The Power of Macroeconomics

Lecture Two:

The Aggregate Supply-Aggregate Demand Framework

Presented By:
Professor Peter Navarro
University of California-Irvine

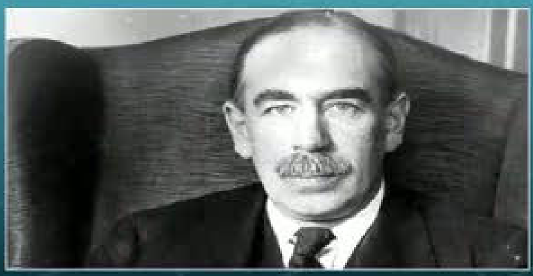
Purpose Of Lesson Two

- Illustrate why Classical economics gave way to Keynesianism in the 1930s.
- Develop the Aggregate Supply-Aggregate Demand framework.
  - A key tool in macroeconomic analysis!

An Important Debate

- The debate between Classical economists and Keynesians ranks as one of the most important in macroeconomics.

Adam Smith



John Maynard Keynes

The Classical-Keynesian Debate

- Debate goes back to the 1930s and the Great Depression – but very important today!
- Many of the macroeconomic policies now favored by conservatives have their roots in Classical economics.
- Those on the other side of the ideological spectrum are generally more supportive of the Keynesian approach.

The Most Important Point

- The Classical versus Keynesian controversy:
  - Primarily a dispute over how an economy adjusts during a recession and finds its way back to full employment.

The Classical View

- A "*price adjustment mechanism*" would cure the economy.
- In the event of unemployment, prices, wages, and interest rates would all fall.
- This would increase consumption, production, and investment and quickly return the economy back to its full employment equilibrium.

The Keynesian View

- Before price adjustment mechanism can work, it is overpowered by an *"income adjustment mechanism."*
  - When an economy sinks into a recession, peoples' incomes fall.
  - They spend and save less while businesses invest and produce less.
- This income adjustment mechanism drives the economy further into recession rather than back to full employment.

Laissez-Fair Economics

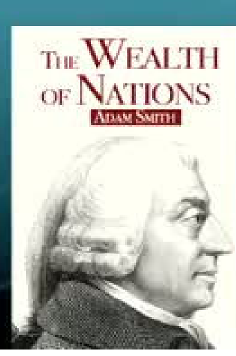
- The Classical approach believes that the best cure for a recession is to leave the free market alone.
- Laissez faire economists believe most government policies will probably make things worse--not better--so the best policy is relatively little government.

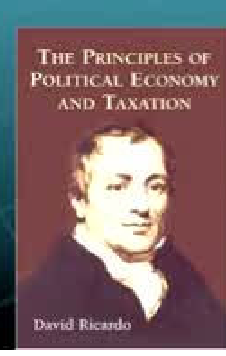
“Activist” Economics

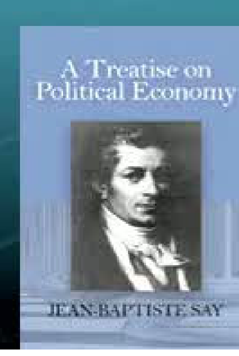
- Keynesians prescribe large-scale government expenditures to prime the economic pump.
- Keynesians are “activist” economists who believe that the government can create and implement policies that will positively affect the economy.

Classical Economics

- Roots are in the free market writings of Adam Smith, David Ricardo, and Jean Baptiste Say.
- Unemployment is a natural part of the business cycle and is self-correcting.
  - There is no need for government intervention into the free market!!







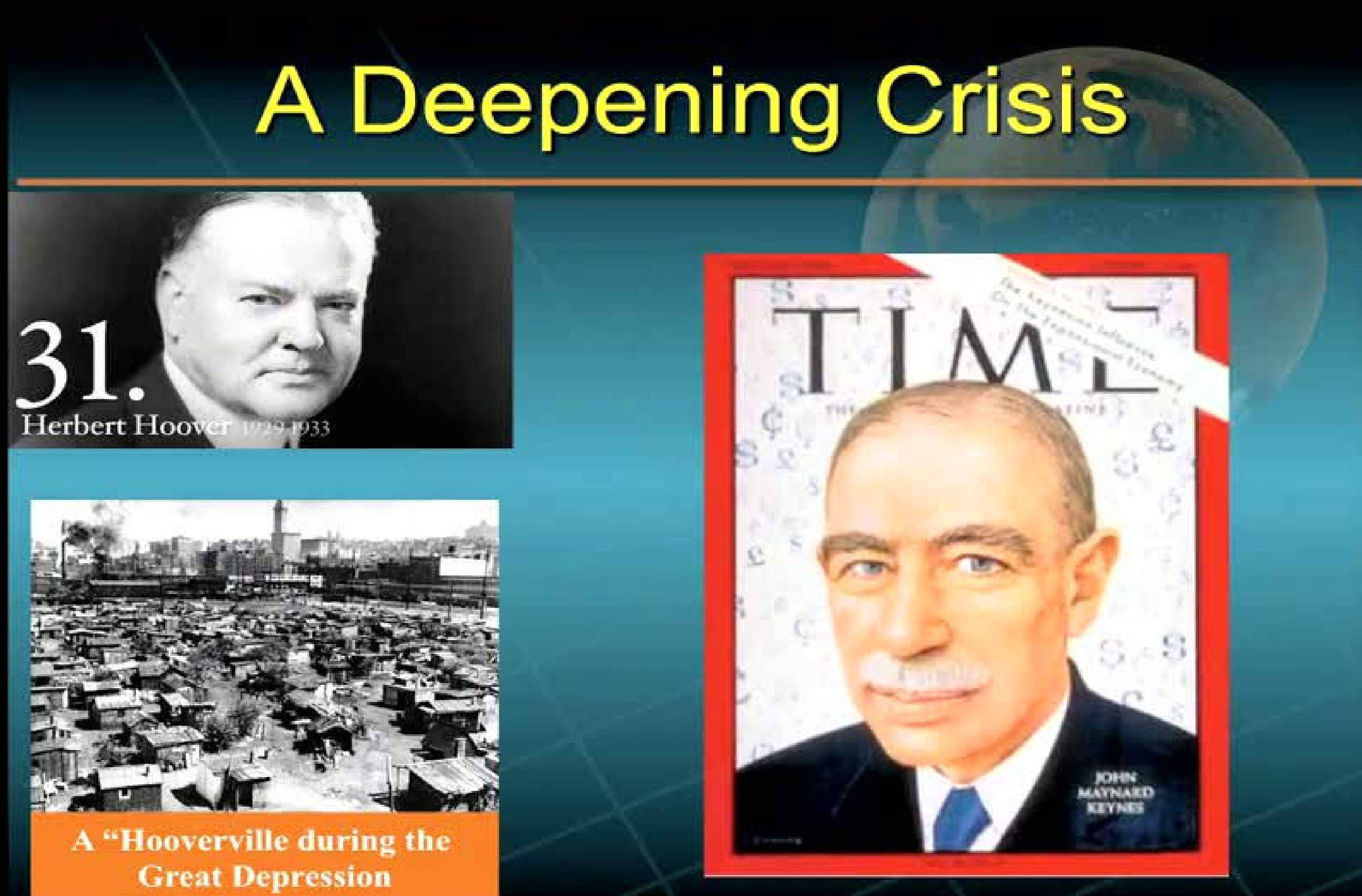
Classical Unemployment

- Unemployment results when wages are too high.
- In the event of a recession, unemployed workers would be willing to work for less.
- Wages would then fall back down to levels where it once again made it profitable for firms to hire the workers and the recession would end.

There Is No Cyclical Unemployment

- Classical economists agreed that *frictional* and *structural* unemployment could exist.
- They did not agree that *cyclical* unemployment could be caused by a shortage of aggregate demand.


The Classical Economists
Meet Their Match in the Great Depression
JOBLESS MEN
KEEP GOING
WE CAN'T TAKE CARE OF OUR OWN

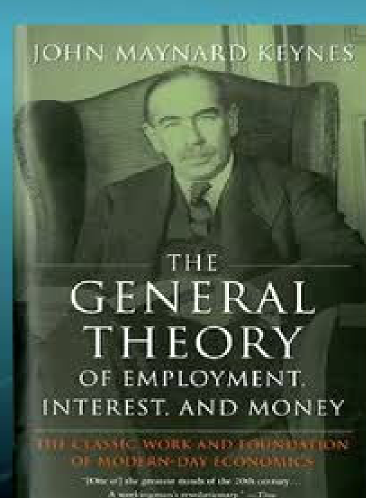

A Deepening Crisis
31.
Herbert Hoover 1929-1933
A “Hooverville during the Great Depression
TIME
JOHN MAYNARD KEYNES

John Maynard Keynes

- Born in 1883, the son of British economist John Neville Keynes.
- A stock speculator who made millions.
- An arts patron.
- A Cambridge University professor.
- A key appointee to the British Treasury.

Keynes' General Theory

- Keynes flatly rejected the Classical notion of a self-correcting economy that would solve unemployment through adjustments in wages and prices.

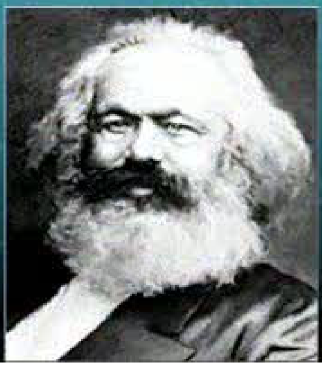


The Keynesian Bottom Line

- Waiting for eventual recovery was fruitless because "in the long run, we're all dead."
- Under certain circumstances, a recessionary economy would not rebound but fall into a deep spiral.
- The only way to get the economy moving again was to prime the economic pump with massive government expenditures!!!!!

Keynes' An Economic Heretic

- Keynes' approach was economic heresy.
- Keynesian policies were initially rejected by virtually the entire economics profession.
- Keynes and his followers were branded as socialists or communists for advocating an activist role for the central government.



Karl Marx

Keynesian Economics is Born

- Keynes stuck to his guns.
- As the Depression wore on, his teachings gained adherents and disciples.

