3543 Fiscal and Financial System in Japan A / KC3002 International Finance

Fall 2013

Lecture 6(Oct 25)
National Income Accounting

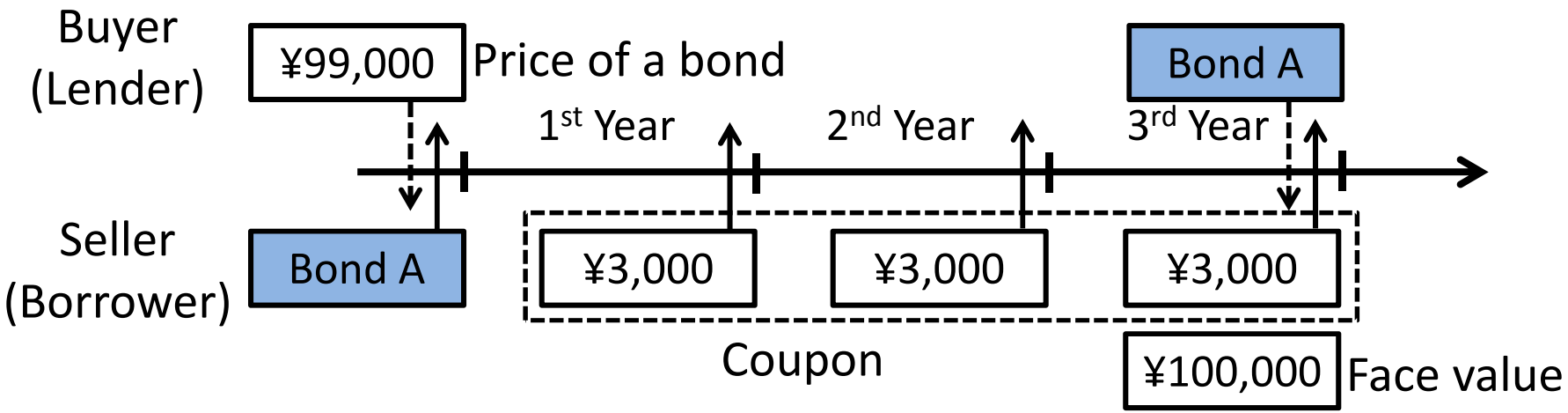
Hideyuki IWAMURA

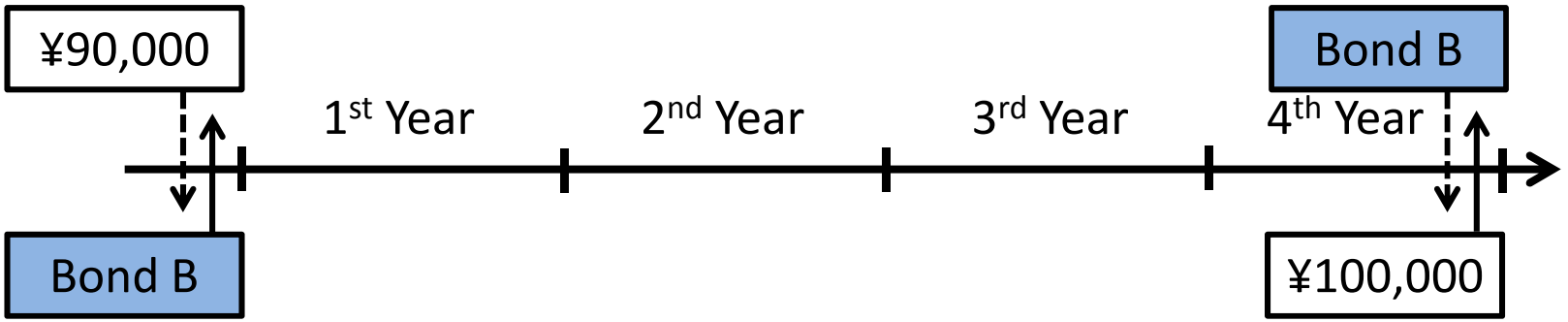
Faculty of International Studies

MEIJI GAKUIN UNIVERSITY

Rev 1

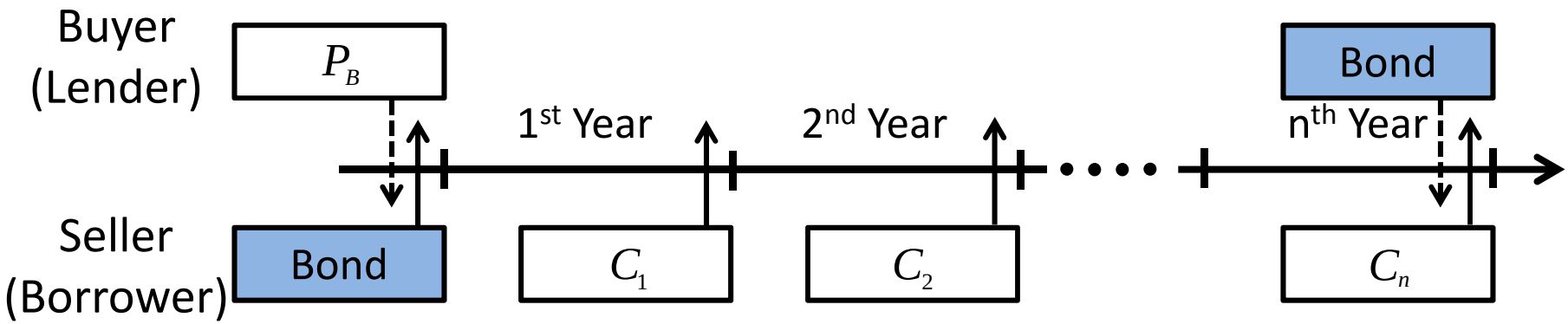
How to compare bonds?





Rev 2

Interest Rate Calculation



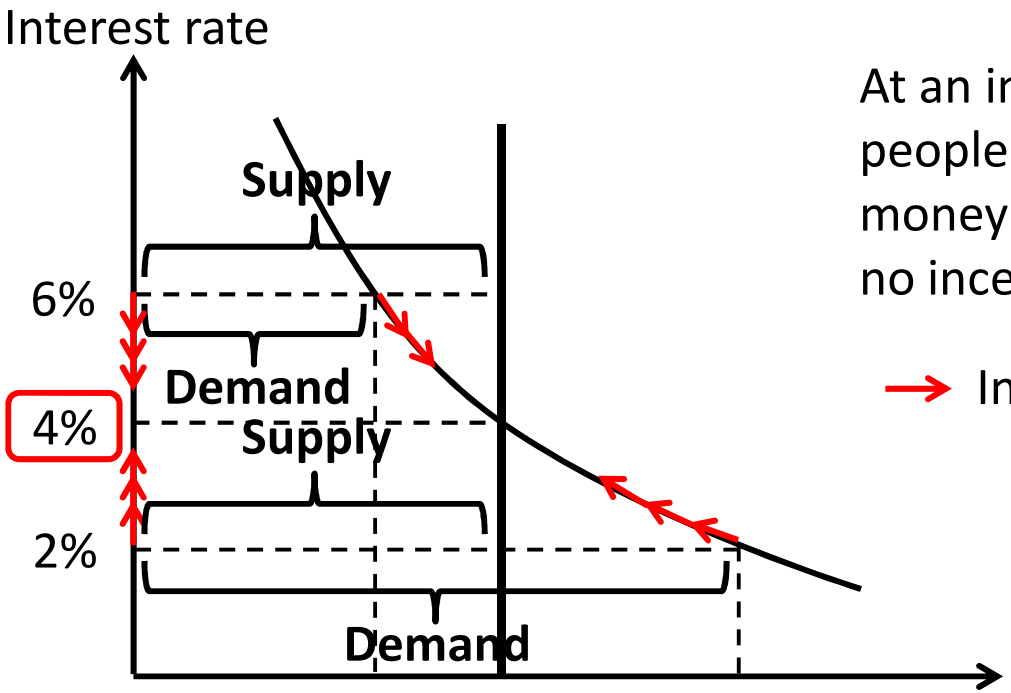
$$\frac{C_1}{1+i} + \frac{C_2}{(1+i)^2} + \cdots + \frac{C_n}{(1+i)^n} = P_B$$

If the stream of payments and the price of a bond are given, the equation gives the interest rate that the bond offers.

The equation also shows how the price of a bond and its interest rate are related.

Rev 3

Equilibrium Interest Rate



At an interest rate of 4 %, people hold exactly as much money as they want, thus have no incentive to take action.

