

LECTURE 2

24 January 2012

BIG PICTURE

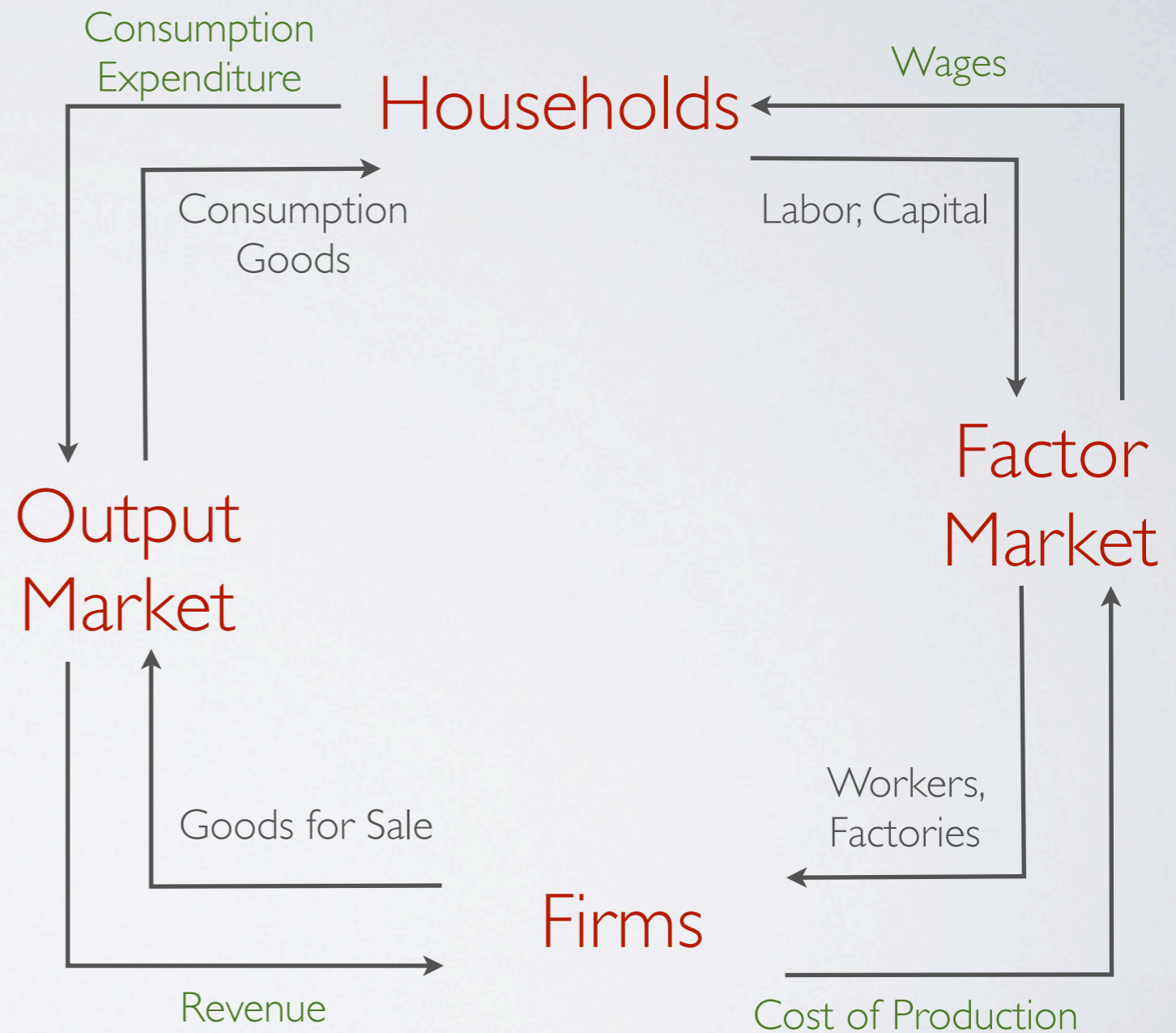
- How is wealth generated and moved in an economy?
- What differences are there in examining a micro-economy and the macroeconomy?
- In the aggregate economy, how do demand and supply determine equilibrium quantities and supply?
- What can disrupt an economy's equilibrium? How does it readjust in the long-run?

TOPIC 2 (CONT.)