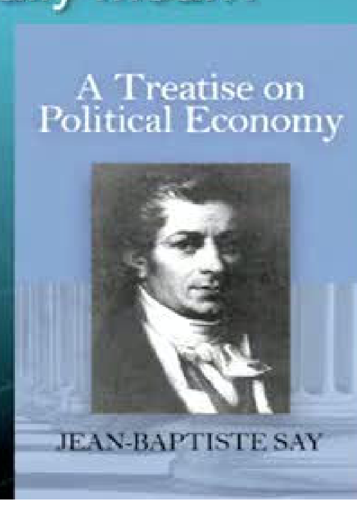
LECTURE TWO - PART TWO

The Two Pillars of Classical Economics

- Why did Keynesian economics triumph?
  - The two major pillars of Classical Economics crumbled under the weight of Keynes' argument
- Say's Law: Supply Creates Its Own Demand
- The Quantity Theory of Money: PQ = MV

Say's Law Says…

- Formulated in the 1800s by French businessman Jean Baptiste Say and popularized by David Ricardo.
- "Supply creates its own demand."
- What does this really mean?



How Say's Law Works

- When people work to produce goods and services, they earn income for doing so.
- Say's Law states the total income must equal the value of the goods and services.
- If the workers spend this income, it must be enough to pay for all the goods and services they produce.
- Therefore, supply creates its own demand, i.e. aggregate demand must equal aggregate supply!!!!

Thomas Malthus' Critique

- Suppose income earners don't spend all their money and instead save some of it?
- Thomas Malthus raised this possibility in his criticism of Say's Law.
- If people don't spend all of their money, there would be a glut of goods and people would be out of work.

The "Dismal Science"

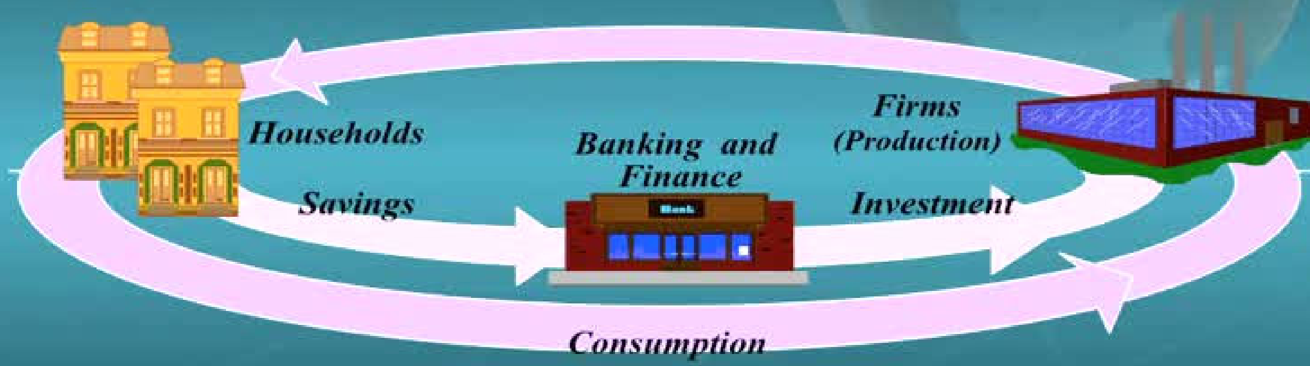
- The Malthusian doctrine says population will grow faster than the production of food which will lead to mass starvation.
- Malthus' dark vision earned the economics profession its label as the "dismal science."

Say and Ricardo Respond to Malthus

- If people save some of their money, all of these savings will still be invested in the economy.
- Therefore aggregate demand, which equals consumption plus investment, will always equal aggregate supply.

Say's Law and the Circular Flow Diagram

Aggregate Supply(AS)= Employee compensation, rents, interest, & profits



Aggregate Demand (AD) = Consumption+ Investment

Unemployment Would Go Away

- Say acknowledged unemployment could exist.
- However, if wages, prices, and interest rates are allowed to adjust, unemployment goes away on its own.

The Quantity Theory of Money

- Classical economists supported their Say's Law analysis with the quantity theory of money.
- The quantity theory of money determines the price level while Say's Law analysis determines real output.

The Equation Of Exchange

- M * V = P * Q
- M = *money supply*
- V = *velocity* of money or the amount of income generated each year by a dollar of money
- P = *general price level* as measured by an index such as the consumer price index.
- Q = *quantity of real output* sold.
- P * Q = "nominal" inflation-adjusted output as measured by GDP.

$M * V = P * Q$

- Quantity theory of money says price level varies in response to changes in quantity of money.
- Changes in the price level are caused by changes in the money supply.
- If M up 20%, P up 20%.
- If M down by 5%, P down by 5%.

Two Assumptions & An Implication

Assumption #1: Velocity Is Constant

Assumption #2: The Veil of Money
-- Real output not influenced by money supply.

Implication: Increasing M will not increase Q

Given MV=PQ, why will increasing M only lead to an increase in P, i.e., inflation?

MV = PQ

- If V is constant on the left side, and
- If Q on the right side is unaffected by M…
- The only thing that can change if M changes, is P!

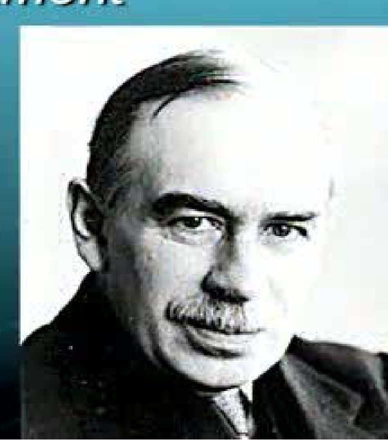
LECTURE TWO - PART THREE

Classical Economics Gives Way to Keynesian Economics

- The failure of Classical Economics during the Great Depression resulted in a search for an alternative solution.
- That solution was Keynesian economics.

Why Classical Economics Failed

- The problem with Classical economics was not the price adjustment mechanism it relied on.
- Keynes believed that before the price mechanism could work, it would be dwarfed by a much more powerful *"income adjustment mechanism."*



The Income Adjustment Mechanism

- When an economy sinks into recession, peoples' incomes fall.
- A fall in income causes people to spend and save less.
- Businesses respond by investing and producing less.
- This reduction in consumption, savings, investment, and output drives the economy deeper into recession rather than back to full employment.

An Economy Stuck in a Classical Rut

- Eventually income falls far enough so that savings and investment return to equilibrium
- However, the economy will be at a level well below full employment.
- In other words, the economy is stuck in a rut with a glut of goods.
- This is just as Thomas Malthus predicted in his original critique of the Classical model.

A Key Difference in Price Assumptions

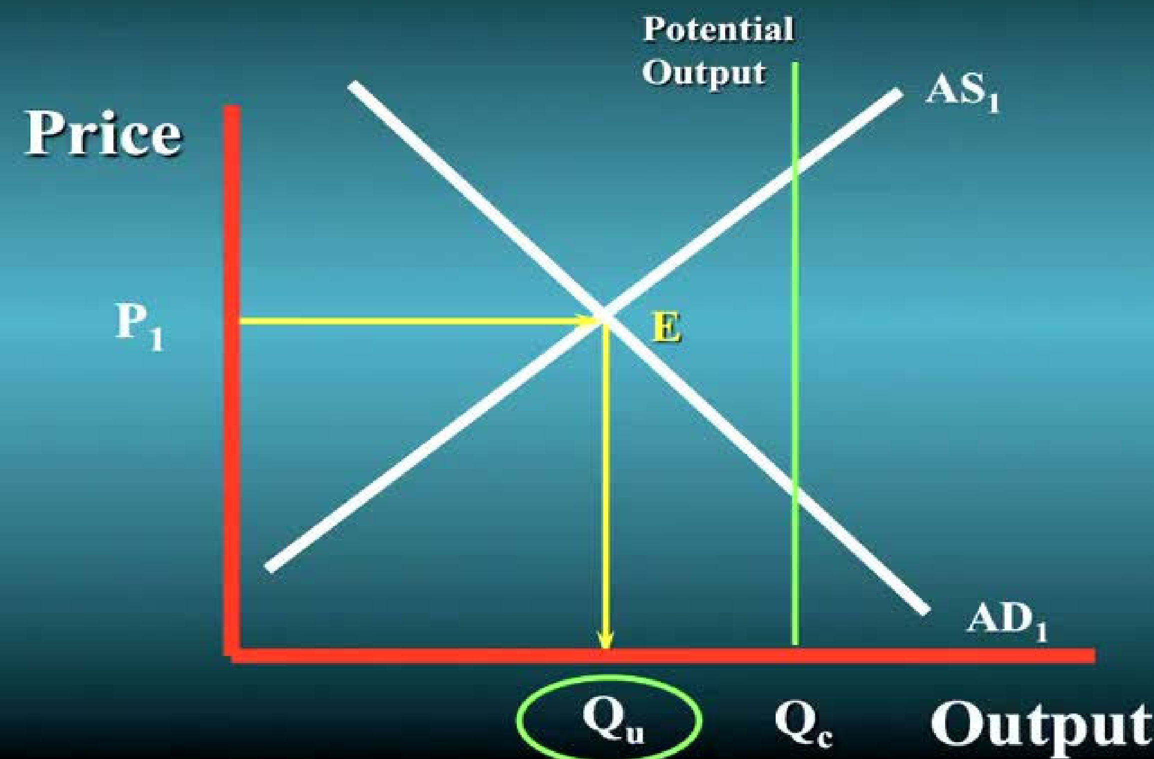
- The AS-AD framework has its roots in Classical economics. It allows for price adjustments.
- The Keynesian model assumes prices are fixed.

