

# Fiscal & Financial System in Japan A

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## Session 3 Money (continued)

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## **2. Money: Functions and Definitions**

# How Does “Money” Works?

## 1 Medium of Exchange

Money promote exchange among various goods.

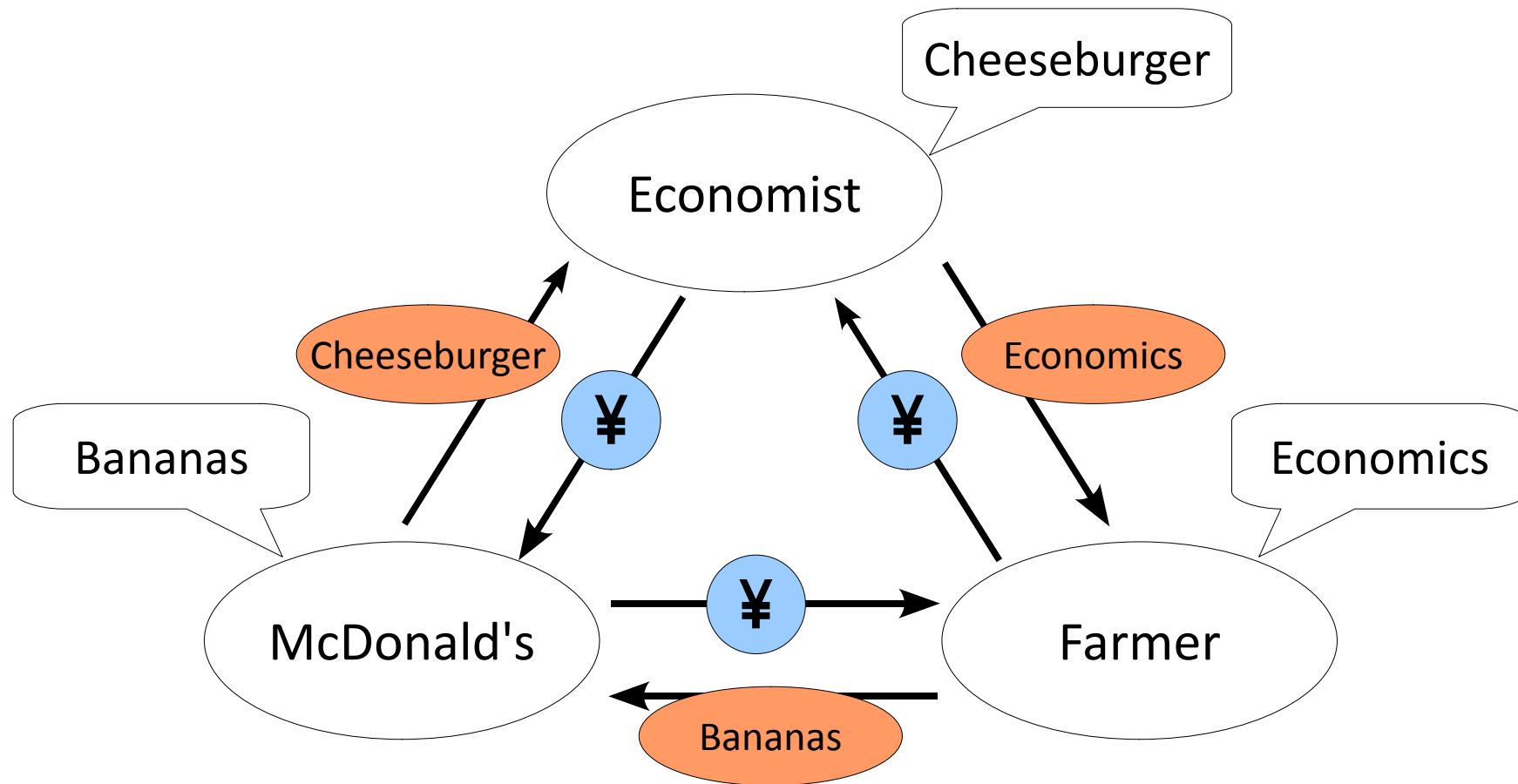
## 2 Unit of Account

The value of a good is always expressed in terms of money.