Aggregate Demand, Supply, and Equilibrium

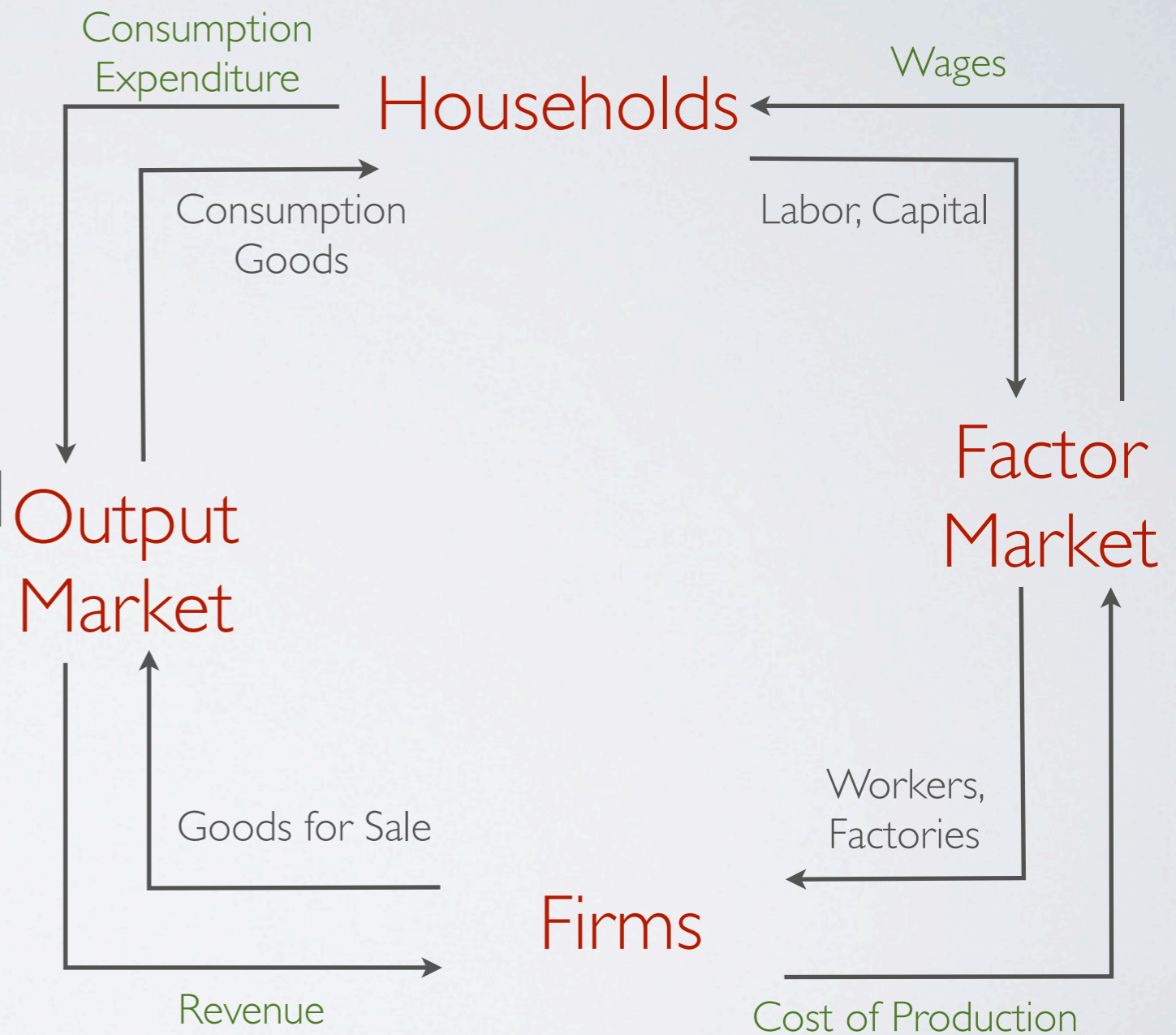
OUR ECONOMY

- Households (Consumers)
- Labor (Factor Market)
- Firms
- Sellers (Output Market)

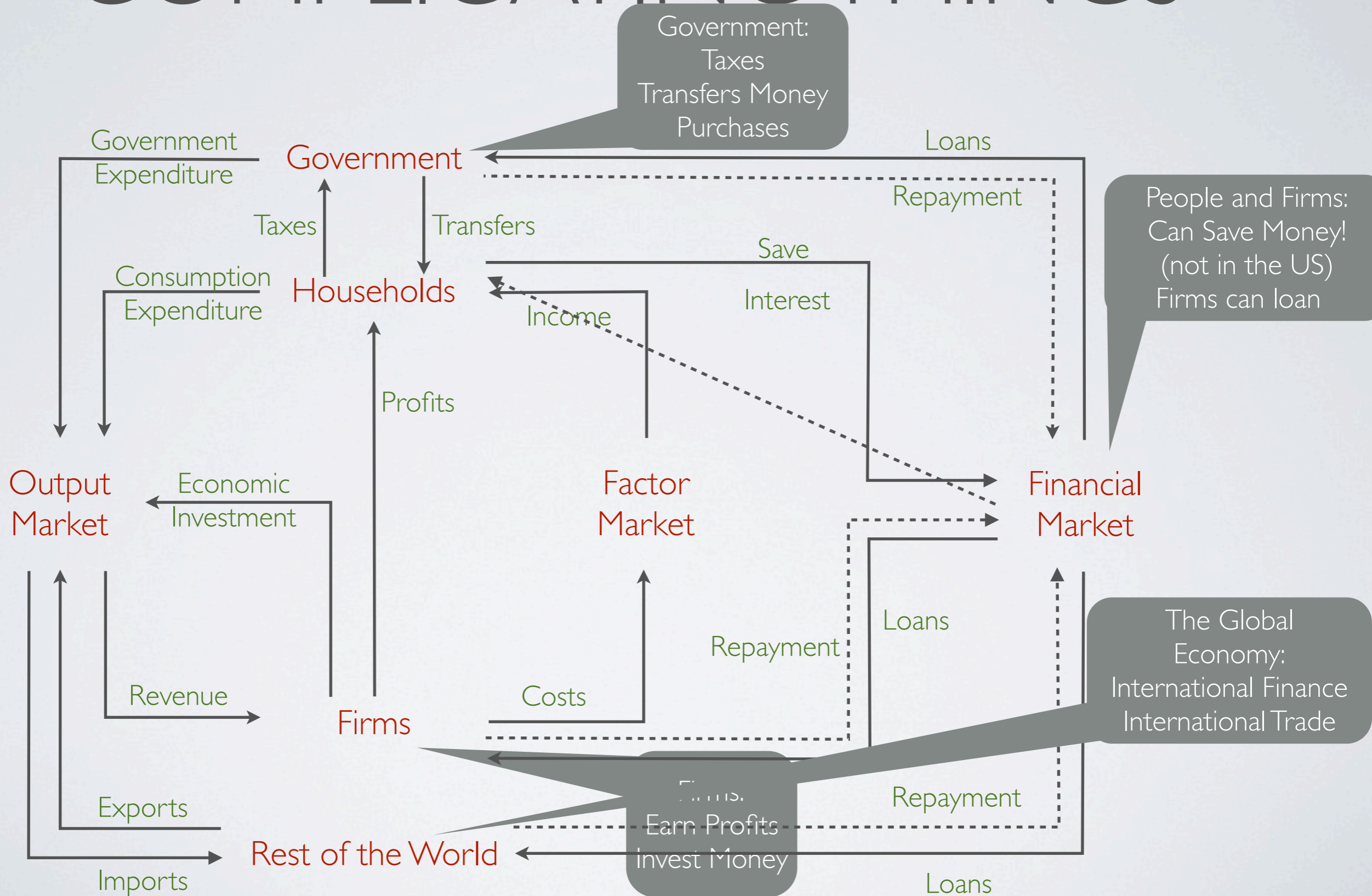


OUR ECONOMY

- Remember: This is a “closed diagram”
- No money can “leave”