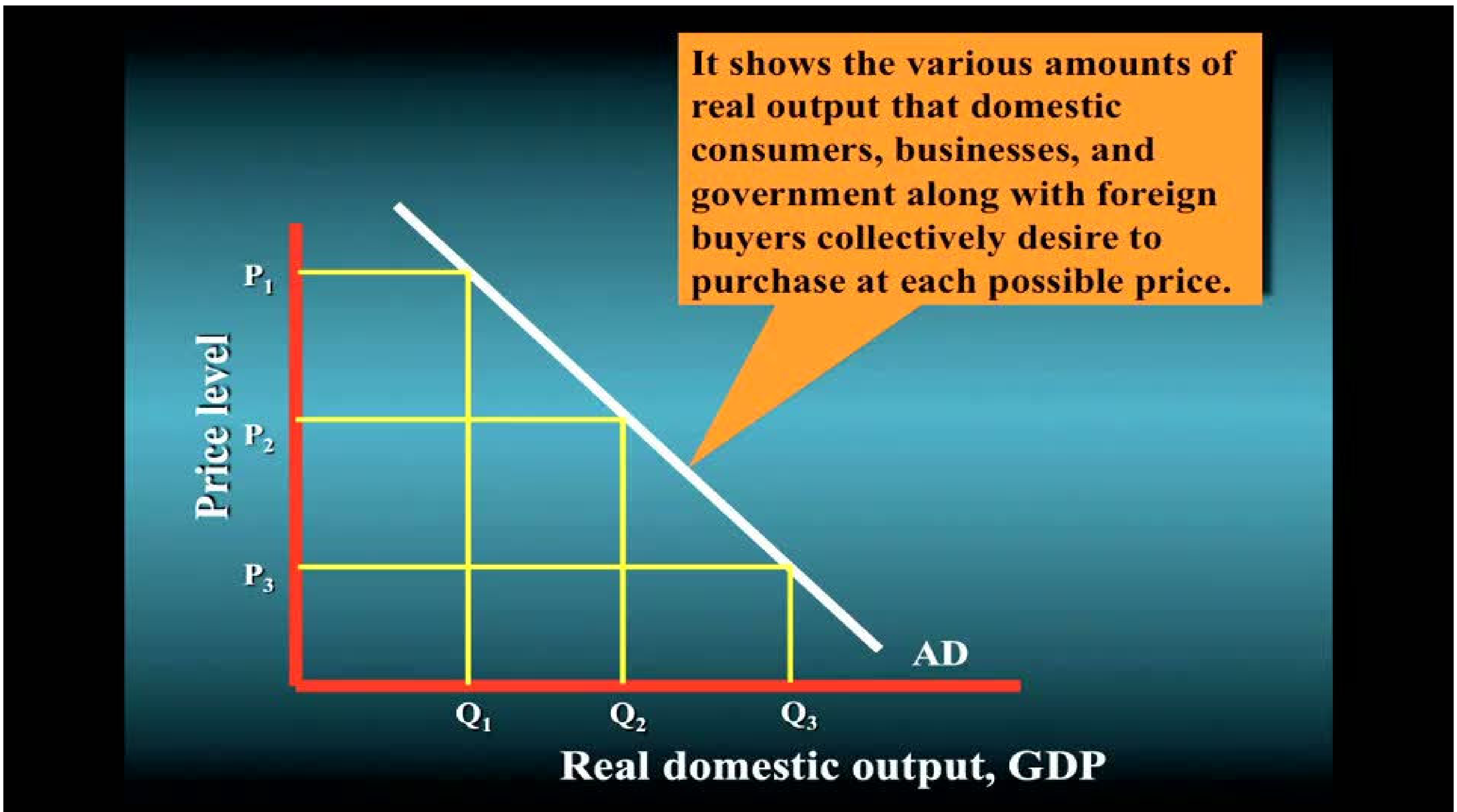
In The Remainder Of This Lecture

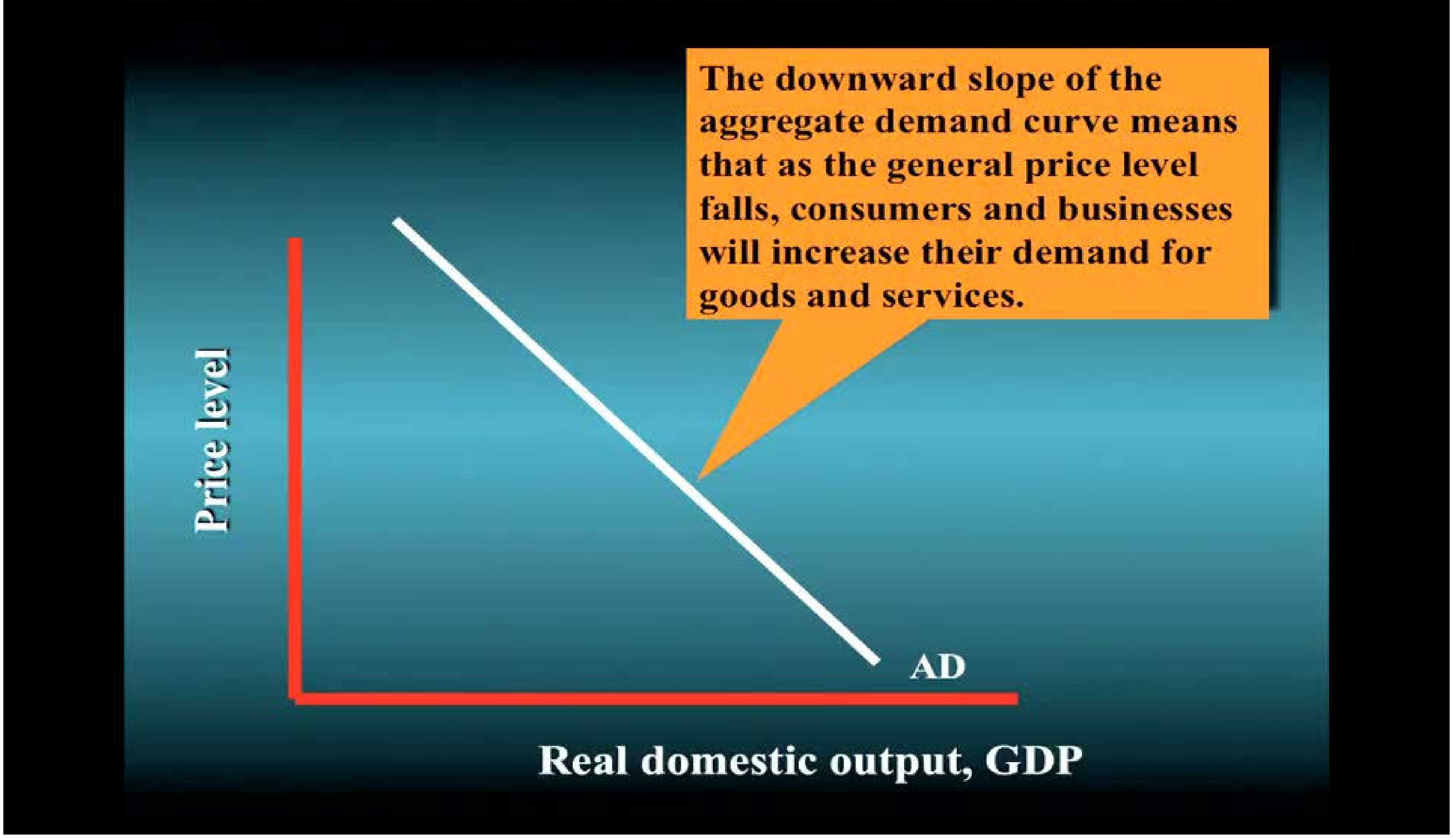
- We develop the aggregate supply-aggregate demand model and then turn to the Keynesian model in the next lecture.
- *Both* models are helpful in understanding how modern economies function.