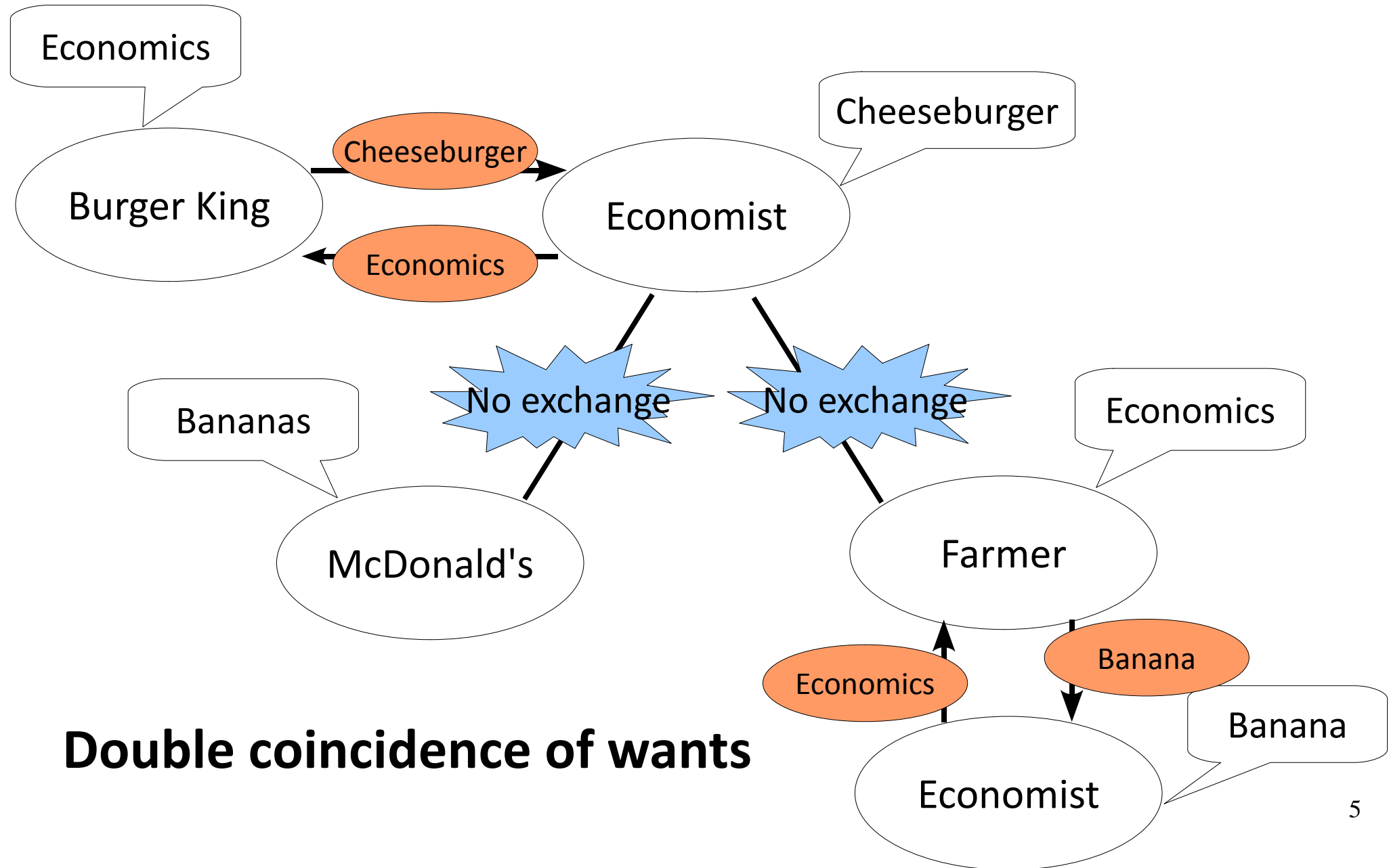
## 3 Store of Value

Money keeps the value of what we produced from deteriorating overtime.

# Money as a Medium of Exchange



# Exchange without Money

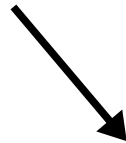


# Money promotes efficiency

Money saves us time & effort to spend in exchanging goods/services we produce.



More time & effort spent in producing goods/services.