COMPLICATING THINGS



AGGREGATE DEMAND

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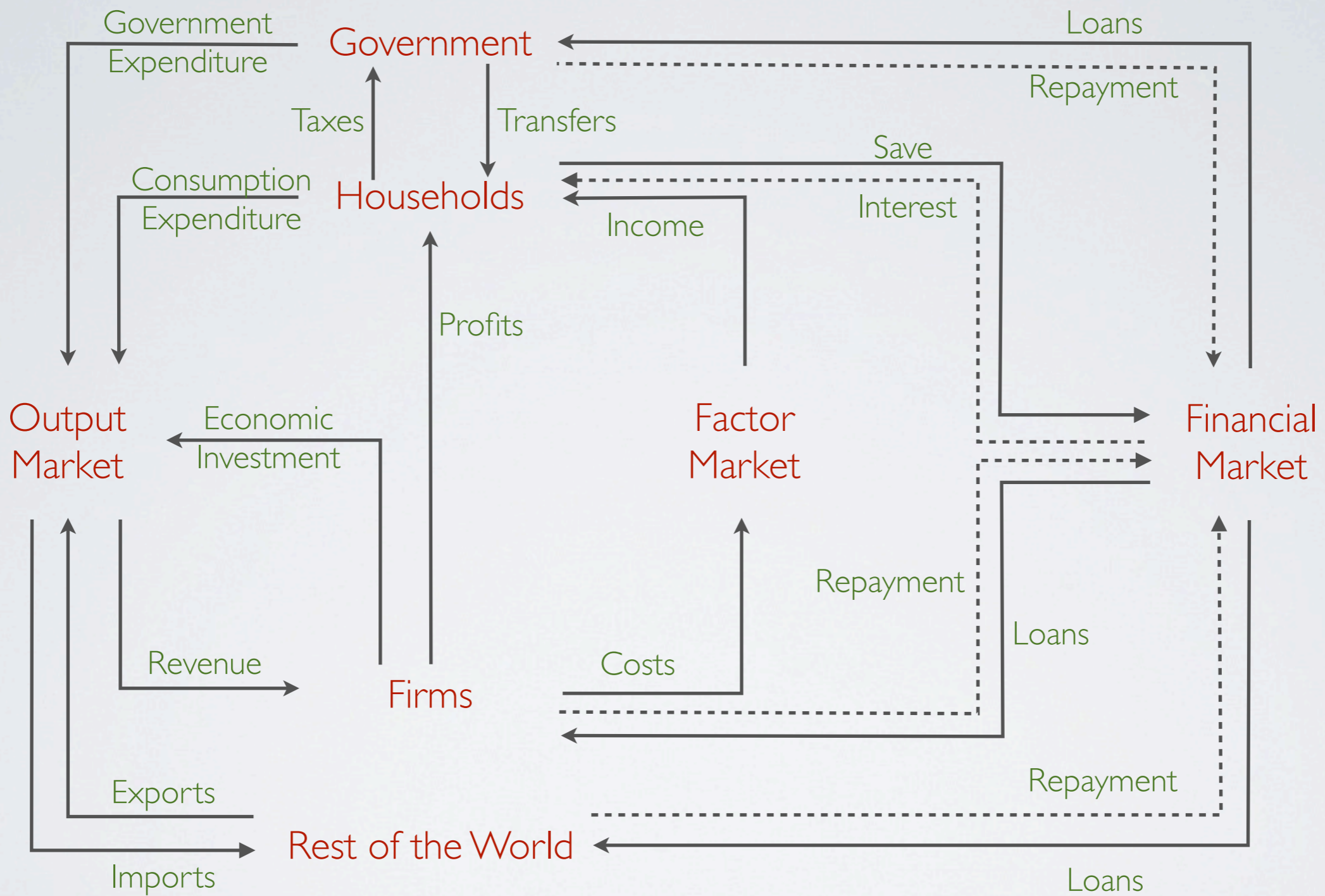


FROM MICRO TO MACRO

- Consumer Theory, Assumptions:
 1. People are rational
 2. People have unlimited wants
 3. People have limited income
- Recall (from Micro)
 - What assumptions force people to make choices?
 - **Law of Demand:** All other things equal, as price goes up, demand for that good decreases.
- Interested in **Aggregate Demand**, the sum of individual demand in the entire economy

COMPONENTS OF AGGREGATE DEMAND

- What “individual” demand do we have in the economy? (Hint: Circular Flow was not purposeless)



COMPONENTS OF AGGREGATE DEMAND

- What “individual” demand do we have in the economy? (Hint: Circular Flow was not purposeless)
- Look at the output market
 1. Consumer Expenditure
 2. Investment Spending
 3. Government Spending
 4. Export Spending (Minus Import Costs)

