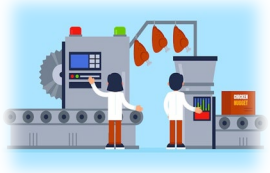
Lecture 5
Financial Markets and International Capital Flows

2

Lecture Outline

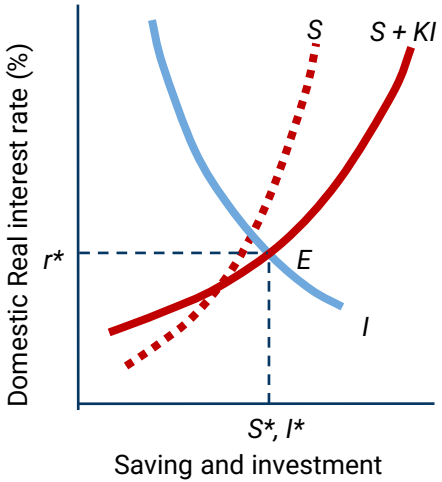
Supply of saving
(by households, firms, & government)

Financial System
Banking system
Bond market
Stock market



Demand of saving
(investment)

- International Capital Flows
  - Net capital inflow



3

Financial System

4

Financial System

- Financial system consists of financial institutions and financial markets that allocate saving from savers to borrowers
- 3 key components of financial system:
  - Banking system
  - Bond market
  - Stock market

5

Banking System

- Commercial banks: **financial intermediaries**
  - “Stand between” savers and borrowers
  - Accept deposits from individuals and businesses
  - Extend loans to borrowers using funds raised from savers
- Why don’t savers lend directly to borrowers?
  - Through specialization, banks have lower cost and better result of evaluating investment projects than an individual would
  - Banks pool the saving of many individuals to make large loans, lowering cost

6

Banking System

- Banks provide services to savers
  - Eliminate their needs to gather information about potential borrowers
  - Direct their savings toward higher-return, more productive investments
  - Provides easier payment options
- Banks provide services to borrowers
  - Provide access to credit for small businesses and homeowners
    - May be the only source of credit for some investments