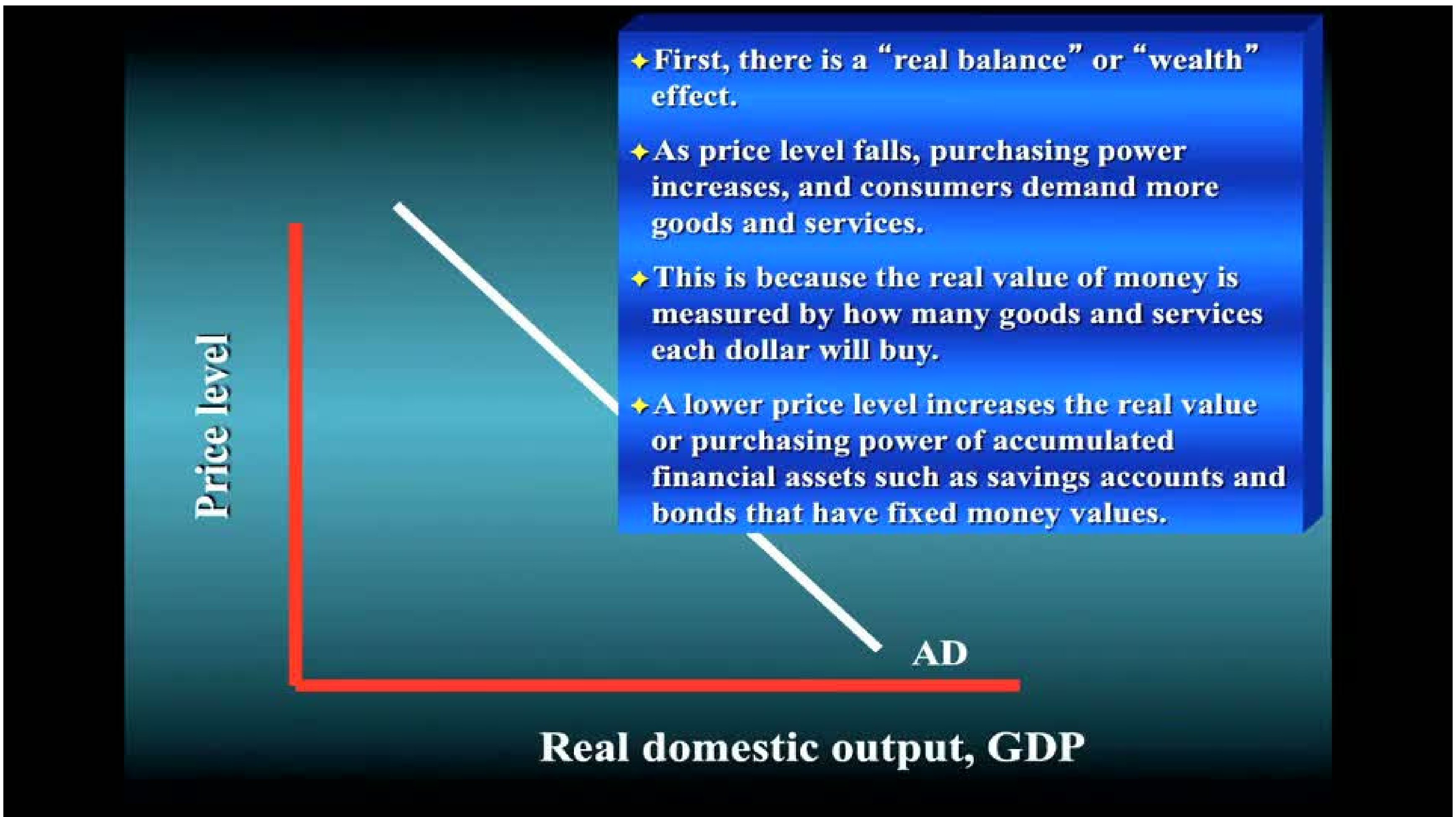
LECTURE TWO - PART FOUR

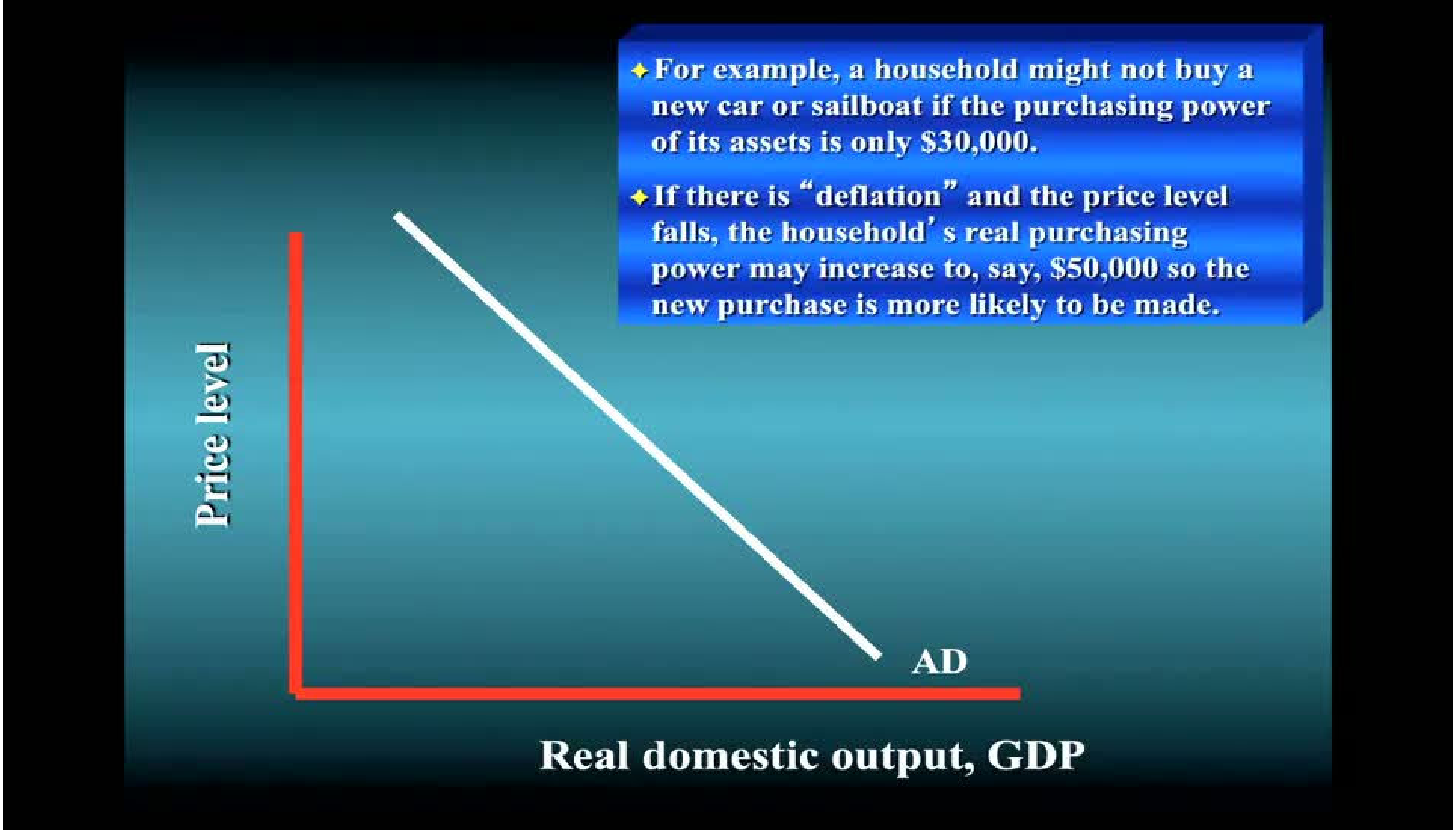
The AS-AD Framework

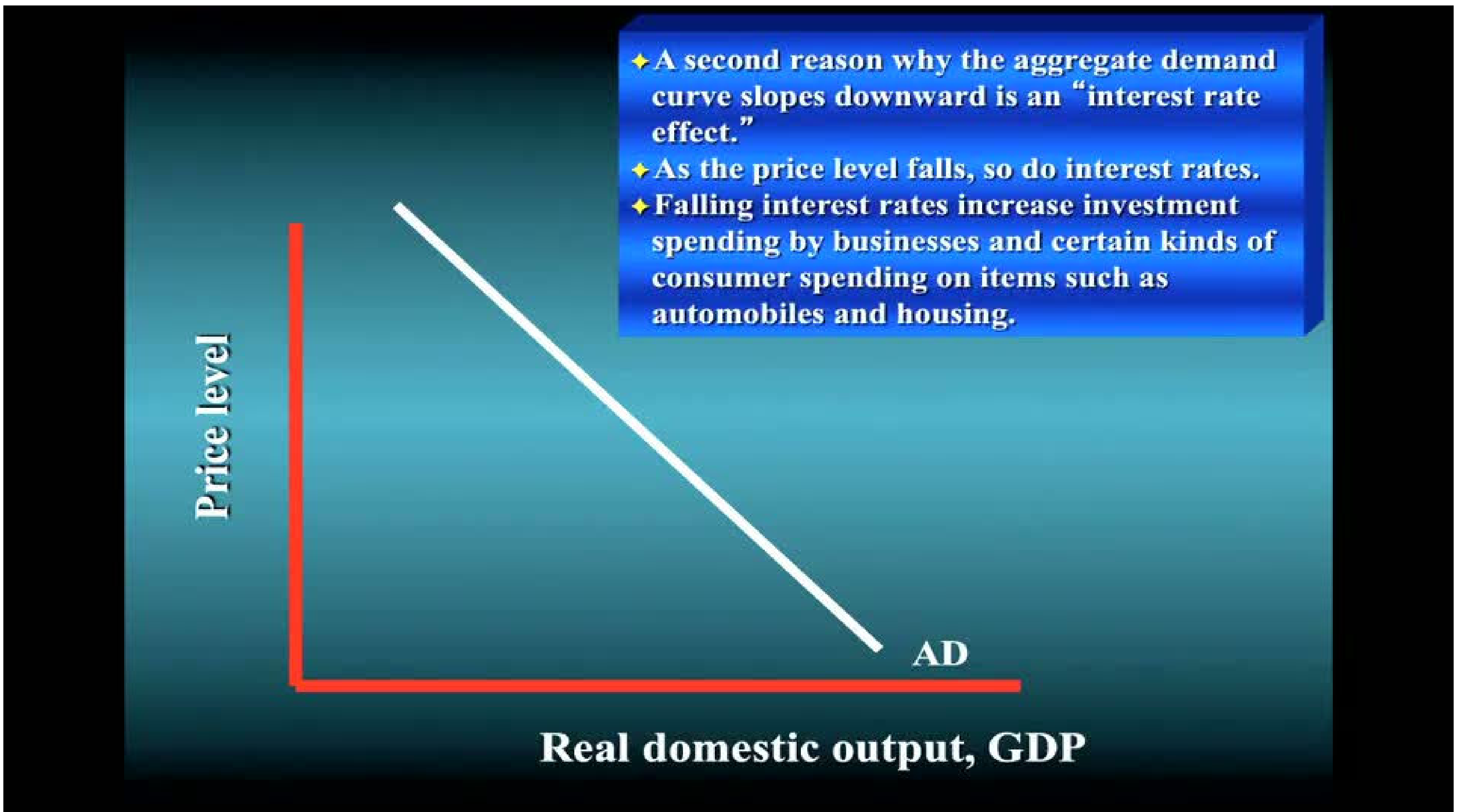


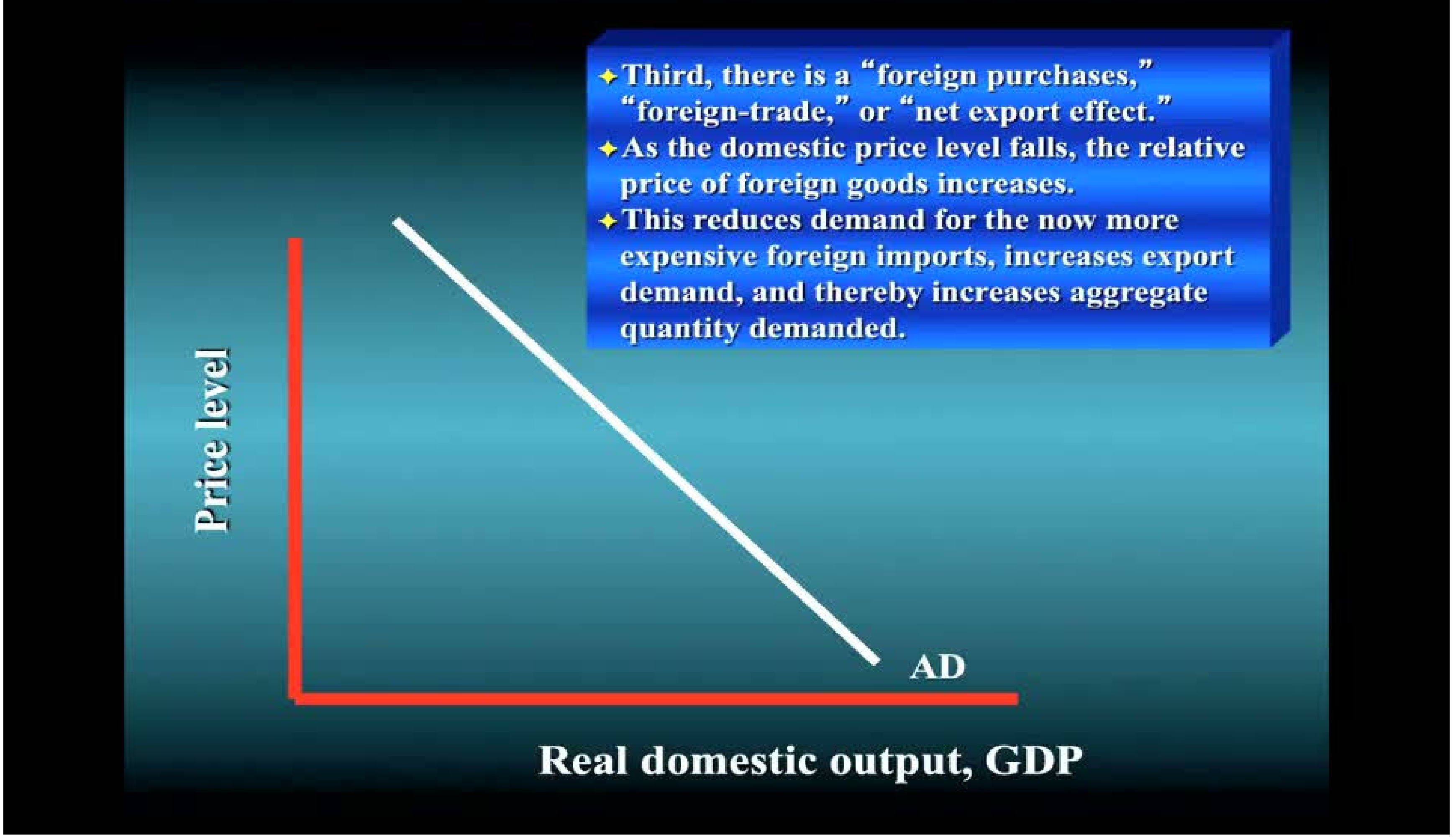

It shows the various amounts of real output that domestic consumers, businesses, and government along with foreign buyers collectively desire to purchase at each possible price.
Price level
P1
P2
P3
AD
Q1
Q2
Q3
Real domestic output, GDP


The downward slope of the aggregate demand curve means that as the general price level falls, consumers and businesses will increase their demand for goods and services.
Price level
AD
Real domestic output, GDP


✦First, there is a "real balance" or "wealth" effect.
✦As price level falls, purchasing power increases, and consumers demand more goods and services.
✦This is because the real value of money is measured by how many goods and services each dollar will buy.
✦A lower price level increases the real value or purchasing power of accumulated financial assets such as savings accounts and bonds that have fixed money values.
Price level
AD
Real domestic output, GDP


✦For example, a household might not buy a new car or sailboat if the purchasing power of its assets is only $30,000.
✦If there is "deflation" and the price level falls, the household's real purchasing power may increase to, say, $50,000 so the new purchase is more likely to be made.
Price level
AD
Real domestic output, GDP


✦ A second reason why the aggregate demand curve slopes downward is an "interest rate effect."
✦ As the price level falls, so do interest rates.
✦ Falling interest rates increase investment spending by businesses and certain kinds of consumer spending on items such as automobiles and housing.
Price level
AD
Real domestic output, GDP


✦ Third, there is a "foreign purchases," "foreign-trade," or "net export effect."