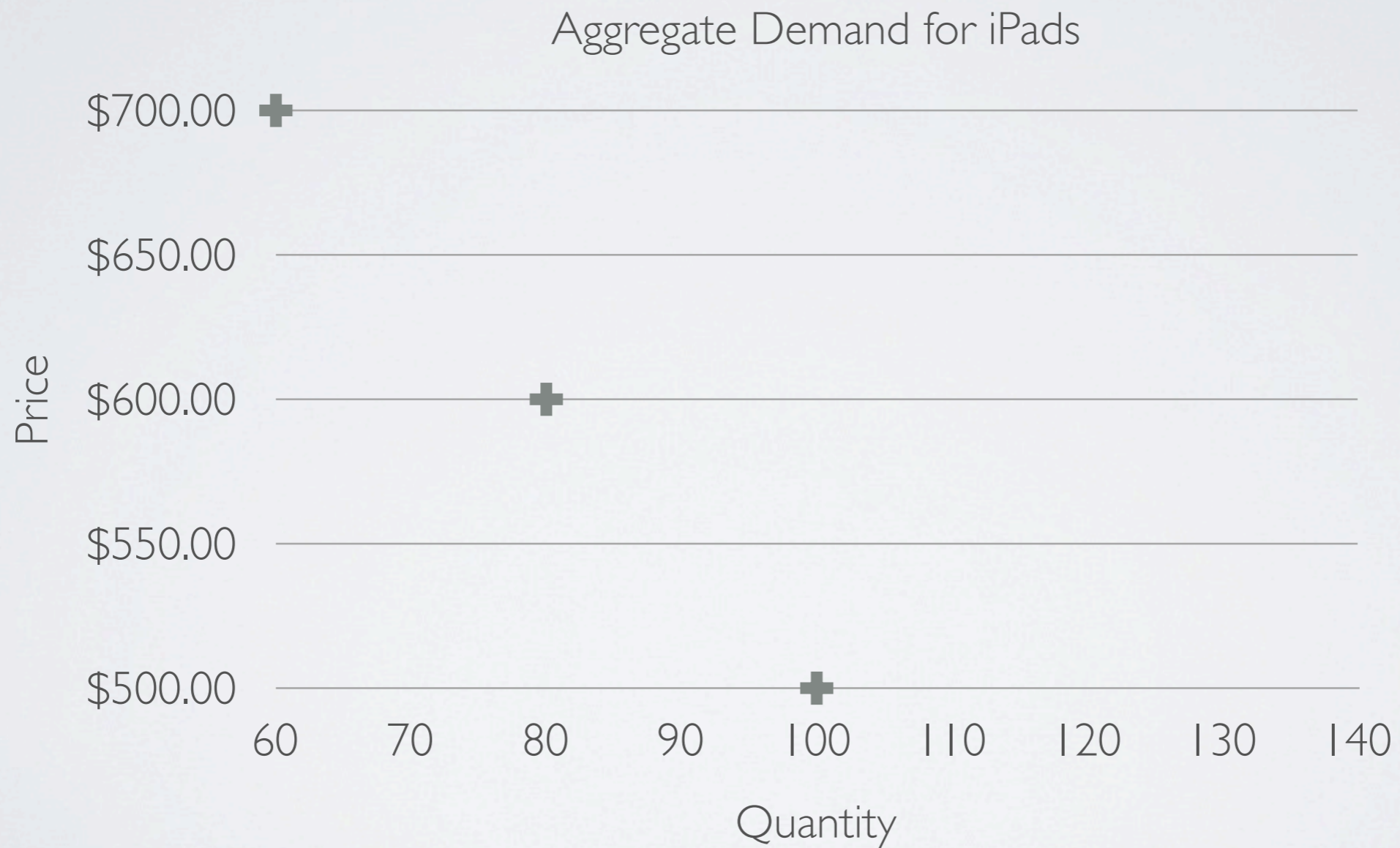
EMPIRICAL EXAMPLE

Demand for iPads				
Price	Matt	A	B	C
\$500	40	40	10	10
\$600	40	25	5	10
\$700	30	25	0	5

B's Demand for iPads



Demand for iPads					
Price	Matt	A	B	C	AGGREGATE
\$500	40	40	10	10	100
\$600	40	25	5	10	80
\$700	30	25	0	5	60



MACRO V. MICRO, REVISITED

- Why does the demand curve slope down in micro?
- Recall, the substitution and income effects; e.g. price of DC increases
 - Substitution: Other goods become relatively cheaper, so buy them
 - Income: Higher price means lower income

MACRO V. MICRO, REVISITED

- Why does the demand curve slope down in the aggregate?
 - × Substitution Effect: the aggregate is the WHOLE economy, what other goods are there?
 - × Income Effect: Recall the circular flow, prices up → firm revenue up → income up
 - ☑ Price Level and Consumption: The Wealth Effect
 - ☑ Price and Investment: The Interest-Rate Effect
 - ☑ Price and Net Exports: Exchange Rate Effect

DOWNWARD SLOPING DEMAND

1. Wealth Effect - similar to micro “income effect”, but also have savings

2. Interest-Rate Effect

- Higher prices lead to higher interest rates (to be discussed)
- Higher interest rates do what to consumer spending?
Investment?
- Lower spending for consumers and investors