Money helps us to exchange, thus enabling us to specialize in a small varieties of goods/services.



More time & effort spent in producing goods/services that we are good at.



Money expands the total production of our economy, thus promoting efficiency.

# Relative Prices

To make a decision on

What should we produce and how much?

What should we buy and how much?

We need to know ...

How many cheeseburgers are exchanged for our book?

How much banana is exchanged for our book?

⋮

The price of a good measured in terms of another good is called RELATIVE PRICE.

How many relative prices do we need to know/calculate?

# Cost of Calculation

	book	cheeseburger	banana
book	×		
cheeseburger	×	×	
banana	×	×	×

We need to calculate ...

$$\frac{(3 \times 3) - 3}{2} = \frac{3 \times (3 - 1)}{2} = 3 \text{ relative prices.}$$

In a world of N goods,

$$\frac{N \times (N - 1)}{2} \text{ relative prices.}$$

For 10 goods,  
45 relative prices.

For 100 goods,  
4950! relative prices.



# Money as an Accounting Unit

If prices of all goods are measured in terms of one common good, it is straightforward to know the relative value of any two goods.



Price of a good is always measured in terms of MONEY.

How much money is exchanged for our book?

How much money is exchanged for 1 kilograms of banana?

How much money is exchanged for a cheeseburger?

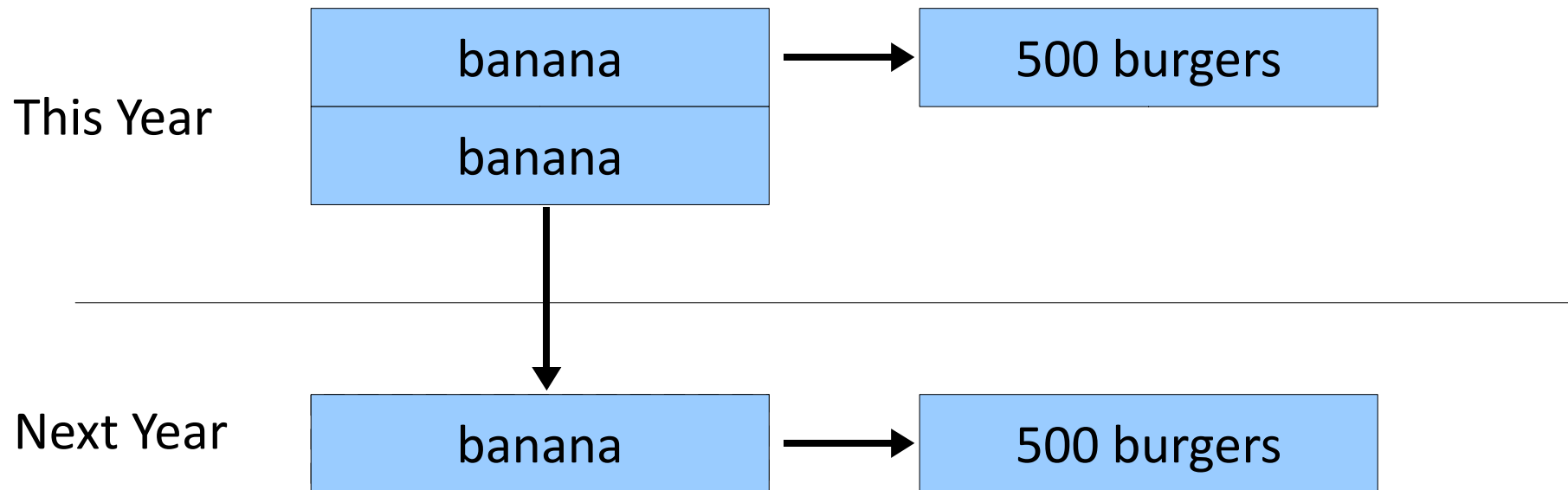
⋮

Money functions as an accounting unit, thus saving us a large cost of relative price calculation.

