help move savings to more highly valued uses.
- Let's examine three Bnancial intermediaries:
  1. Banks
  2. Bond markets
  3. Stock markets

Banks

- Gather savings
- Reduce risk by evaluating ability to pay off loans.
- Spread risk
- When a borrower defaults on a loan, the bank spreads the loss among many depositors.
- Coordinate lenders and borrowers.
- Minimize information costs.

Conclusion: Banks help gather savings and allocate it to the most productive uses.

Besides decreasing the number of banks, how do bank failures hinder Bnancial intermediation?

The Bond Market

- A bond is a sophisticated IOU that documents who owns how much and when payment must be paid.
- Issuing bonds allows borrowing directly from the public.
- Lender: one who buys a bond
- Borrower: one who issues a bond
- Corporations and governments at all levels borrow money by issuing bonds.
- All bonds involve a risk.
  - Major issues are graded by rating companies: Standard and Poor's, Moody's
  - Grades range from lowest risk (AAA) bonds in current default (D)
  - The higher the risk the greater the interest rate required to get lenders to buy the bonds.

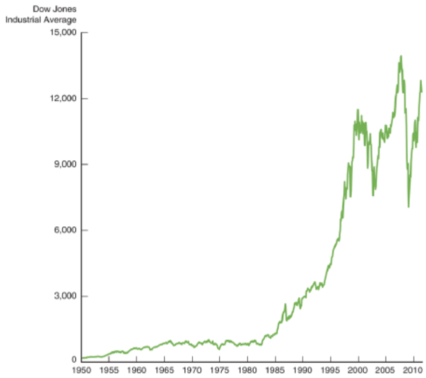
The Bond Market

- Collateral: something of value that by agreement becomes the property of the lender if the borrower defaults.
- The higher the collateral the lower the risk (and therefore interest rate)
- Other elements of interest rate determination:
  - Repayment time
  - Amount of loan
  - Type of collateral
  - Risk of borrower default
    the higher the risk the higher will be the rate of return.
  - Home mortgage rates are lower than vacation loans because mortgage loans are backed by collateral.

The Bond Market

- Equally risky assets must have the same rate of return If not, there will likely be arbitrage
- Rate of Return: the implied interest rate (%) the bond earns.
- Arbitrage: the buying and selling of equally risky assets (to exploit differences in price).
- Interest rates and bond prices move in opposite directions Changing interest rates will change a bond's market value.
- Bond buyers face interest rate risk along with default risk.

Stock Prices as Measured by the Dow Jones Industrial Average, 1950–2011



Source: Based on Dow Jones Indexes: http://nance.yahoo.com/?u.

The Stock Market

- A stock (or a share) is a certiBcate of ownership in a corporation.
- Stocks are traded in organized markets called stock exchanges.
- New York Stock Exchange (NYSE) is the largest. Tokyo Stock Exchange (TSE) is the second largest.
- Sales of new shares:
  - IPO (initial public offering): the Brst time a corporation sells stock to the public in order to raise capital
  - Typically used to buy new capital goods.
- Stock markets encourage investment and growth.

What Happens When Intermediation Fails?

Insecure Property Rights

- Some governments fail to protect property rights. Saved funds can be conBscated, frozen, and otherwise restricted.
  Result: people are reluctant to put their savings in domestic institutions.
- Example: Argentina and Brazil
  Both have a history of freezing bank accounts. Argentines and Brazilians save less.
  Result: less investment and lower economic growth.

Controls on Interest Rates and InCation

- Usury Laws: create legal ceilings on interest rates.
  Result: less saving and investment.

What Happens When Intermediation Fails?

InCation

- When combined with controls on interest rates, inCation destroys the incentive to save.
- Nominal interest rate: the named rate; the rate on paper.
- Real interest rate: the rate of return after adjusting for inCation.
- Real interest rate = Nominal interest rate – InCation rate

Country	Years	Real Interest Rate (%)	Per capita growth (%)
Argentina	1975-1976	-69	-2.2
Bolivia	1982-1984	-75	-5.2
Chile	1972-1974	-61	-3.6
Ghana	1976-1983	-35	-2.9
Peru	1976-1984	-19	-1.4
Poland	1981-1982	-33	-8.6
Sierra Leone	1984-1987	-44	-1.9
Turkey	1979-1980	-35	-3.1
Venezuela	1987-1989	-24	-2.7
Zaire	1976-1979	-34	-6.0

What Happens When Intermediation Fails?

Politicized Lending and Government Owned Banks

- Example: Japan 1990 to 2005: Many banks were bankrupt or propped up by the government ("Zombie banks").
  They were not loaning funds for efBcient uses. Other banks were pressured to lend money to well connected political allies.
  Result: economic growth was zero during this period.

What Happens When Intermediation Fails?

Bank Failures and Panics

- Systemic problems usually lead to large scale economic crises.
- During the Depression, between 1929 1933: 11,000 banks (almost half of U.S. banks) failed.
- Ripple effects:
  - Businesses could not get working capital.
  - Many people lost their life savings, resulting in lower spending.
  - Huge amounts of bad loans on the books of Bnancial institutions.
  - Banks could not get funds to loan.

Mandatory Readings

Mishkin, Frederic S., The Economics of Money, Banking and Financial Markets, Pearson, Global Edition 2013

Further Material

Additionally, "Part IV Intertemporal Choice" from the following text may be used: Erik Angner, a course in behavioral economics, Palgrave MacMillan, 2012

Syllabus

Week	Topic	Reading Assignment
1	Introduction & Overview	Ch. 1
2	College Closed No Classes	
3	Overview of the Financial System	Ch. 2
4	Money	Ch. 3
5	Understanding Interest Rates	Ch. 4
6	Understanding Interest Rates	Ch. 4
7	The Behavior of Interest Rates	Ch. 5
8	College Closed No Classes	
9	Risk and Term Structure of Interest Rates	Ch. 6
10	Stock Markets & the EfBcient Market Hypothesis	Ch. 7
11	Transaction Cost & Asymmetric Information	Ch. 8
12	Financial Crisis & the Subprime Meltdown	Ch. 9
13	Banking and the Management of Financial Institutions	Ch. 10
14	Banking and Financial Regulation	Ch. 11
15	Final	

Grading

20% Participation
40% Quizzes
40% Final