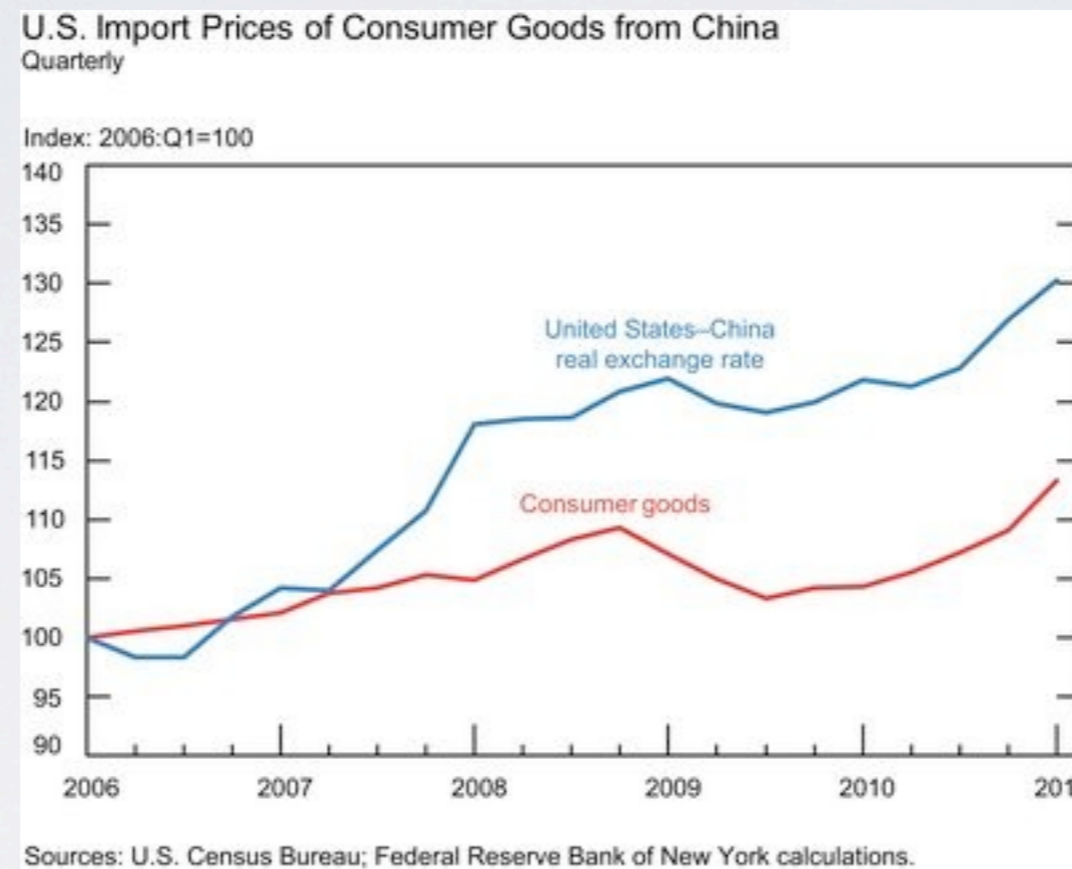
DOWNWARD SLOPING DEMAND

3. Exchange Rate Effect

- Higher prices lead to higher interest rates (see 2)
- Higher interest rates increase the value of the dollar. Why?
- Exports are more expensive, imports cheaper
- So $\text{Net exports} = \text{Exports} - \text{Imports}$ decreases

APPLICATION

- Recall:



- Why do some experts call on China to appreciate its currency to create a “fair” trading environment?
- Currency Wars

COMPONENTS OF SHIFTING DEMAND

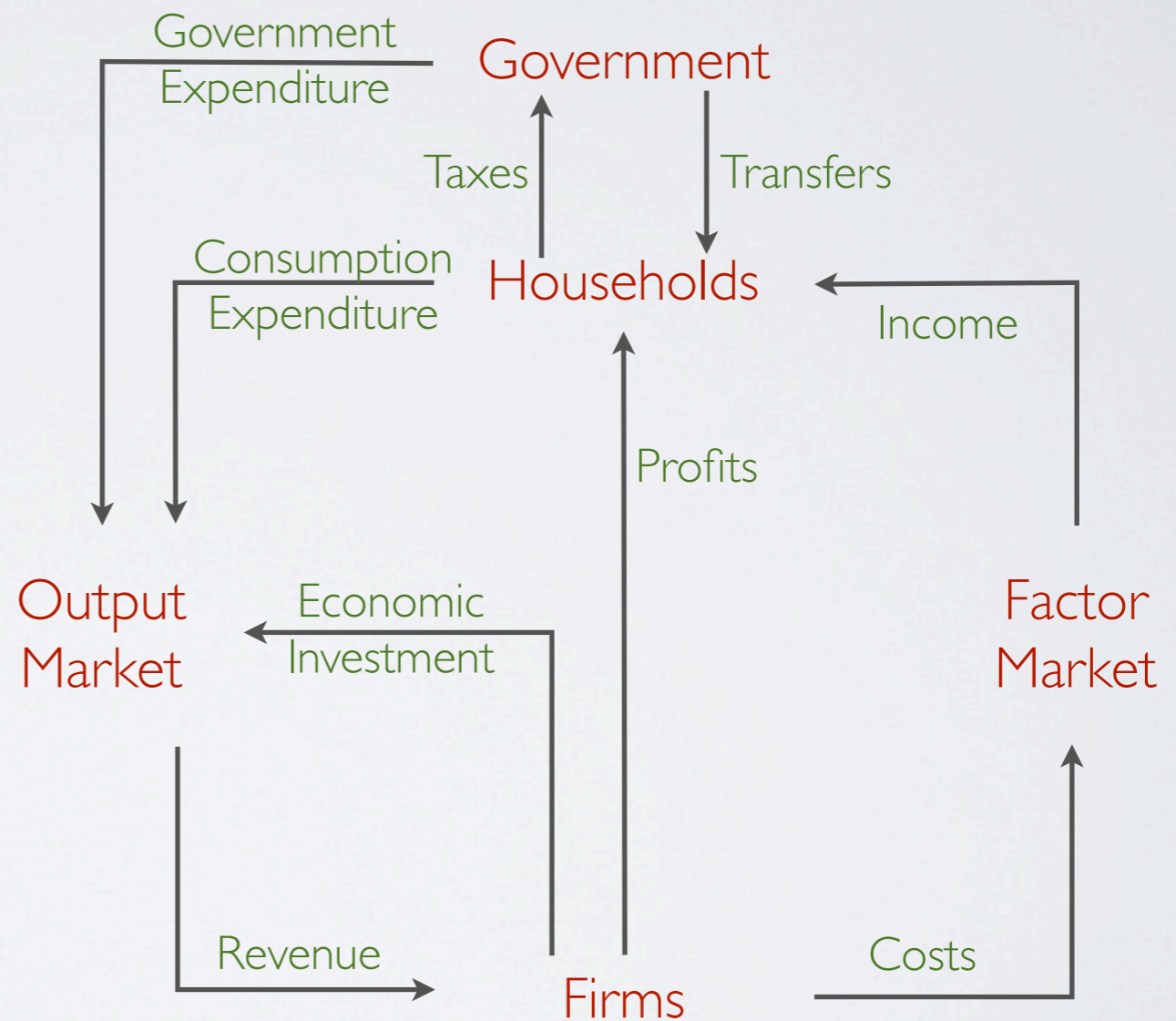
I. **What** can change to shift aggregate demand?