# Money as a Store of Value

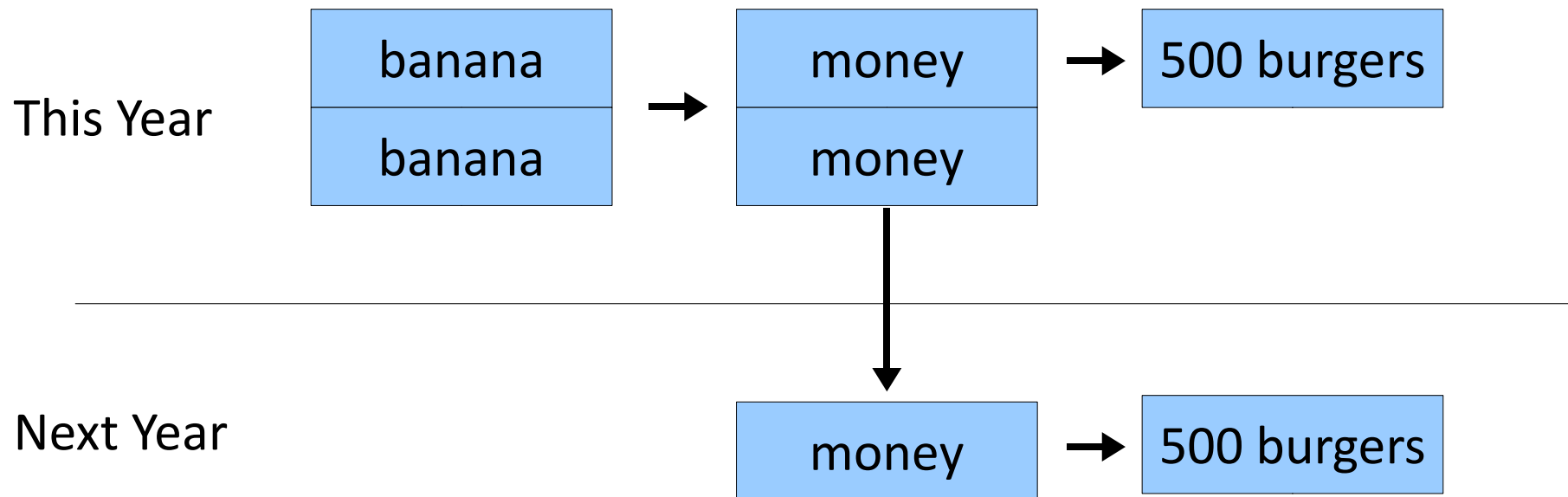
Suppose that a farmer has grown banana which could be exchanged for 1,000 cheeseburgers.

He wants to eat 500 cheeseburgers this year, and 500 next year.