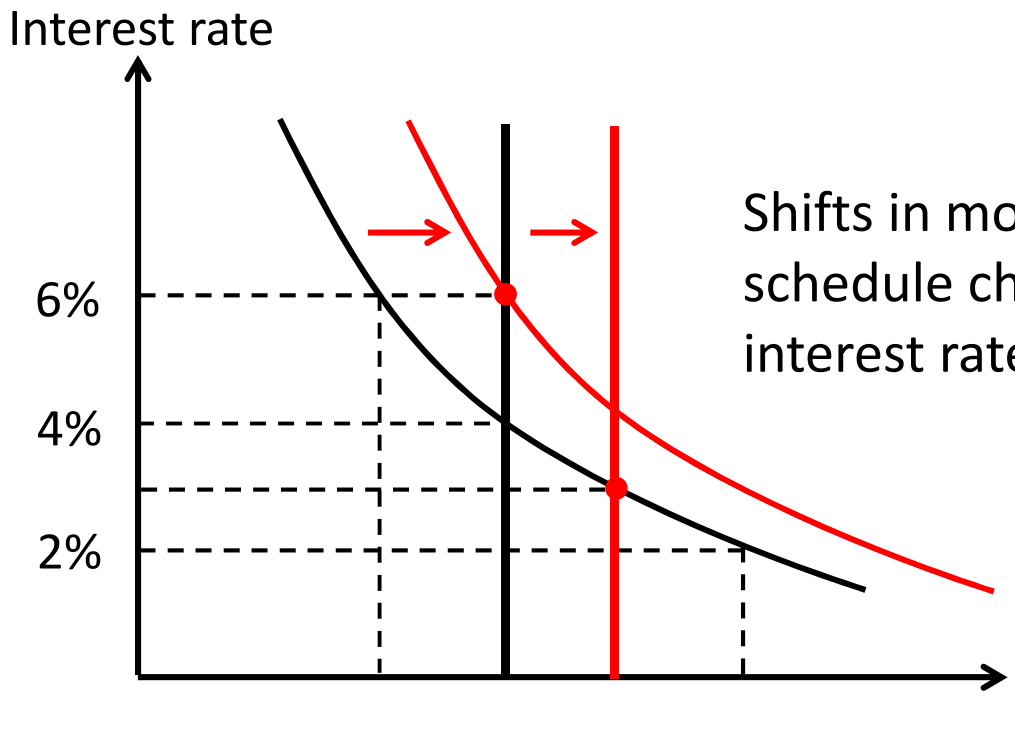
→ Interest rates stays at 4%.

At the other interest rates, people hold more or less money than they want, so they try to buy or sell bonds, affecting the price of bonds and pushing the interest rate toward 4%.

Interest rates are determined so that people will be willing to hold all the outstanding stock of money (and bonds).

Rev 4

Changes in Equilibrium Interest Rates



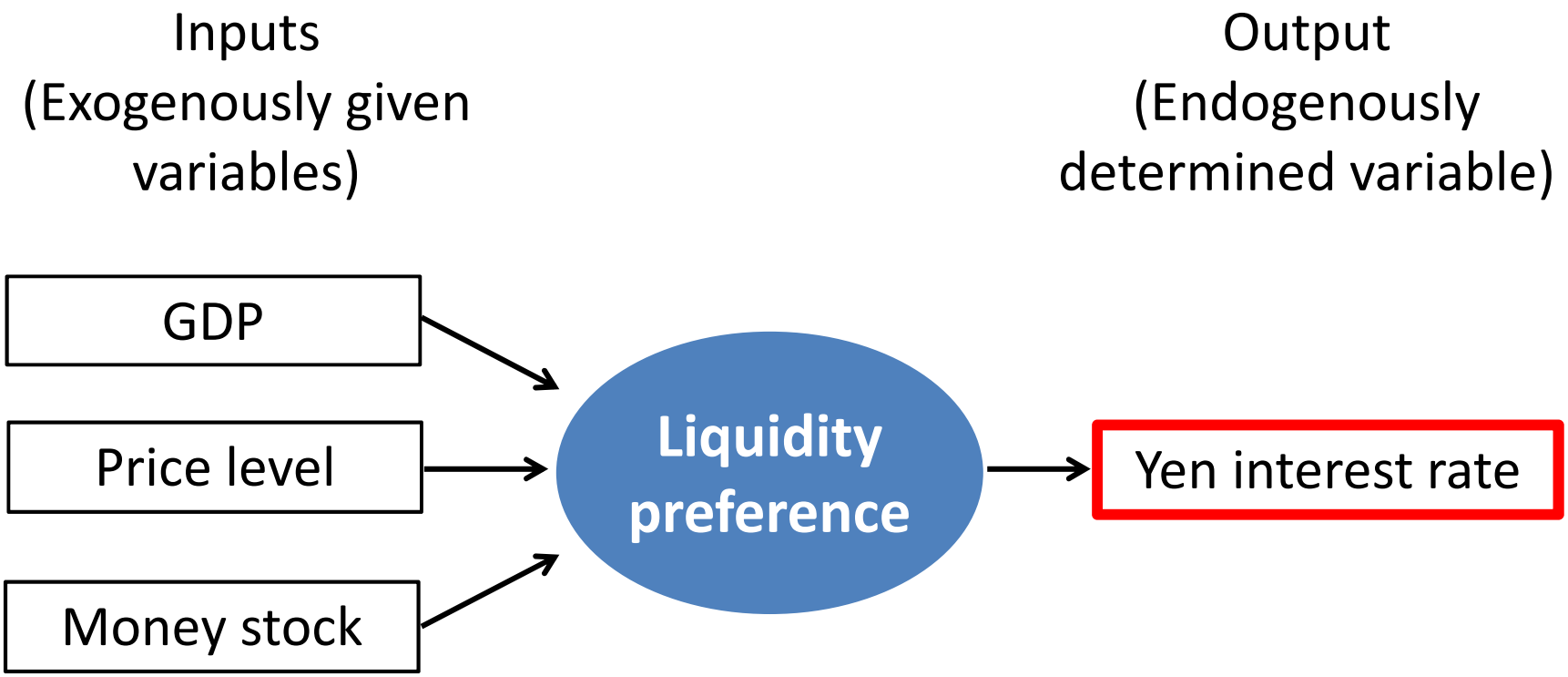
Shifts in money demand or/and supply schedule change the equilibrium interest rate.