- Change in consumer spending
- Change in investment spending
- Change in government spending
- Change in net export spending

SHIFTING

2. **How Much** Will AD Shift?

- Recall, $AD = G + I + C + X$
- What if G increases by \$10?
 - G increases by \$10
 - Revenue Increases by \$10
 - Profits Increase by \$10 (e.g.)
 - Expenditure Increases by ?



THE MULTIPLIER EFFECT

- Multiplier Effect: Additional shifts in aggregate demand that result from a change in spending in the output market
- How much will consumption expenditures increase?
 - Can save or spend
 - Marginal propensity to consume: fraction of extra income a household spends, instead of saves
 - What if $MPC = 1$?

CALCULATING THE MULTIPLIER EFFECT

- Government spends \$10, assume MPC is .25

	Change in Consumption	Total Increase in AD
G increases by \$10	\$0	\$10
First Round	$\$10 * .25 = \2.5	\$12.5
Second Round	$\$2.5 * .25 = \0.63	\$13.13
Third Round	$\$.63 * .25 = \0.18	\$13.31

What happens to the \$2.5?

- What will be the total increase in aggregate demand?

CALCULATING THE MULTIPLIER EFFECT

- AD Multiplier: $1 / (1 - MPC)$
- Total Increase from a Change in Spending in the Output Market (Change in?): $1 / (1 - MPC) * \Delta ISOM$
- Examples in stimulus policy
 - G Increases by \$10
 - Government gives consumers \$10
 - Which is the more effective stimulus?

AGGREGATE SUPPLY



FIRM THEORY

- Assumptions, other than perfect competition:
 1. Firms are profit maximizers
 2. Firms require resources to produce
 3. Resources are limited
- Recall (from Micro)
 - What assumptions force firms to make choices?
 - **Law of Supply:** All other things equal, as price goes up, supply for that good increases

LONG-RUN AGGREGATE SUPPLY

- In the **long-run**, nominal prices are fully flexible and adjust to the “correct level” (see versus short run)
- **Natural rate of output** is the production of goods and services achieved in the long-run
 - Producing above the rate is an expansionary gap
 - Producing below is a recessionary gap
 - An expansion of the NRO is growth

CHANGES IN LRAS

- Four potential causes

1. Change in labor supply

2. Changes in capital

3. Changes in natural resources

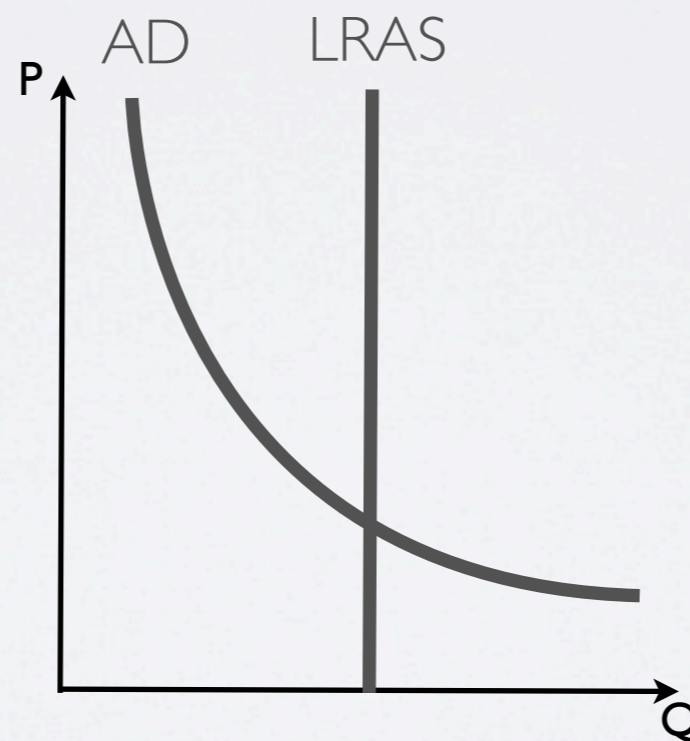
4. Changes in Technology

1) Increase in Technology
2) Decrease in Technology



LONG-RUN AD-AS EQUILIBRIUM

- Under what circumstances would long-run equilibrium quantity change?
- Prices?

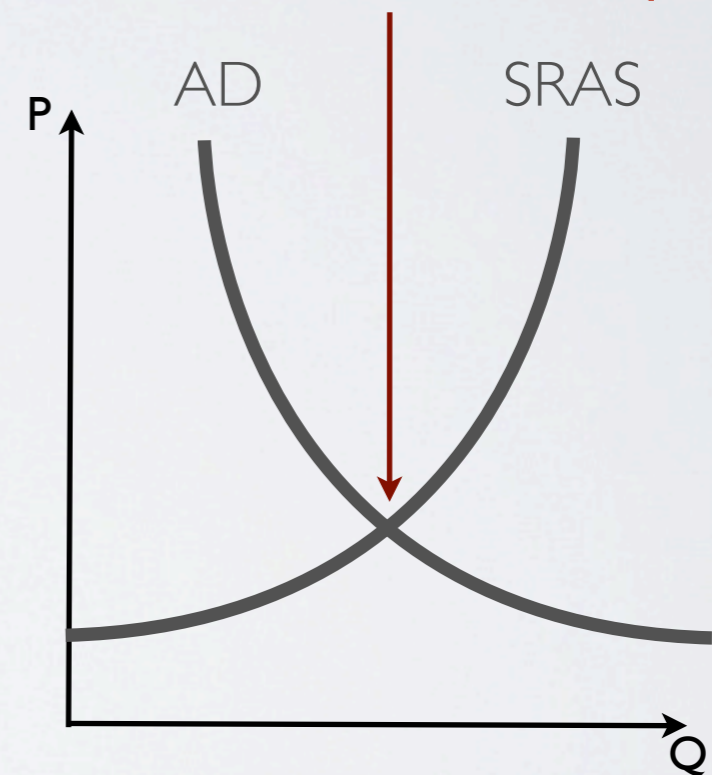


SHORT-RUN AGGREGATE SUPPLY

- What's different here?
- Why do prices matter?