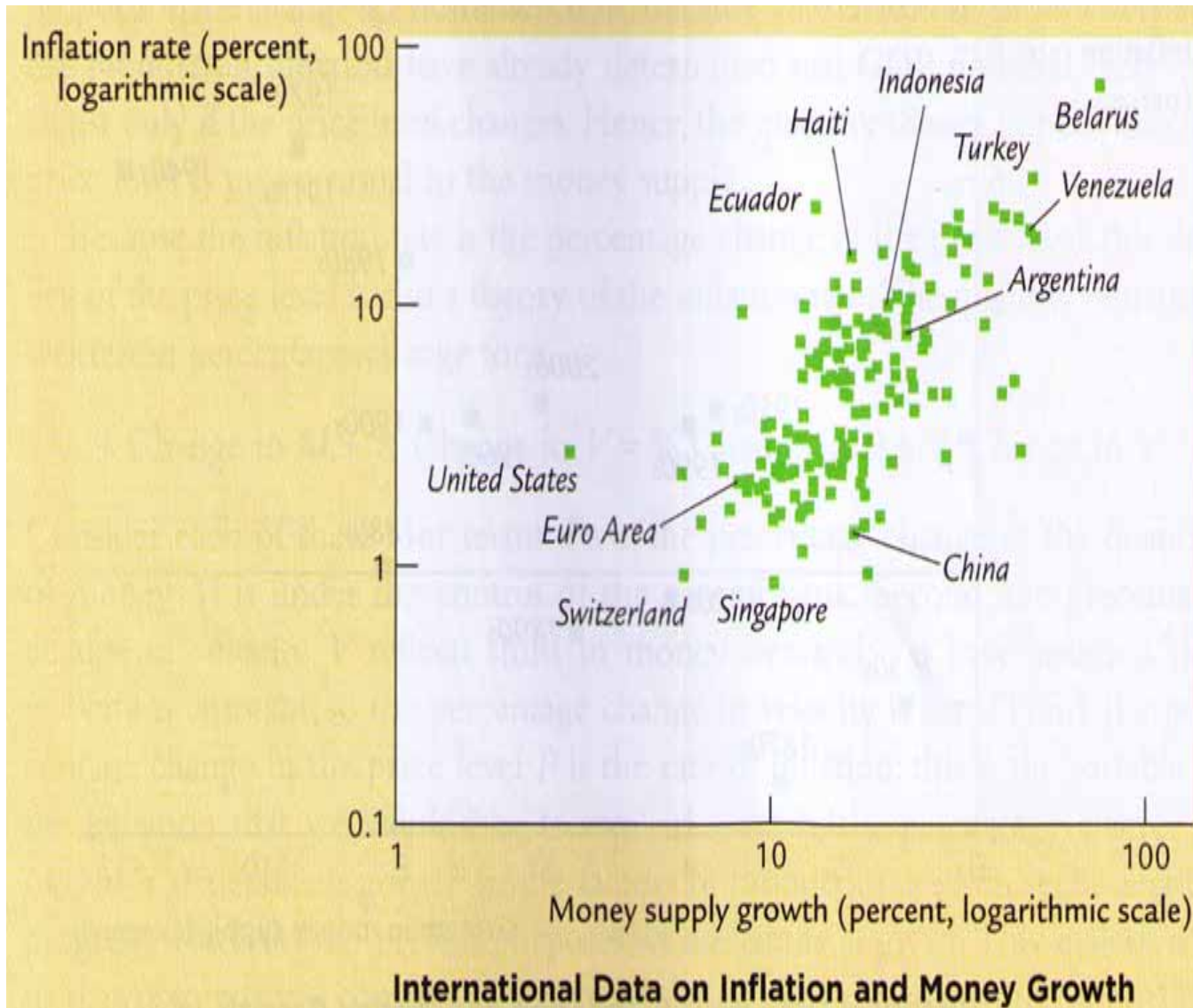
# Money as a Store of Value

Suppose that a farmer exchanges all of his banana for “money,” exchanges half of the money for cheeseburgers this year, and hold the other half until next year and exchanges for burgers.



Money does not deteriorate overtime.

# Money and Inflation



Mankiw(2009), Macroeconomics, p.92.

# What is Money?

Money functions as

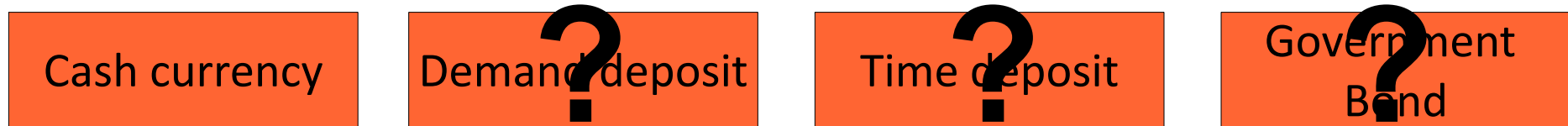
- a medium of exchange
- a unit of account
- a store of value

Do paper currencies and coins alone have these functions?