- Changes in GDP shift the demand schedule.
- Changes in price level shift the demand schedule.
- Changes in money stock shift the supply schedule.

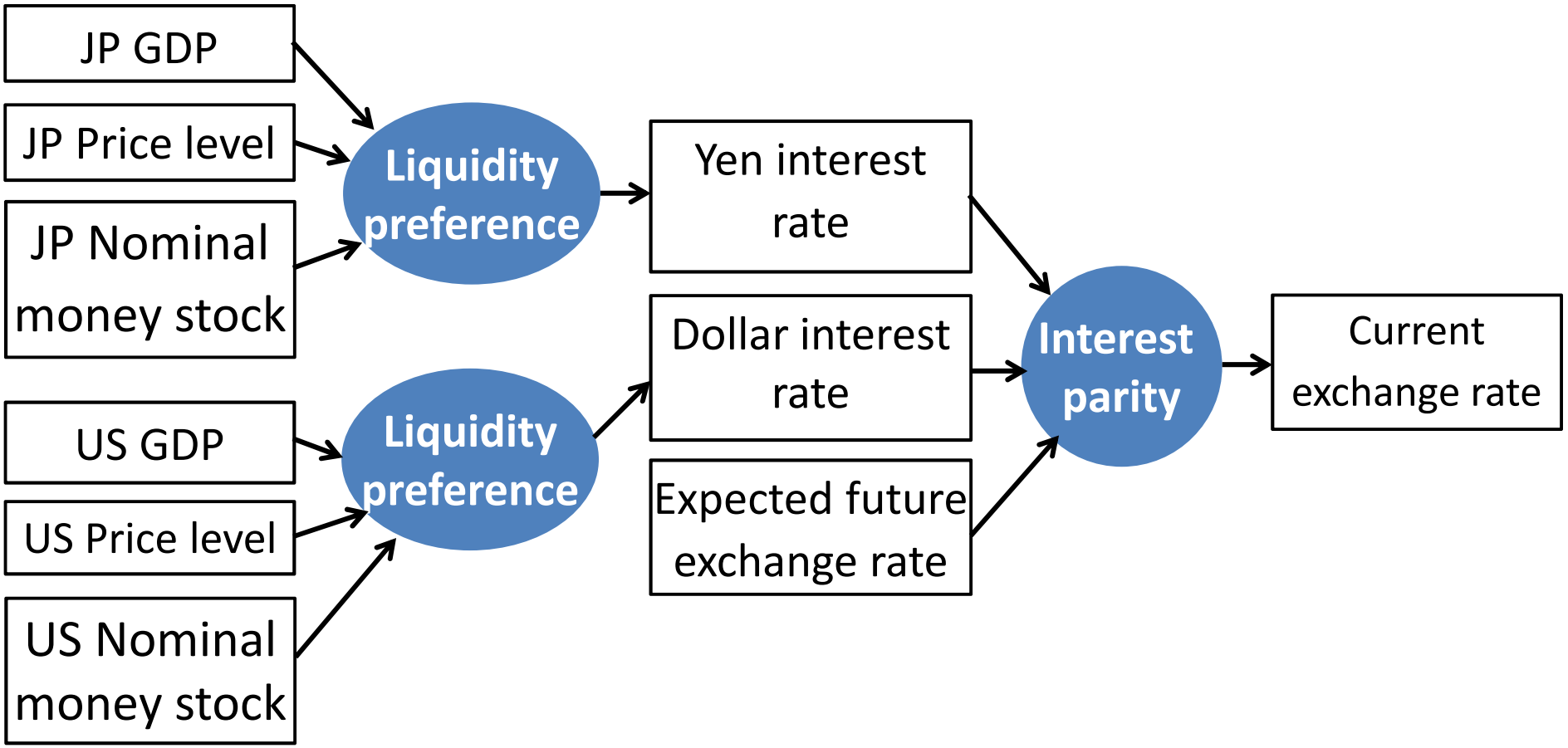
Rev 5

Events/Shocks	Effects on the equilibrium interest rate
Rise in GDP	Rise in interest rate
Fall in GDP	Fall in interest rate
Rise in price level	Rise in interest rate
Fall in price level	Fall in interest rate
Rise in money stock	Fall in interest rate
Fall in money stock	Rise in interest rate