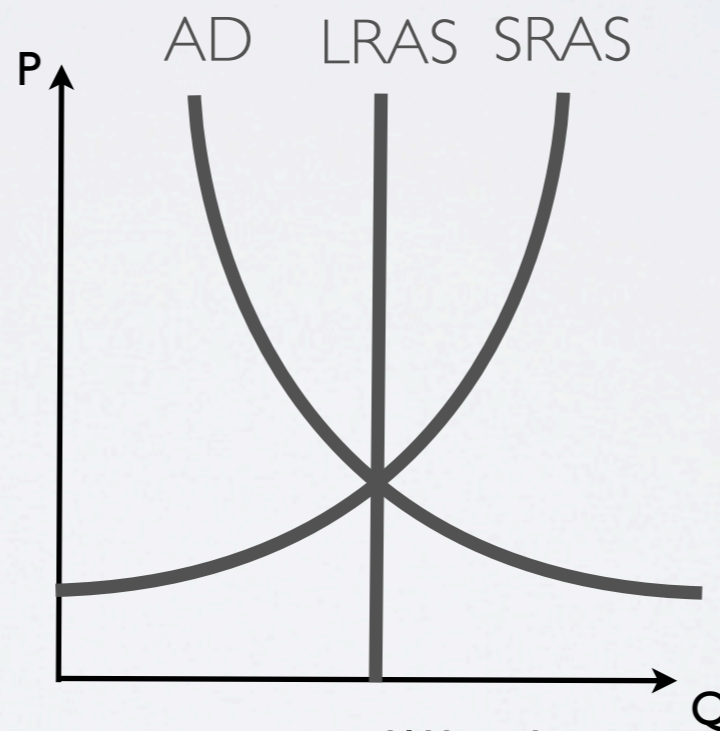
1. Sticky Wages: lag for wages to adjust after price change
2. Sticky Prices: lag for prices to adjust after cost difference
3. Misperceptions: e.g. wages fall before prices and is perceived as an income decrease

Notice equilibrium can deviate from a “natural output”



EQUILIBRIUM

- Equilibrium in the Model: Short-Run Equilibrium is the same as Long-Run Equilibrium



- So, basically, at the short-run equilibrium price **quantity** is the same as in the long-run; why does price not matter?

ANALYZING DEVIATIONS

1. What shock has happened to the economy?
2. What shifts (AD, SRAS, LRAS)?
3. How does this shift impact price and quantity in the short-run equilibrium?
4. How will the economy readjust to a long-run equilibrium?

DEVIATIONS FROM EQUILIBRIUM

- AD increases above the natural output by an outward shift in the AD curve

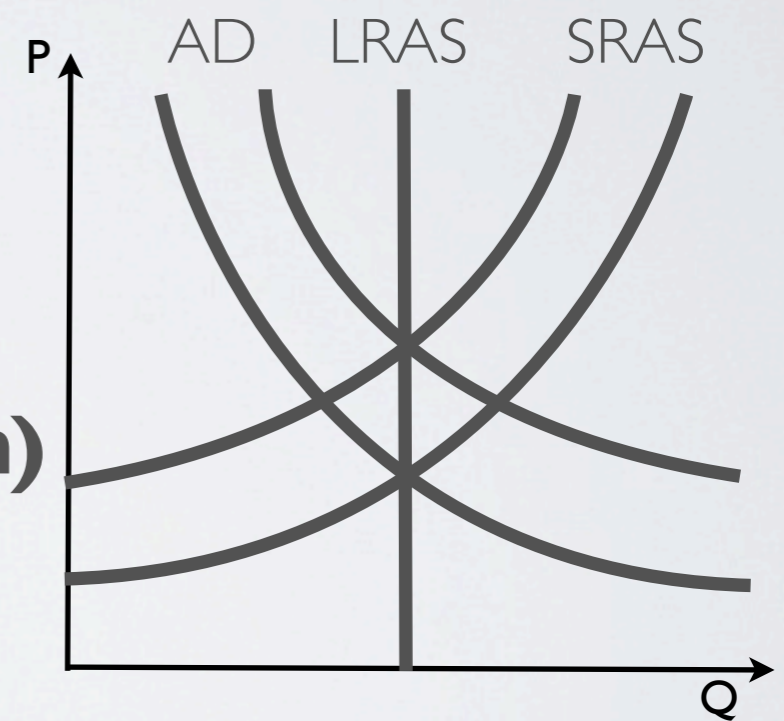
- How could this happen?

- What is the new price and quantity

in SR equilibrium? **(demand-pull inflation)**

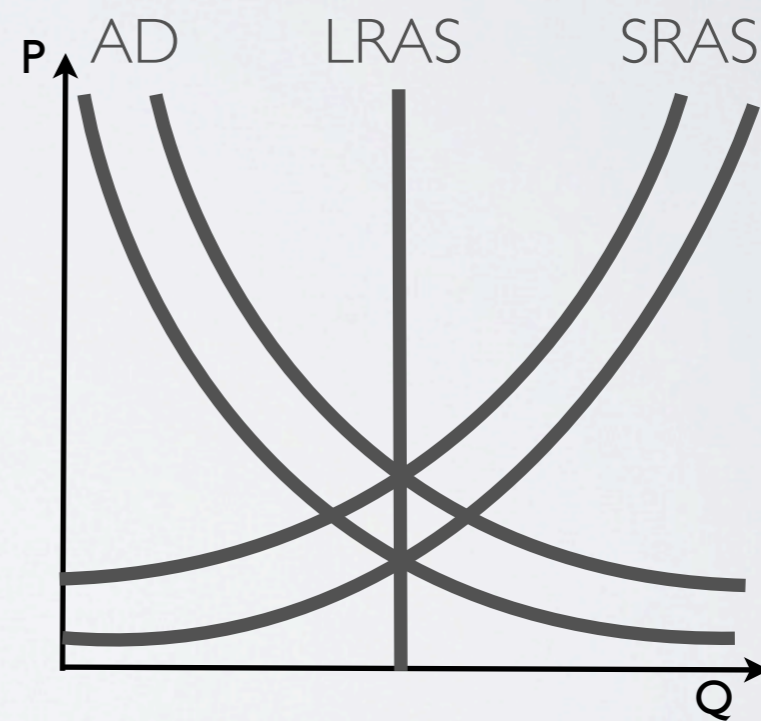
- How do we adjust in the long-run?