✦ As the domestic price level falls, the relative price of foreign goods increases.
✦ This reduces demand for the now more expensive foreign imports, increases export demand, and thereby increases aggregate quantity demanded.
Price level
AD
Real domestic output, GDP

LECTURE TWO - PART FIVE

Why The AD Curve Can Shift

- We now understand why the AD curve slopes downward.
- Let's also understand why the AD can <u>shift</u>!
- Remember: the AD graph shows the various amounts of real output that would be purchased at each possible price level, <u>holding other things constant</u>.
- By understanding what these "other things" are, we can understand why the AD curve shifts!

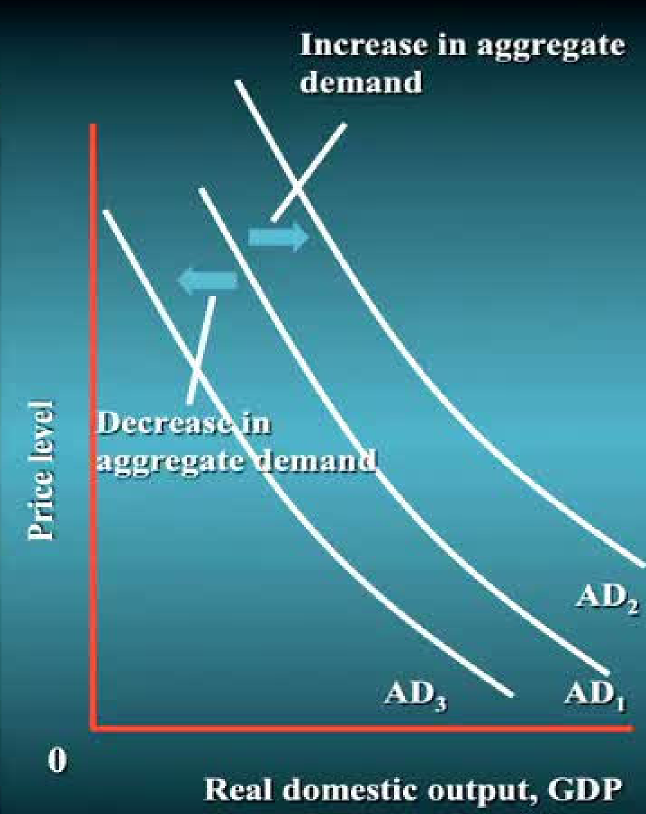
Factors shifting the AD curve

1. Change in consumption spending
   a. Consumer wealth
   b. Consumer expectations
   c. Household indebtedness or credit conditions
   d. Tax policy
2. Change in investment spending
   a. Interest rates
   b. Profit expectations on investment projects
   c. Business taxes
   d. Technology
   e. Degree of excess capacity
3. Change in government spending
4. Change in net export spending
   a. National income abroad
   b. Exchange rates

- These factors are referred to as the determinants of aggregate demand because they determine the location of the aggregate demand curve.

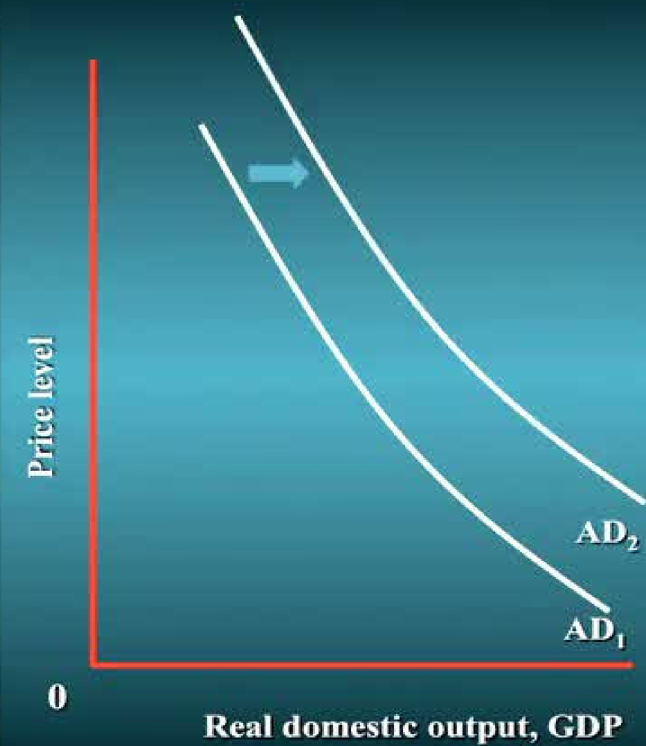
Factors shifting the AD curve

1. Change in consumer spending
   a. Consumer wealth
   b. Consumer expectations
   c. Household indebtedness or credit conditions
   d. Tax policy
2. Change in investment spending
   a. Interest rates
   b. Profit expectations on investment projects
   c. Business taxes
   d. Technology
   e. Degree of excess capacity
3. Change in government spending
4. Change in net export spending
   a. National income abroad
   b. Exchange rates