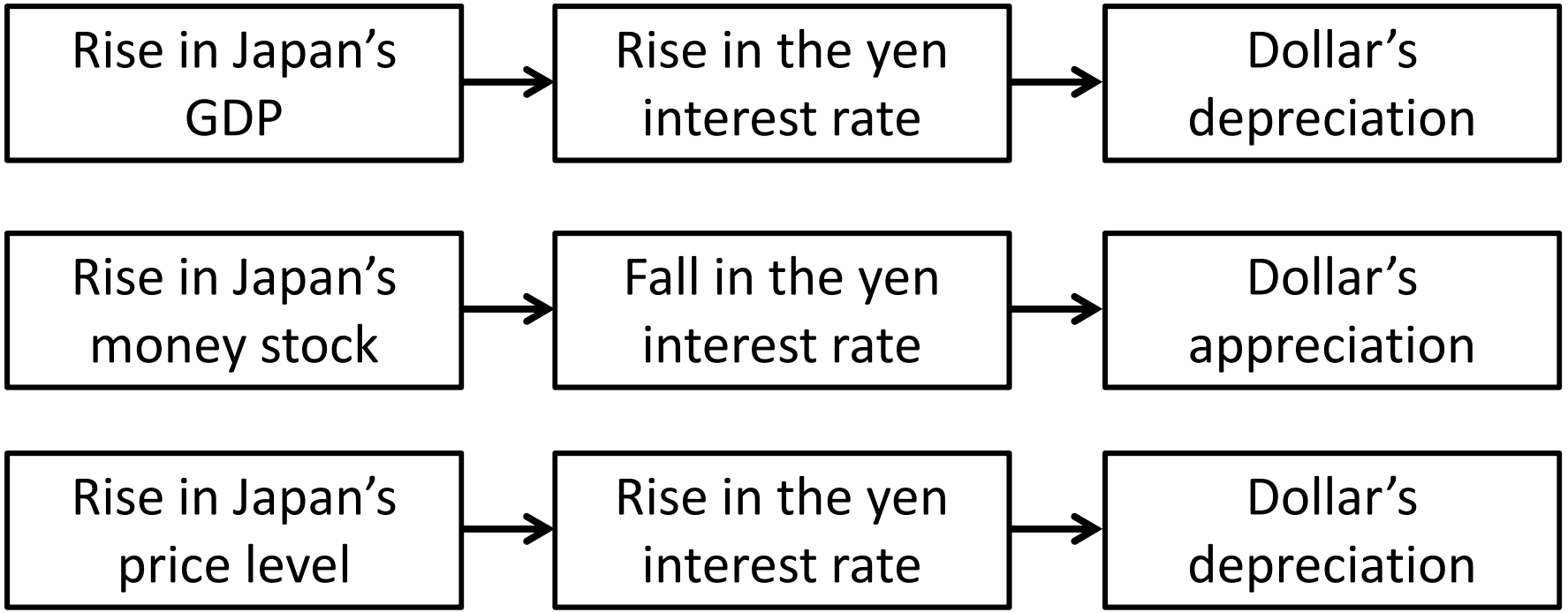
Liquidity Preference Model



Short-run Model of Exchange Rates

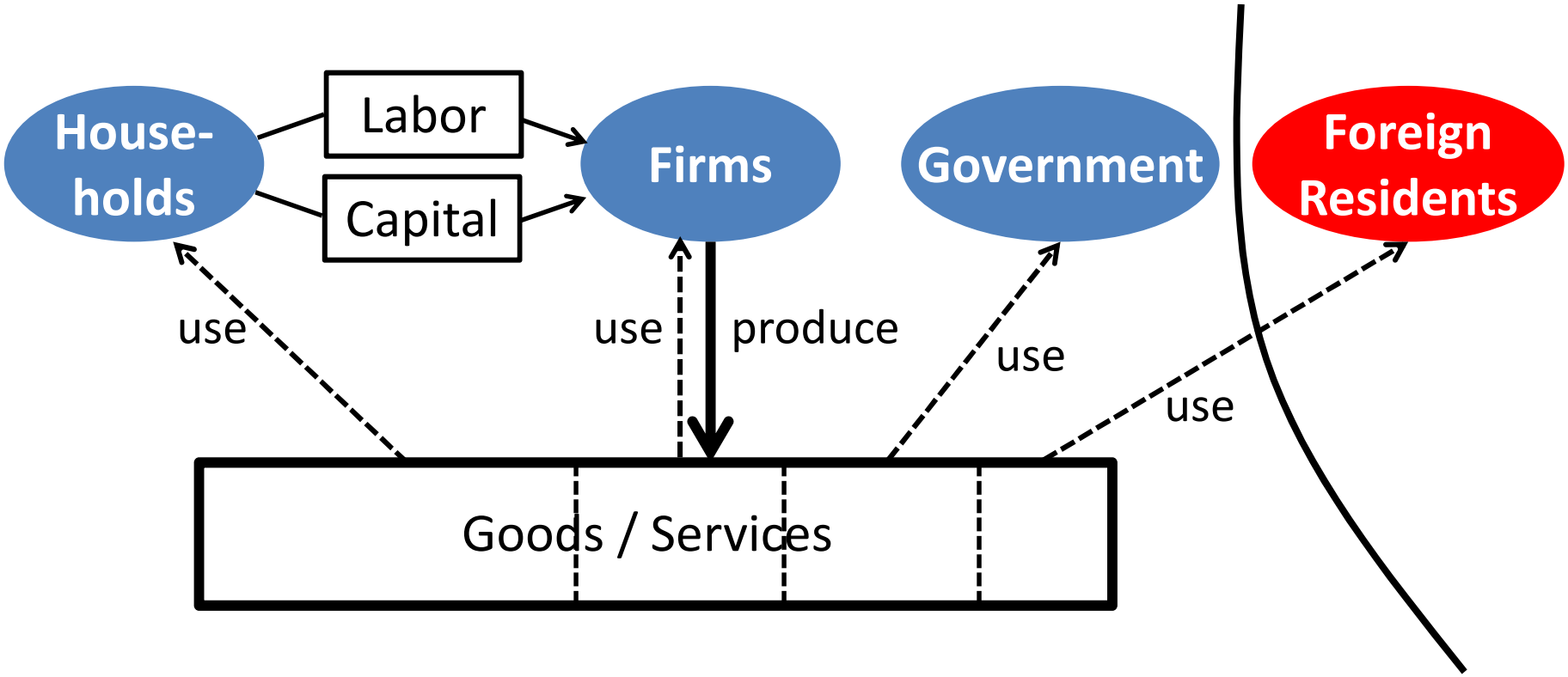


The Short-run Effects on Exchange Rates of GDP, Money Stock, and Price Level



NATIONAL INCOME ACCOUNTING

Overview of a National Economy



Three View Points

1. **Production Approach**
   How many goods and services are produced?

2. **Expenditure Approach**
   How are goods and services produced put into various uses?

3. **Income Approach**
   How are the values created allocated among the contributors to the production?

Production Approach

How many goods and services are produced within an economy?