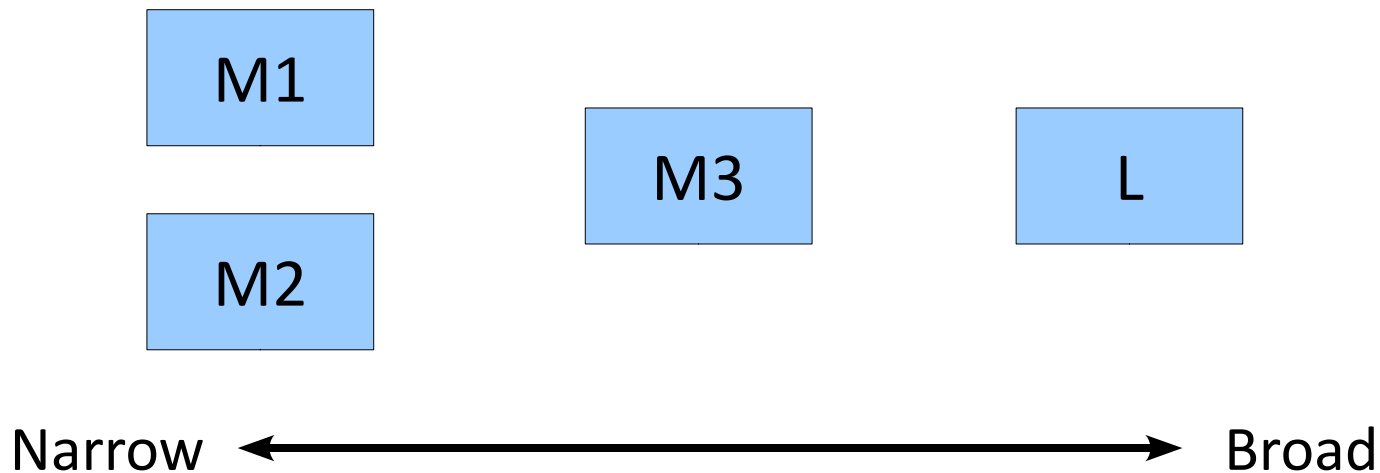
What should be counted in addition to cash currency when we measure the MONEY STOCK in our economy?

# Four Views on Money Stock

What should be counted in MONEY stock?



Four different views suggested by the Bank of Japan



# M1

$$\begin{aligned} \text{M1} &= \text{Cash currency in circulation} \\ &+ \\ &\text{“Deposit money”} \\ &\quad \left\{ \begin{array}{l} \text{Demand deposits} \\ \text{Current deposits} \\ \text{Ordinary deposits} \\ \dots \\ \text{Checks \& Notes} \end{array} \right. \end{aligned}$$

Demand deposits can be converted into cash at almost no cost, thus are very close to cash currency in their function.

# M2



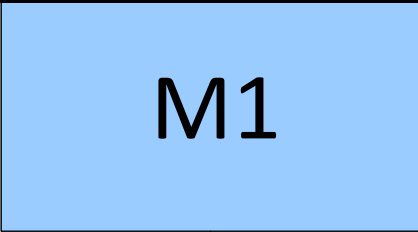
$$\begin{aligned} \text{M2} &= \text{Cash currency in circulation} \\ &\quad + \\ &\quad \text{Deposit money} \\ &\quad + \\ &\quad \text{“Quasi-money”} \\ &\quad \left\{ \begin{array}{l} \text{Time deposits} \\ \text{Foreign currency deposits} \end{array} \right. \\ &\quad + \\ &\quad \text{CD (Certificate of deposit)} \end{aligned}$$

Time deposits, CDs, and foreign currency deposits can be converted into cash at some but small cost, thus are relatively close to cash currency in their function.



# Difference between M1 and M2

Financial products surveyed

		Cash currency Demand deposits	Time deposits Foreign currency deposits CDs
Financial institutions surveyed	Bank of Japan Commercial Banks		 <b>M2</b>
	Japan Post Bank Credit Unions	 <b>M1</b>	

# M3 and L

M3 is a straight extension of M2.

M3 surveys the same range of financial products as M2, but a wider range of financial institutions than M2.

L surveys a wider range of financial products than M3, but the same range of financial institutions as M3

$$\begin{aligned} L &= M3 + \text{Pecuniary trusts} + \text{Investment trusts} \\ &\quad + \text{Bank debentures} \\ &\quad + \text{Straight bonds issued by banks} \\ &\quad + \text{CPs issued by financial institutions} \\ &\quad + \text{Government bonds} \\ &\quad + \text{Foreign bonds} \end{aligned}$$

(type of money)