- Sticky wage theorem: wages will increase with contract negotiations, thus shifting the costs of production back



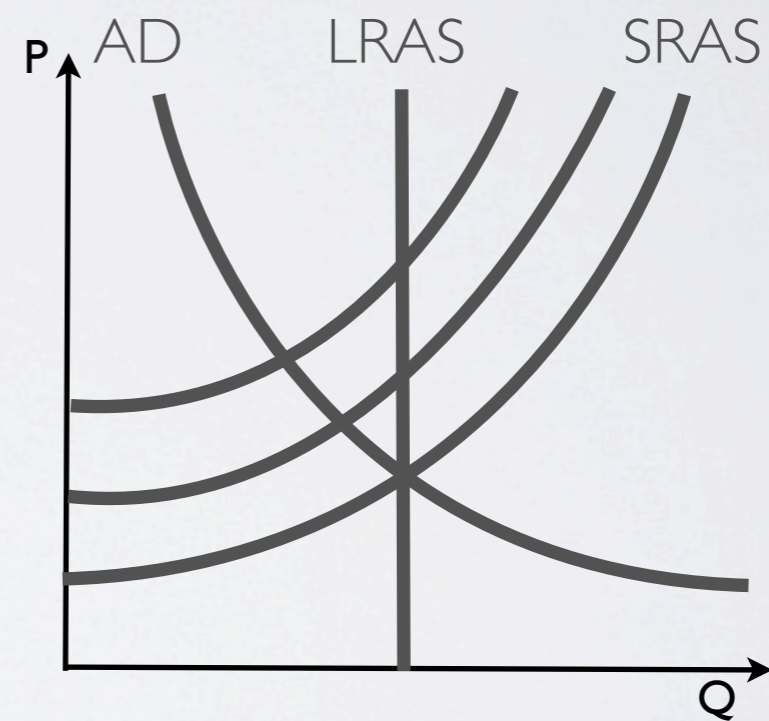
DEVIATIONS FROM EQUILIBRIUM

- AD decreases below the natural output by an inward shift of the AD curve
 - How could this happen?
 - What is the new price and quantity in SR equilibrium?
- How do we adjust in the long-run?
 - Return to the old AD curve
 - AS curve can shift. How? Think wage mechanism again



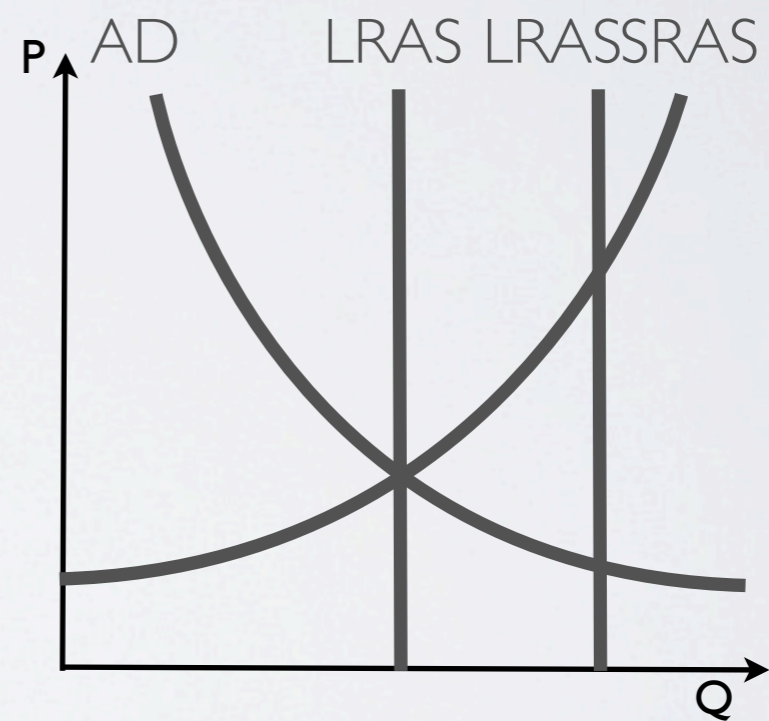
DEVIATIONS FROM EQUILIBRIUM

- AS decreases below the natural output by an inward shift of the AS curve
 - How could this happen?
 - What is the new price and quantity in SR equilibrium? (**cost-push inflation**)
- How do we adjust in the long-run?
 - Higher prices cause what to happen to wages?
 - Higher wages cause an inward shift in AS
 - An inward shift in AS causes prices to rise even more
 - Process is called the **wage-price spiral**
 - Lower production implies lower employment and eventually unemployment is high enough that wages eventually decrease. Why?



DEVIATIONS FROM EQUILIBRIUM

- LRAS increases
 - How could this happen?
 - What happens to the natural rate of output?
 - What might happen next?
- Say SRAS shifts out because of higher wages
- How do we return to the old equilibrium?



MORE REALISTIC VIEW

- In reality, firms reduce employees, rather than wages
 - Governments respond, which in turn impact our model (policy topics)
 - What might tax cuts, or increase in government spending do?
- There can be multiple changes at once (e.g. lower wages decrease AD through changes in consumer spending)