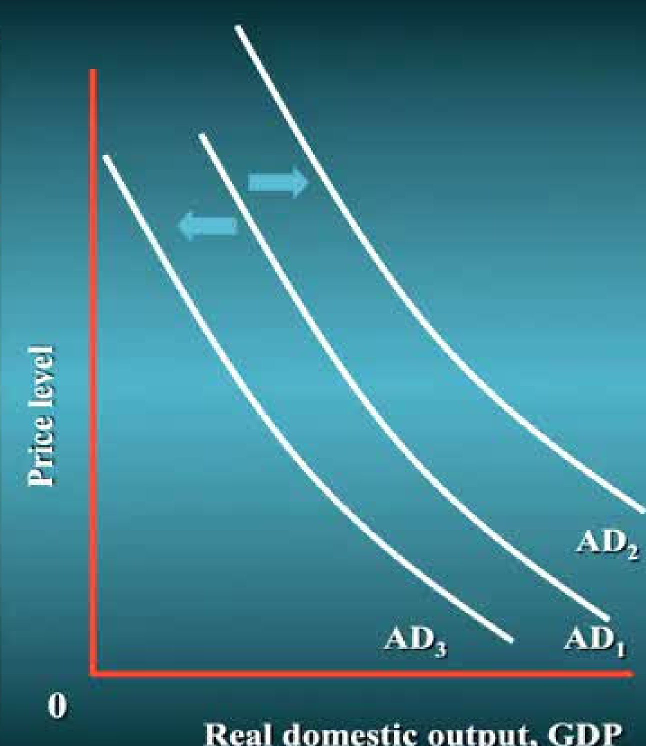
Factors shifting the AD curve

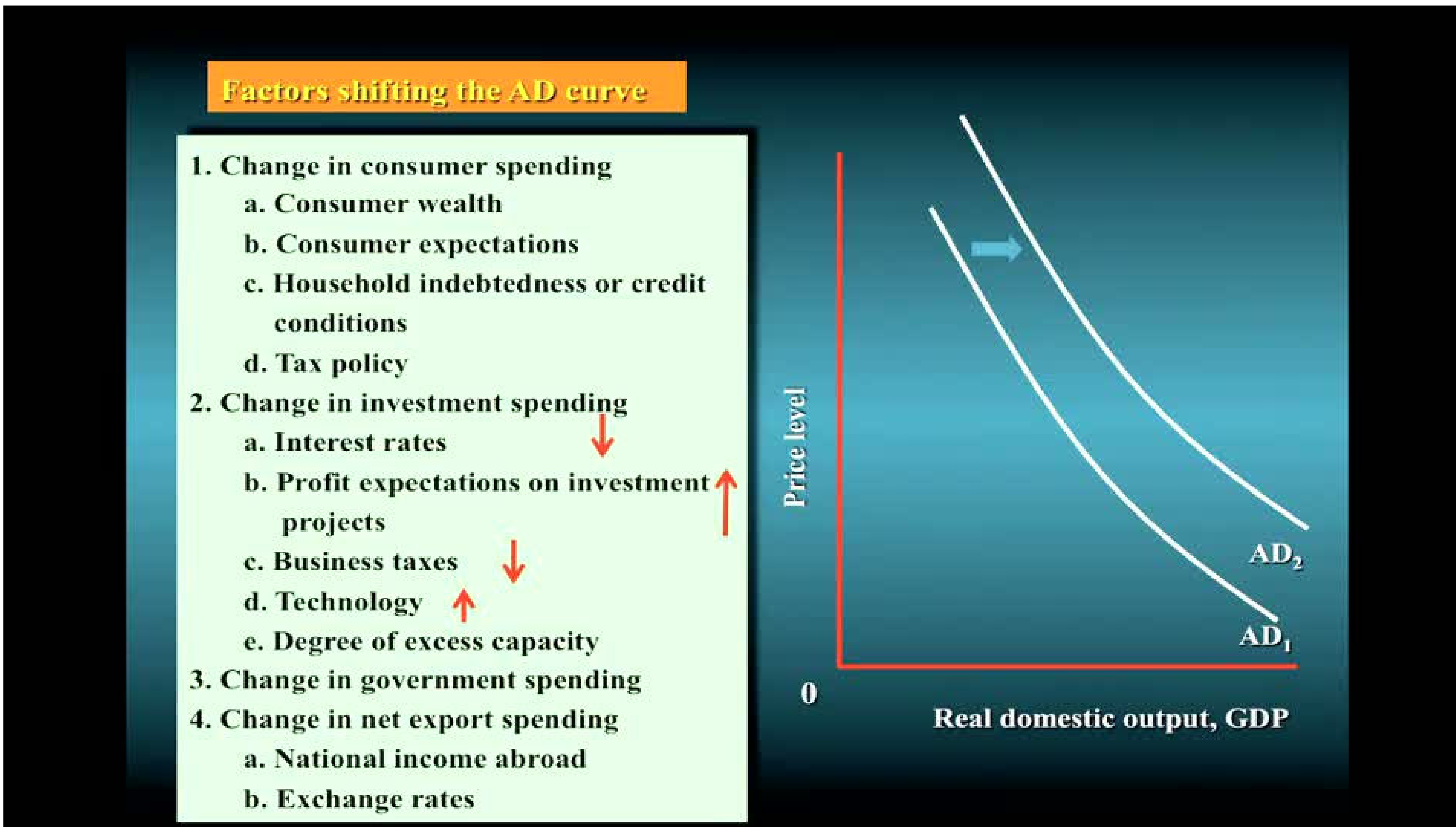
1. Change in consumer spending
   a. Consumer wealth
   b. Consumer expectations
   c. Household indebtedness or credit conditions
   d. Tax policy
2. Change in investment spending
   a. Interest rates
   b. Profit expectations on investment projects
   c. Business taxes
   d. Technology
   e. Degree of excess capacity
3. Change in government spending
4. Change in net export spending
   a. National income abroad
   b. Exchange rates

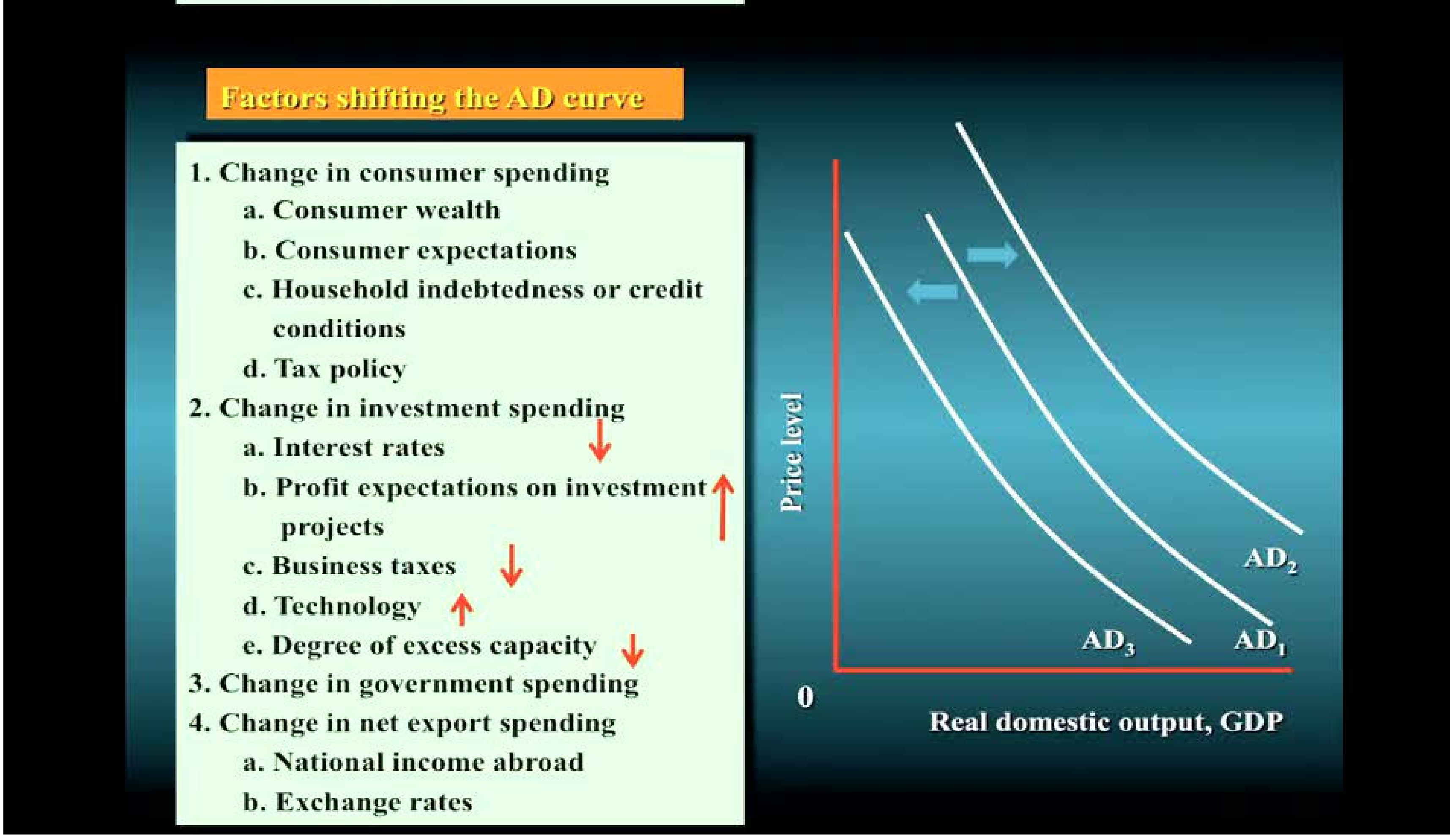


Factors shifting the AD curve

1. Change in consumer spending
   a. Consumer wealth
   b. Consumer expectations
   c. Household indebtedness or credit conditions
   d. Tax policy
2. Change in investment spending
   a. Interest rates
   b. Profit expectations on investment projects
   c. Business taxes
   d. Technology
   e. Degree of excess capacity
3. Change in government spending
4. Change in net export spending
   a. National income abroad
   b. Exchange rates

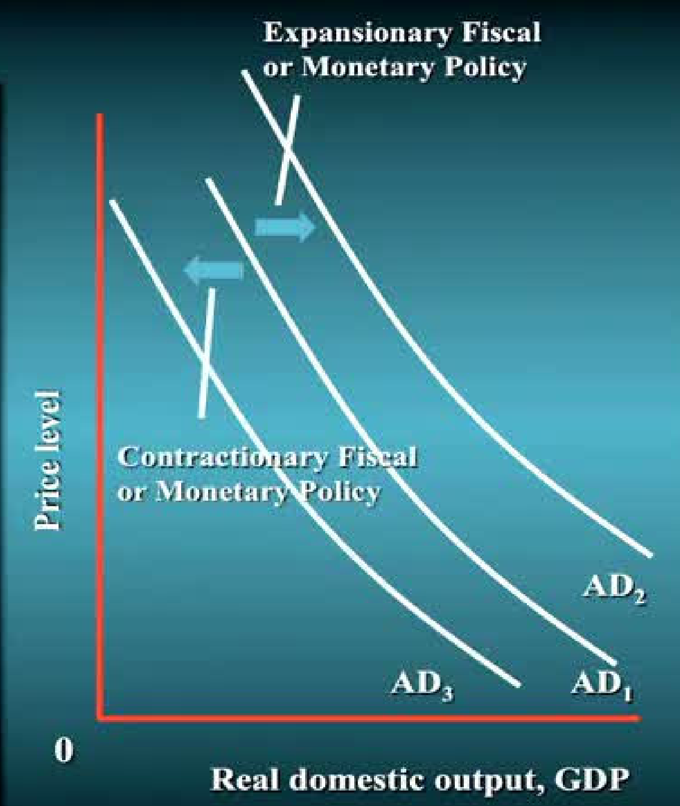



Factors shifting the AD curve
1. Change in consumer spending
a. Consumer wealth
b. Consumer expectations
c. Household indebtedness or credit conditions
d. Tax policy
2. Change in investment spending
a. Interest rates
b. Profit expectations on investment projects
c. Business taxes
d. Technology
e. Degree of excess capacity
3. Change in government spending
4. Change in net export spending
a. National income abroad
b. Exchange rates
Price level
0
Real domestic output, GDP
AD$_2$
AD$_1$