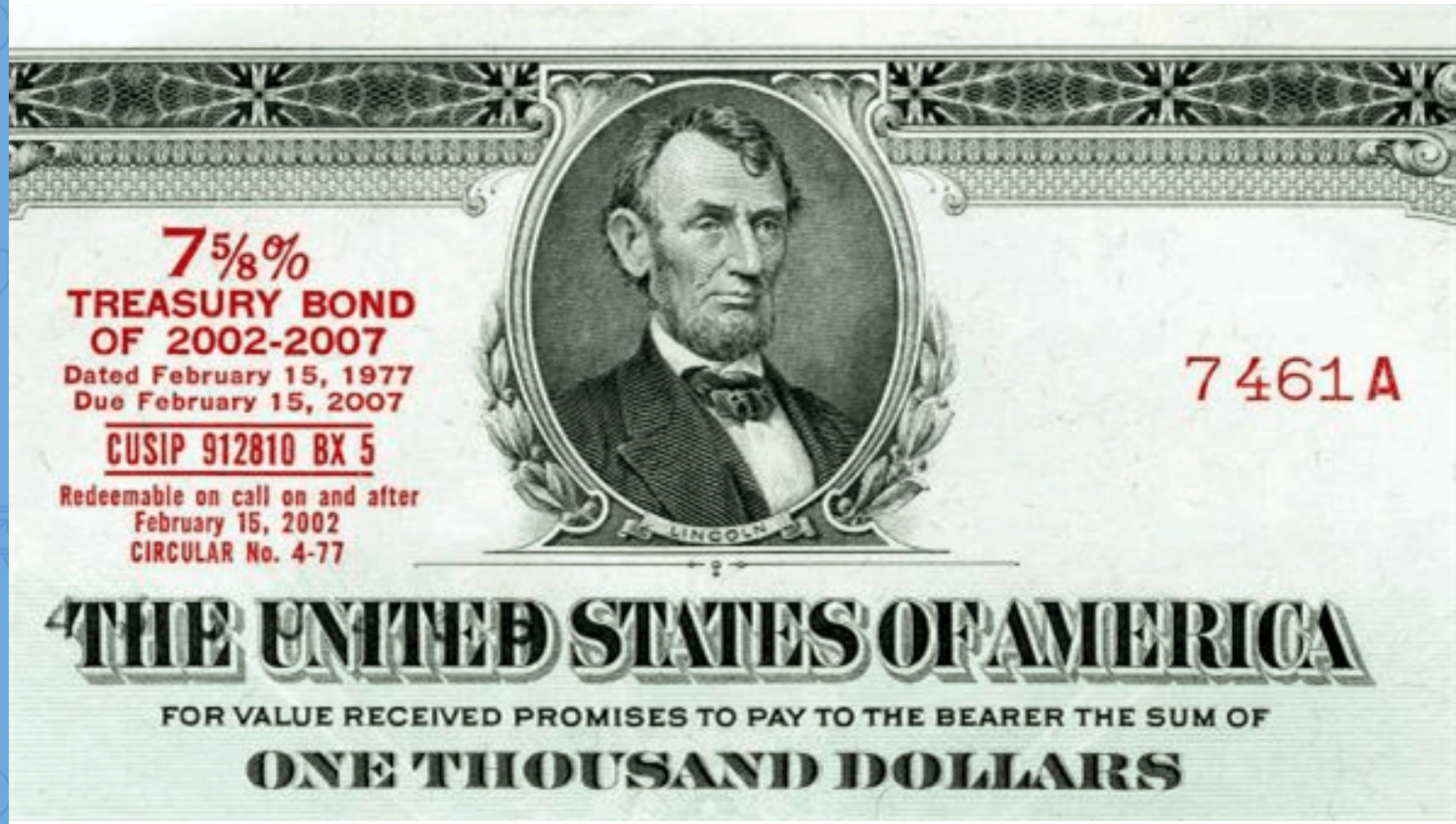
7

Bonds

- A **bond** is a legal promise to repay a debt, usually including both the principal amount and regular interest (or coupon) payments
- Each bond specifies
  - **Principal amount**, the amount originally lent
  - **Maturity date**, the date when the principal amount will be repaid
    - The **term** of a bond is the length of time from issue to maturation
  - **Coupon payments**, the periodic interest payments to the bondholder
  - **Coupon rate**, the interest rate that is applied to the principal to determine the coupon payments

8

Bonds


7 5/8%
TREASURY BOND
OF 2002-2007
Dated February 15, 1977
Due February 15, 2007
CUSIP 912810 BX 5
Redeemable on call on and after
February 15, 2002
CIRCULAR No. 4-77
LINCOLN
7461 A
THE UNITED STATES OF AMERICA
FOR VALUE RECEIVED PROMISES TO PAY TO THE BEARER THE SUM OF
ONE THOUSAND DOLLARS

9

Bonds

- Corporations and governments issue bonds
- The coupon rate depends on
  - The bond's term
    - 30 days to 30 years
    - Longer term, higher coupon rate
  - The issuer's credit risk
    - Probability the issuer will default on repayment
    - Higher risk, higher coupon rate
  - Tax treatment for the coupon payments
    - Lower taxes, lower coupon rates

Bond Market

- Bonds can be sold before their maturation date
  - Market value at any time is the price of the bond
  - Price depends on the *coupon rate* and the *interest rate* in financial markets

Selling a bond: An Example

- You bought a two-year government bond with principal amount of $1,000 for $1,000 on 1/6/2020
  - Coupon rate is 5%
  - $50 will be paid 1/6/2021
  - $1,050 will be paid 1/6/2022
- Suppose you want to sell the bond after one year
- Bond's price depends on prevailing interest rate
- Say, prevailing interest rate on newly issued one-year bonds is 6%; pays $1,060 in one year
- Your bond pays $1,050 in one year; less valuable
- How much are you able to sell your bond?

Selling a bond: An Example

A. Old bond, current price = Bond Price, pays $1,050 in one year

B. New bond, current price = $1,000, pays $1,060 in one year

- An investor who is considering investing in a bond (he doesn't care if it is an old bond or a new bond) will only purchase the old bond if it provides the same return as the new bond (6%)
- Bond Price * 1.06 = $1,050
  → Bond Price = $991
  Less than the principal amount of $1000

Selling a Bond

- Bond prices and interest rates are inversely related
- Higher interest rates
  → the new bond pays more
  → the old bond is worse by comparison
  → the old bond sells for less
- Lower interest rates
  → the new bond pays less
  → the old bond is better by comparison
  → the old bond sells for more

14

Stocks

- A share of **stock** (or **equity**) is a claim to partial ownership of a firm
  - Stockholders receive **dividends**, a regular payment received by stockholders for each share they own
  - Stockholders receive *capital gains* if the price of the stock increases
- Prices are determined in the stock market
  - Reflect supply and demand

15

Valuing a Stock

- FortuneCookie.com is selling its shares of stock
  - Your stockbroker estimates that a year from now, FortuneCookie.com would pay a dividend of $1, and the market price of the stock would be $80 per share
  - Prevailing interest rate offered by government bond is 6%
- Value of the new stock is $81 in 1 year
  - Stock price * 1.06 = $81
  - Stock price = $76.42

Valuing a Stock

- Value would be higher if:
  - Dividend were higher
  - Price of stock in one year were higher
  - Interest rate were lower
- If any of these changes, the current price of the stock will adjust
- Suppose the company's outlook improves and anticipated sale price jumps to $84, then