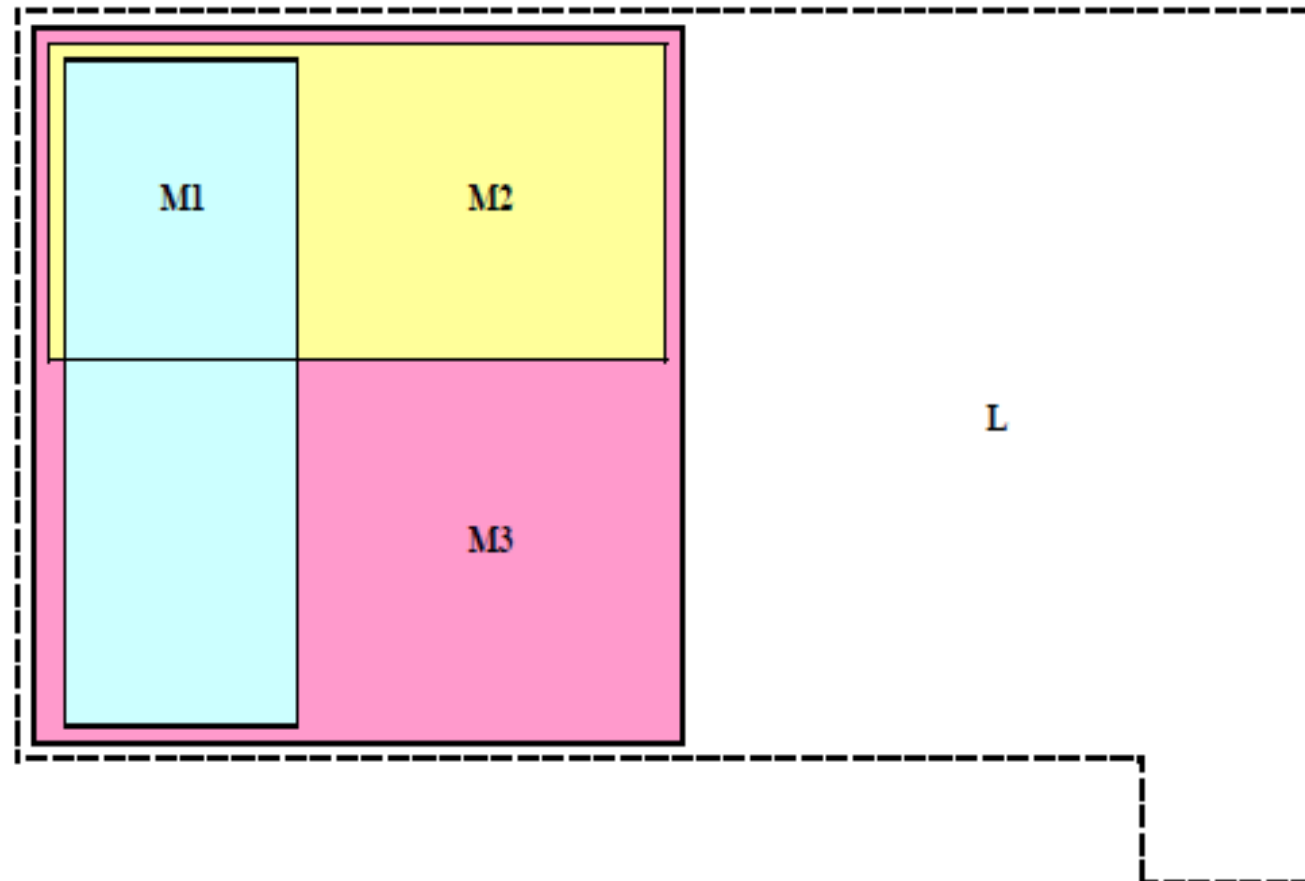
Cash Currency in Circulation Demand Deposits	Time Deposits etc. Foreign Currency Deposits CDs	Bank Debentures Straight Bonds issued by banks Pecuniary Trusts	Other Financial Products (Note 2)
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(money issuers)

Bank of Japan  
domestic banks (ex. Japan Post Bank)  
foreign banks in Japan  
*Shinkin* banks  
*Shinkin* Central Bank  
*Norinchukin* Bank  
*Shoko Chukin* Bank

Japan Post Bank  
agricultural cooperatives  
credit federations of agricultural cooperatives  
fishery cooperatives  
credit federations of fishery cooperatives  
labour banks  
*Rokinren* Bank  
Shinkumi Banks  
*Shinkumi* Federation Bank

insurance companies  
Central Government  
non-residents



Bank of Japan(2008), *Guide to Japan's Money Stock Statistics*

# Japan's Money Stock (March 2010)

( average amounts outstanding, trillions of yen)

M1	487.9	
	Currency in circulation	Deposit money
	73.6	414.3
M2	766	
M3	1065.1	
L	1440.4	