Factors shifting the AD curve
1. Change in consumer spending
a. Consumer wealth
b. Consumer expectations
c. Household indebtedness or credit conditions
d. Tax policy
2. Change in investment spending
a. Interest rates
b. Profit expectations on investment projects
c. Business taxes
d. Technology
e. Degree of excess capacity
3. Change in government spending
4. Change in net export spending
a. National income abroad
b. Exchange rates
Price level
0
Real domestic output, GDP
AD$_2$
AD$_3$
AD$_1$

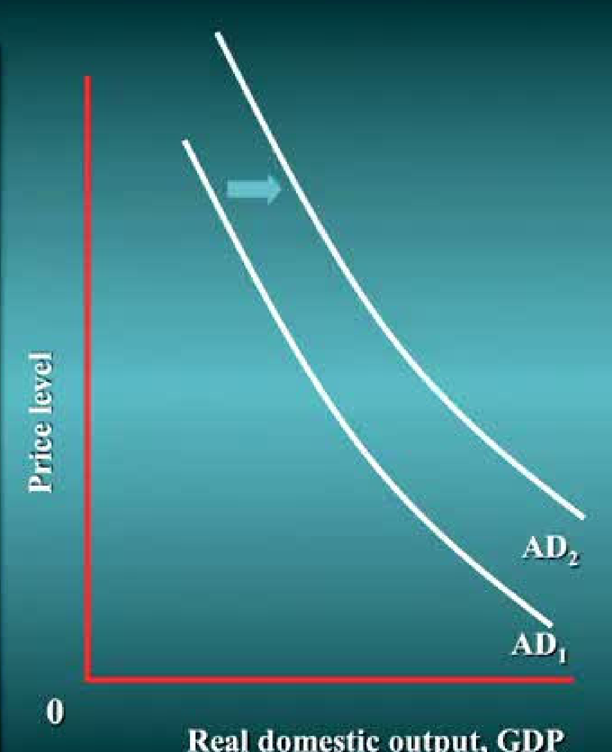
Factors shifting the AD curve

1. Change in consumer spending
   - a. Consumer wealth
   - b. Consumer expectations
   - c. Household indebtedness or credit conditions
   - d. Tax policy
2. Change in investment spending
   - a. Interest rates
   - b. Profit expectations on investment projects
   - c. Business taxes
   - d. Technology
   - e. Degree of excess capacity
3. Change in government spending
4. Change in net export spending
   - a. National income abroad
   - b. Exchange rates



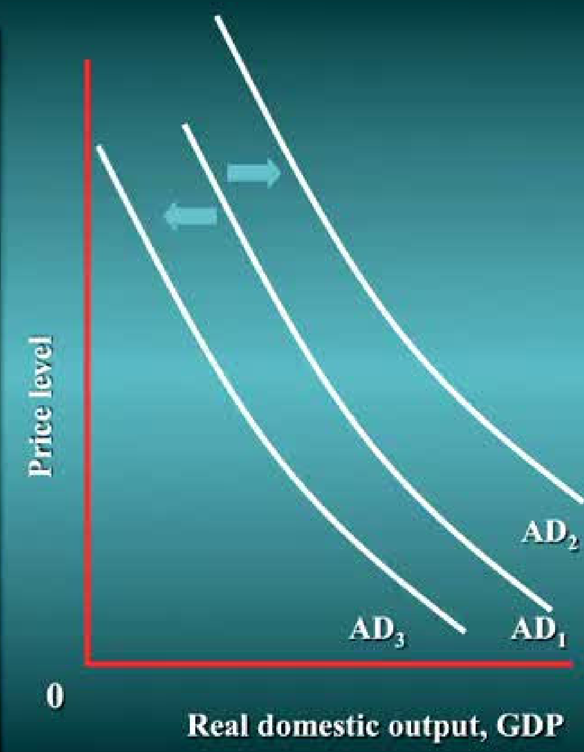
Factors shifting the AD curve

1. Change in consumer spending
   - a. Consumer wealth
   - b. Consumer expectations
   - c. Household indebtedness or credit conditions
   - d. Tax policy
2. Change in investment spending
   - a. Interest rates
   - b. Profit expectations on investment projects
   - c. Business taxes
   - d. Technology
   - e. Degree of excess capacity
3. Change in government spending
4. Change in net export spending
   - a. National income abroad ↑
   - b. Exchange rates



Factors shifting the AD curve

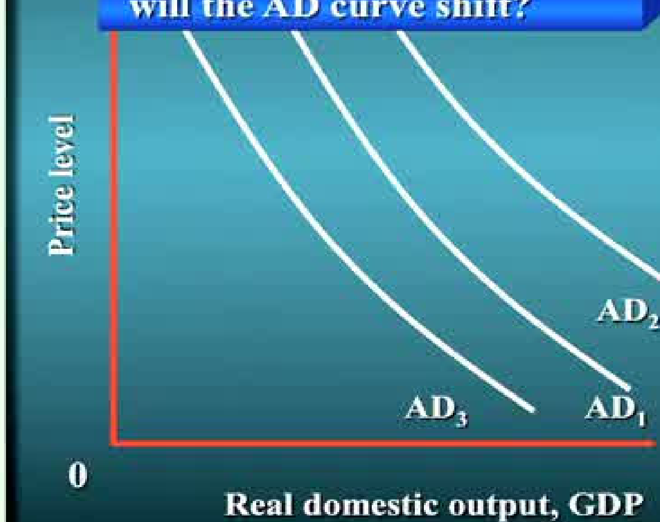
1. Change in consumer spending
   - a. Consumer wealth
   - b. Consumer expectations
   - c. Household indebtedness or credit conditions
   - d. Tax policy
2. Change in investment spending
   - a. Interest rates
   - b. Profit expectations on investment projects
   - c. Business taxes
   - d. Technology
   - e. Degree of excess capacity
3. Change in government spending
4. Change in net export spending
   - a. National income abroad ↑
   - b. Exchange rates ↑ (strengthens)



Factors shifting the AD curve

1. Change in consumer spending
   - a. Consumer wealth
   - b. Consumer expectations
   - c. Household indebtedness or credit conditions
   - d. Tax policy
2. Change in investment spending
   - a. Interest rates
   - b. Profit expectations on investment projects
   - c. Business taxes
   - d. Technology
   - e. Degree of excess capacity
3. Change in government spending
4. Change in net export spending
   - a. National income abroad
   - b. Exchange rates

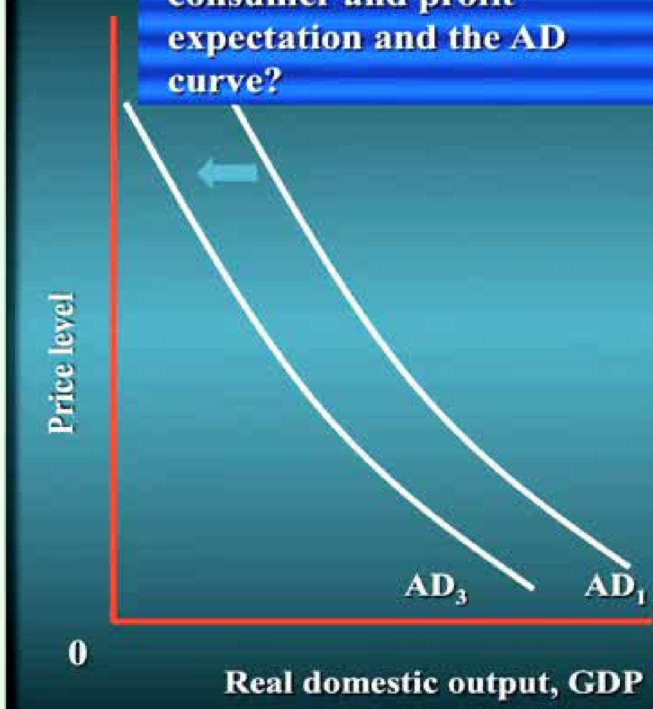
- Suppose that the Dow Jones stock market average plunges 2000 points in a week.
- Which item in the table will this affect and which way will the AD curve shift?



Factors shifting the AD curve

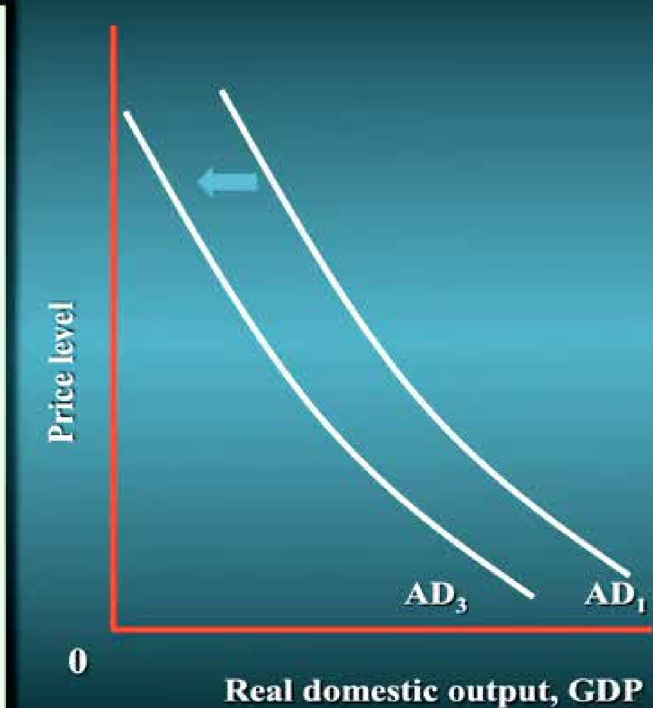
1. Change in consumer spending
   - a. Consumer wealth
   - b. Consumer expectations
   - c. Household indebtedness or credit conditions
   - d. Tax policy
2. Change in investment spending
   - a. Interest rates
   - b. Profit expectations on investment projects
   - c. Business taxes
   - d. Technology
   - e. Degree of excess capacity
3. Change in government spending
4. Change in net export spending
   - a. National income abroad
   - b. Exchange rates