  Stock price * 1.06 = $84 + $1

  Stock price = $80.19

Risk Premium

- **Risk premium** is the rate of return investors require to hold risky assets minus the rate of return on safe assets
- Suppose interest on a safe investment is 6%
  - FortuneCookie.com is risky, so 10% return is required
  - Stock will sell for $80 in 1 year; dividend will be $1
  - (Stock price) (1.10) = $81
  - Stock price = $73.64
- Risk aversion increases the return required of a risky stock and lowers the selling price

Allocation of Savings

- Bond and stock markets channel funds from savers to borrowers with productive investment opportunities
  - Sale of *new* bonds or *new* stock can finance capital investment
- Two ways that improve the allocation of saving
  - Gather information about prospective borrowers: analysts/rating agencies evaluate business prospects and determine selling price of bond/stock
  - Help savers share risks of lending through diversification

International Capital Flows

20

International Capital Flows

- **International capital flows** are purchases or sales of real and financial assets across international borders
  - **Capital inflows** are purchases of domestic assets, e.g. stocks, bonds, land and buildings, by foreign households and firms
    - Economically equivalent to *borrowing* in the international financial markets
  - **Capital outflows** are purchases of foreign assets by domestic households and firms
    - Economically equivalent to *lending* in the international financial markets
  - **Net capital inflows** (KI) are capital inflows minus capital outflows

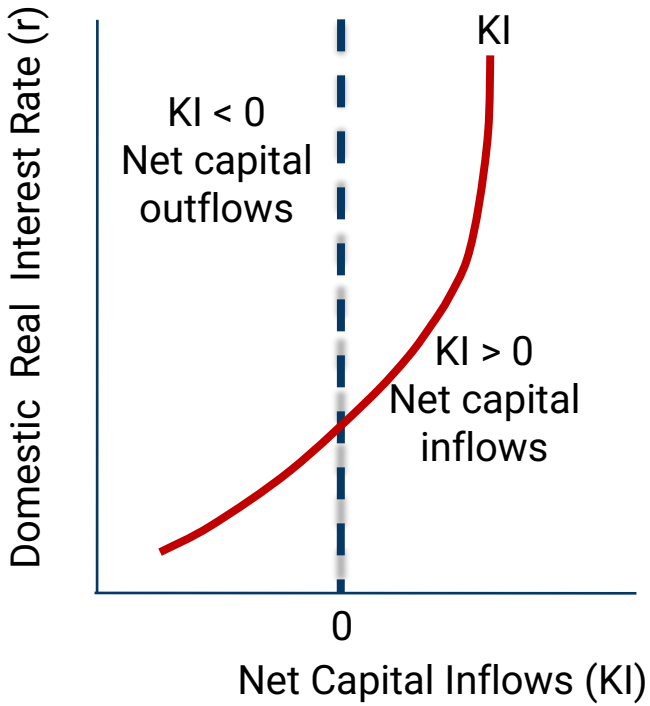
21

Determinants of International Capital Flows

- Why would foreigners want to acquire Singapore assets? Why would Singaporeans want to acquire assets abroad?
- Basic factors that determine the attractiveness of any asset
  - Risk
  - Return

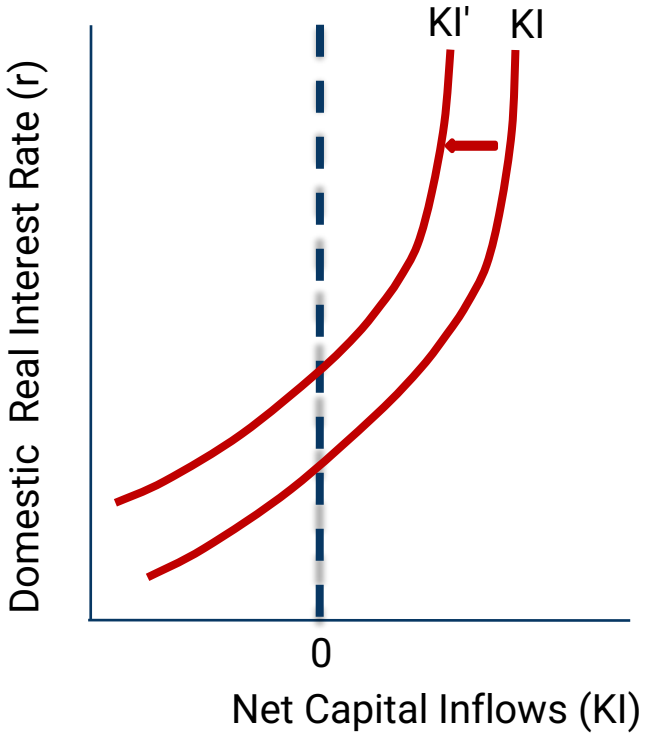
Return and Capital Inflows

- Capital flows respond to real interest rates
  - Money goes where returns are highest
  - Higher domestic interest rates mean greater capital inflows