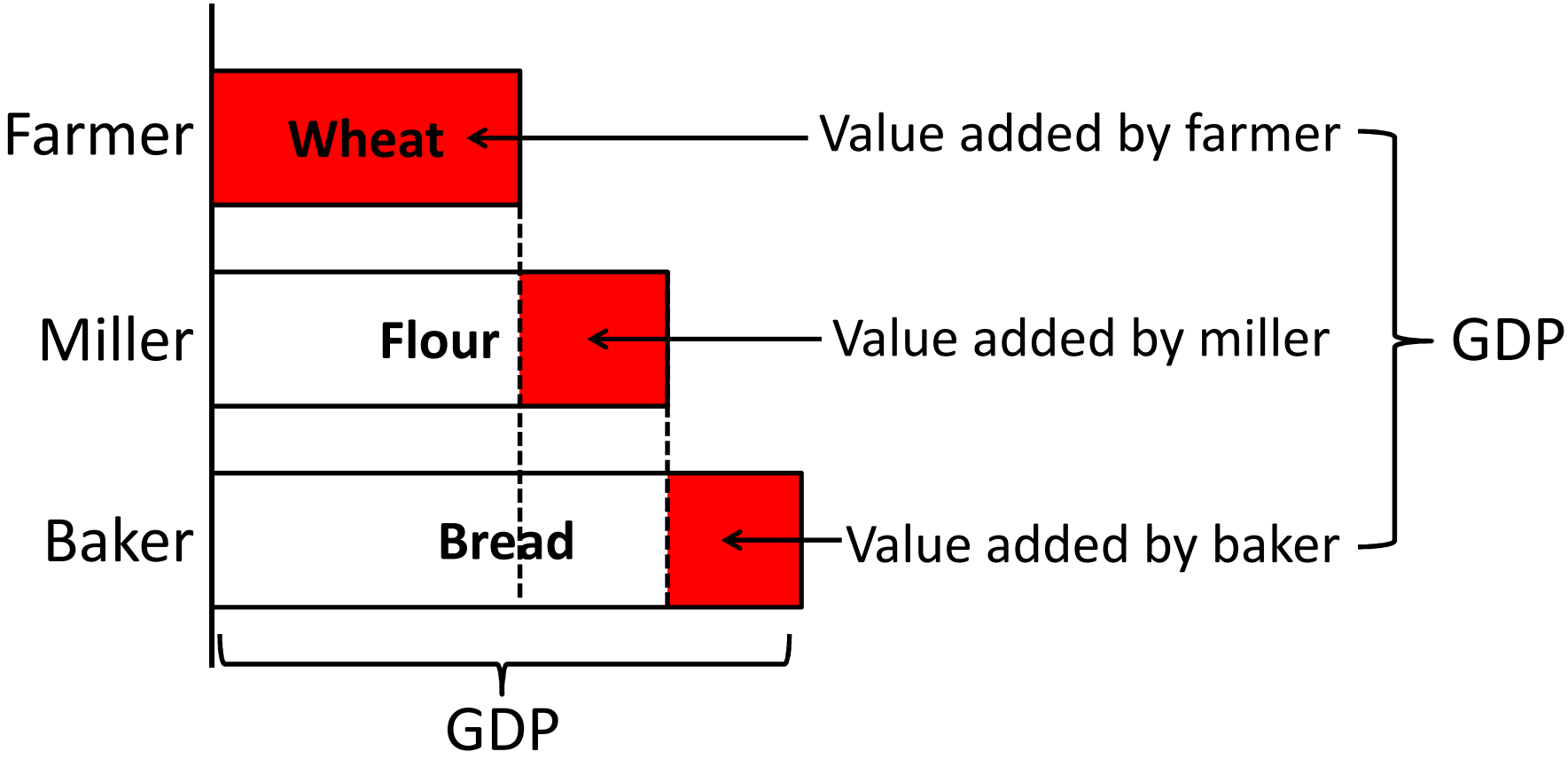
Gross Domestic Product, GDP

Total value of final goods and services produced within a country in a given time period

The value of intermediate goods(中間財) is not counted because it is already included as part of the market price of the final goods.

Adding up the value added at each stage of production yields the same result.

Production Approach



Because all the value added is include in the market price of final goods, adding up all the value added is equal to adding up all the value of final goods.

Expenditure Approach

How are the goods and services allocated among alternative uses?

1. **Consumption (C)**
   Some goods are bought by households and consumed.
2. **Investment (I)**
   Some goods are bought by firms for future use/production.
3. **Government Purchases (G)**
   Government also buys goods produced by private sector.
4. **Trade Balance (TB)**
   Some are exported to foreign residents.

Expenditure Approach

GDP is calculated by adding up the market value of all the expenditures on final goods. (Expenditure Approach to GDP)

$$C + I + G + EX$$

Domestic residents also spend on goods and services produced abroad (import), which are not part of domestic GDP and thus must be subtracted from the total expenditure.

$$C + I + G + \underbrace{EX - IM}_{TB} = GDP$$

The identity can be viewed as showing (1) how the GDP is calculated and (2)how the GDP is allocated among alternative uses.

What about unsold goods?

Part of the goods are left *unsold*, and no money is spent on them.

Firms have a stock of *inventories,* that is, the goods to be produced during that period but sold in later years.