Risk and Capital Inflows

- For a given real interest rate, increase in riskiness of domestic assets decreases capital inflows
  - Foreigners are less willing to buy domestic assets
  - Domestic savers are more willing to buy foreign assets
  - Shifts the capital inflow curve to the left



Trade Balance and Net Capital Inflows

- **Trade balance, NX**
  - Net exports; exports minus imports
  - Difference between value of g & s exported by a country and value of g & s imported by the country
- **Net capital inflows, KI**
  - Difference between purchases of domestic assets by foreigners and purchases of foreign assets by domestic residents
- In any given period, trade balance and net capital inflows sum to zero
  - **NX + KI = 0**

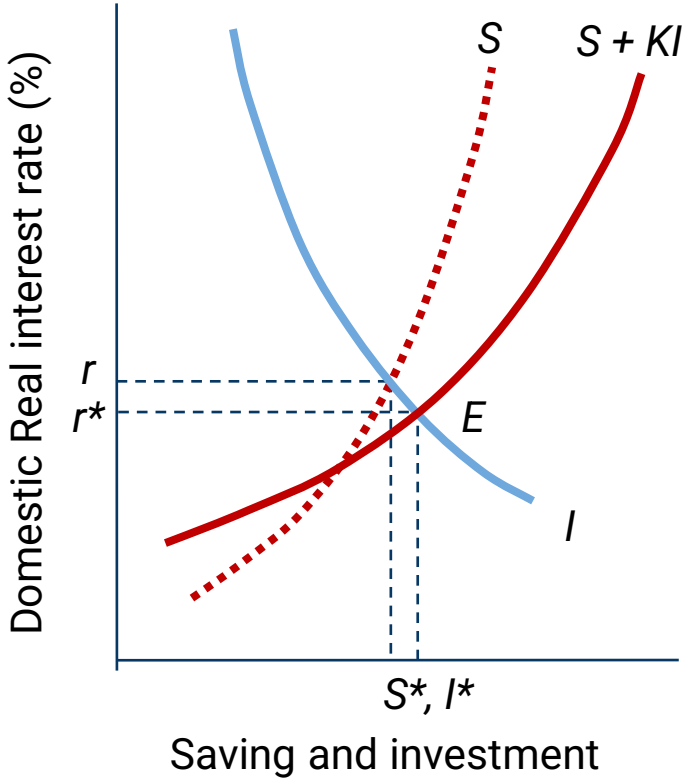
Trade Balance and Net Capital Inflows

- NX + KI = 0
- U.S. resident purchases Japanese car for $20,000
  - Imports = $20,000
- What will the Japanese manufacturer do with the $20,000?
  - Option 1: purchase $20,000 of U.S. goods and services so exports = $20,000
    - NX = 0, KI = 0
  - Option 2: purchase U.S. bonds or U.S. real estate
    - NX = – $20,000, KI = $20,000
  - Option 3: sell US dollars for yen
    - The purchaser of US dollars will have same two options
- International capital flows compensate for trade imbalances
  - Trade surplus means net capital outflows
  - Trade deficit means net capital inflows

Saving, Investment, and Capital Inflows

- Definition of output
  - $Y = C + I + G + NX$
- Solve for I
  - $Y - C - G - NX = I$
- National savings, S, is $(Y - C - G)$
  - $S - NX = I$
- Also, $NX + KI = 0$ OR $KI = -NX$
- So, $S + KI = I$
- Savings plus net capital inflows equals investment in new capital goods
  - Foreign savings can supplement domestic savings to create capital goods to support economic growth

Saving-Investment Diagram in an Open Economy



- In a closed economy, S = I
- In an open economy, S + KI = I
- Capital inflows mean more investment and lower interest rates

The Saving Rate and the Trade Deficit

- What causes trade deficits?
  - Not the production of inferior goods
  - Not the result of unfair trade restrictions
  - A low rate of national saving is the primary cause
- Recall S – I = NX
  - Hold I fixed
  - High level of S implies a high level of NX
  - Low level of S implies a low level of NX

The Saving Rate and the Trade Deficit

- Why is a low rate of national saving associated with a trade deficit?
  - Low savings implies high spending
  - High spending includes more spent on imports
  - High domestic spending leaves less available for export
  - High imports and low exports
- Trade deficit country receives capital inflows
  - Lack sufficient saving to finance domestic investment
  - Interest rate will rise and attract capital inflows

THANKS!

Any questions?

You can find me at

- ahysng@ntu.edu.sg