Is the total expenditure smaller than the actual output, when firms add to the stock of inventories?
Adding up the market value of all expenditures does not always yield GDP?

Firms have inventories for the future sale, just as they buy new factories for the future production. === investment

Question

Suppose that, this year, firms produced no goods,
but households consumed ¥10 trillion of goods, which were part of inventories that firms had accumulated before.

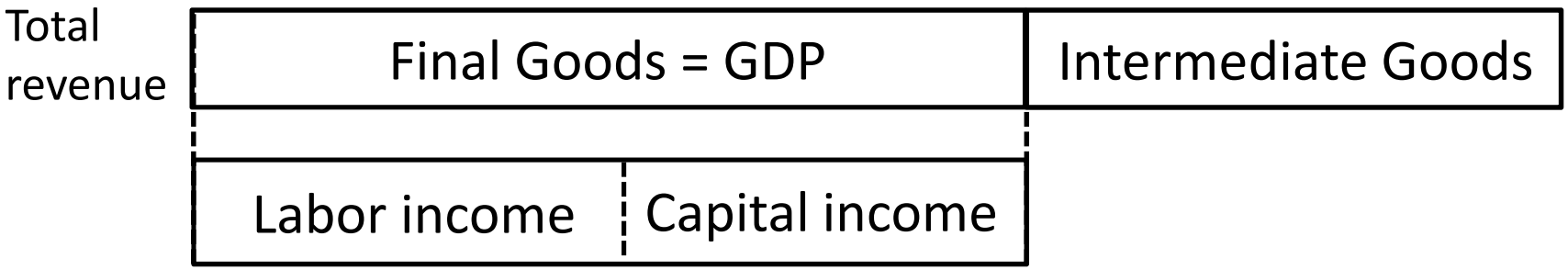
Where people produce nothing but spend,
does the GDP identity, GDP = C + I + G + TB, still hold?

Income Approach

Total sales minus intermediate goods is distributed among the holders of labor and capital, as wages, dividends, and interests.

Because total sales minus intermediate goods is GDP, total of labor and capital income is equal to GDP.

Can GDP measure the nation's income?



Income Approach: GNI

GDP is *not* a proper measure of a nation's income because
(1) it includes the value created by foreign owned factors operating within a home country
(2) it excludes the value created by home owned factors operating abroad.

Gross national income, *GNI*, is a more proper measure.

$$GNI = GDP + \underbrace{EX_{FS}}_{\text{Foreign income payments to domestic factors}} - \underbrace{IM_{FS}}_{\text{Domestic income payments to foreign factors}}$$

Income Approach: GNDI

$$GNDI = GNI + \underbrace{UT_{IN}}_{\text{Transfers received}} - \underbrace{UT_{OUT}}_{\text{Transfers given}}$$

$$GNDI = GDP + EX_{FS} - IM_{FS} + UT_{IN} - UT_{OUT}$$

$$GNDI = C + I + G + \underbrace{\underbrace{EX - IM}_{\text{Trade balance}} + \underbrace{EX_{FS} - IM_{FS}}_{\text{Net factor income from abroad}} + \underbrace{UT_{IN} - UT_{OUT}}_{\text{Net unilateral transfers}}}_{\text{Current Account}}$$

$$Y = C + I + G + CA$$

National Income Identity

GDP Accounting: Japan(2011FY)

	Total(billions of yens)	Share of GDP (percent)
GDP	513,742.1	
Consumption	304,745.4	59.3
Investment	77,773.2	15.1
Government purchases	119,511.2	23.3
Trade balance	11,966.0	2.3

Source: Cabinet Office, Government of Japan, www.esri.cao.go.jp.

GDP Accounting: US(2008FY)

	Total(billions of dollars)	Share of GDP (percent)
GDP	14,440	
Consumption	10,130	70.2
Investment	2,140	14.8
Government purchases	2,880	19.9
Trade balance	-710	-4.9

Jones, *Macroeconomics*, 2nd edition, Norton, 2011.
Source: U.S. Department of Commerce, Bureau of Economic Analysis, www.bea.gov.

Midterm

1. Midterm is held on November 8, 13:35 – 14:35, at the same room as the lecture.
2. After the exam, we'll have no class.
3. This is a closed book exam.
4. You are allowed to use a simple calculator. You can not use your cell phone, smart phone or laptop computer for calculation.
5. The exam includes 10 to 12 multiple-choice questions, two essay questions, and two questions that require some calculation. You can visit my website and see the midterm and final last year (Fall 2012).