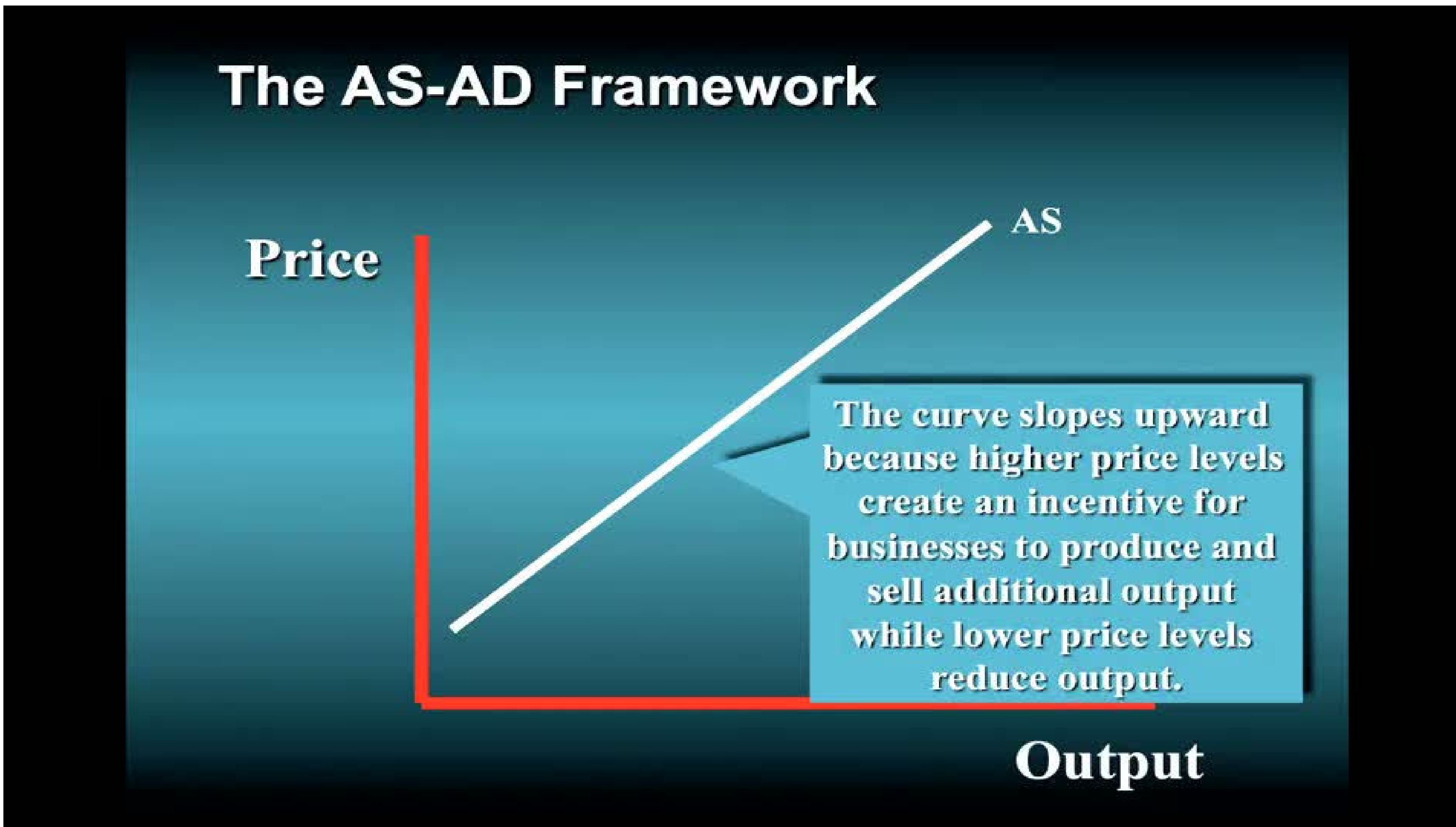
- How might news of a possible recession affect consumer and profit expectation and the AD curve?

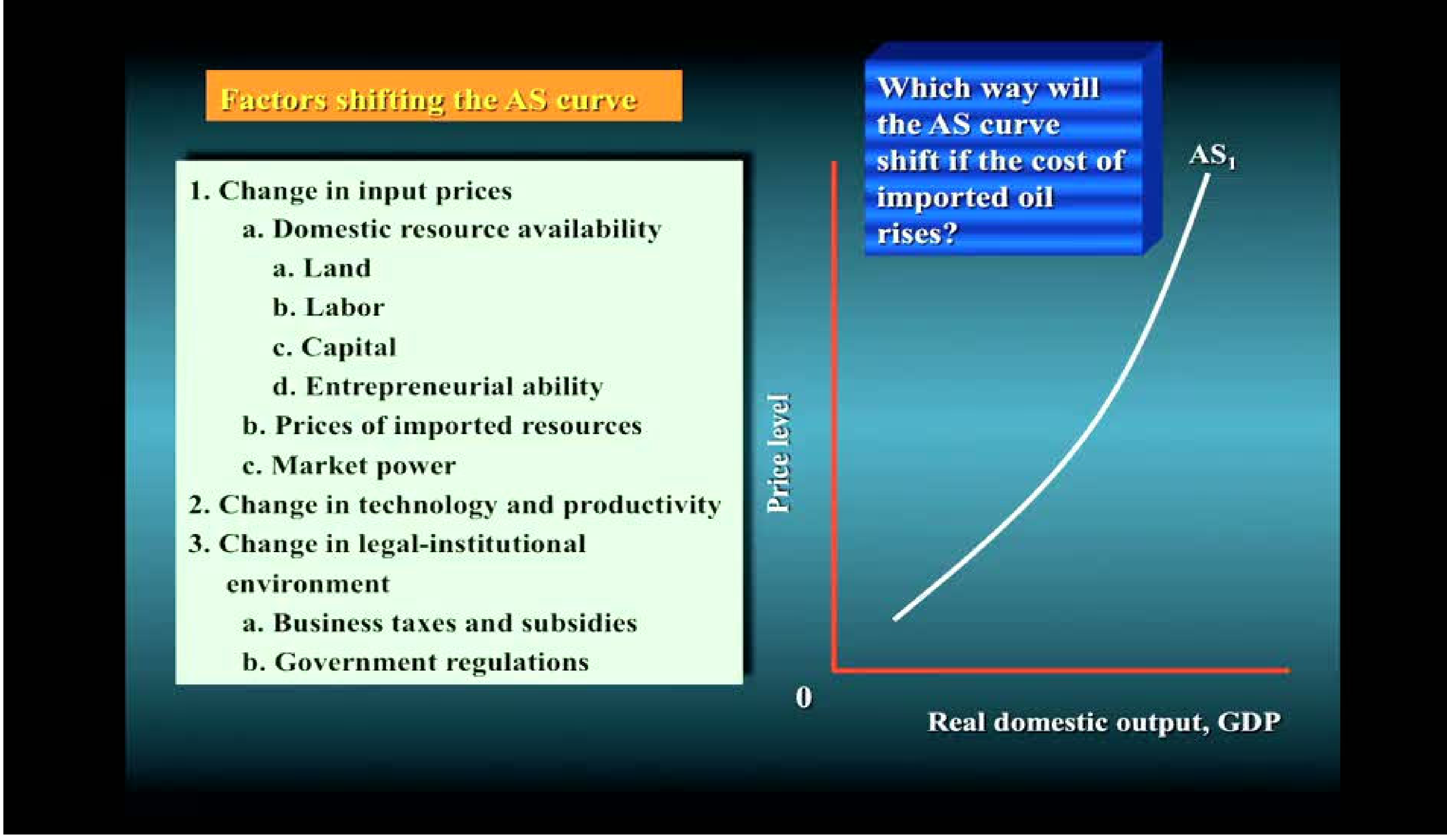


Factors shifting the AD curve

1. Change in consumer spending
   - a. Consumer wealth
   - b. Consumer expectations
   - c. Household indebtedness or credit conditions
   - d. Tax policy
2. Change in investment spending
   - a. Interest rates
   - b. Profit expectations on investment projects
   - c. Business taxes
   - d. Technology
   - e. Degree of excess capacity
3. Change in government spending
4. Change in net export spending
   - a. National income abroad
   - b. Exchange rates

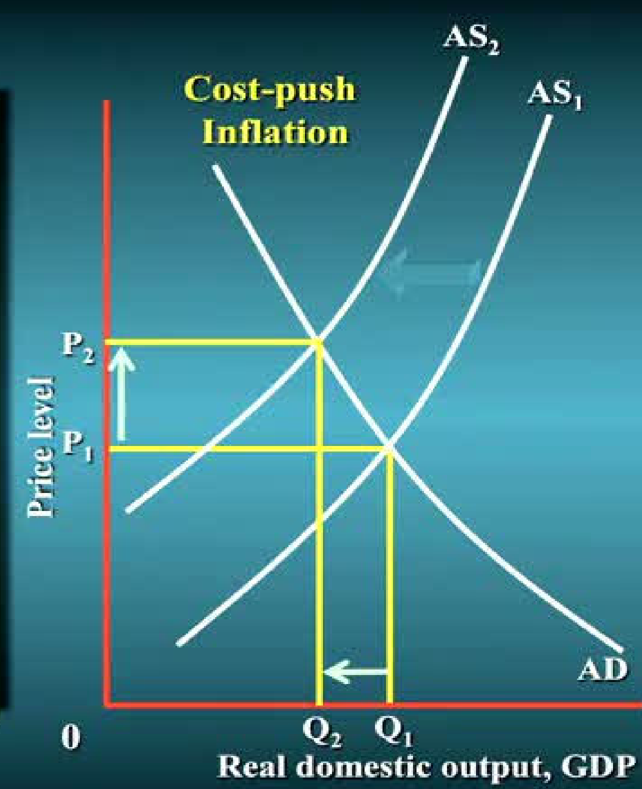



The AS-AD Framework
Price
AS
The curve slopes upward because higher price levels create an incentive for businesses to produce and sell additional output while lower price levels reduce output.
Output

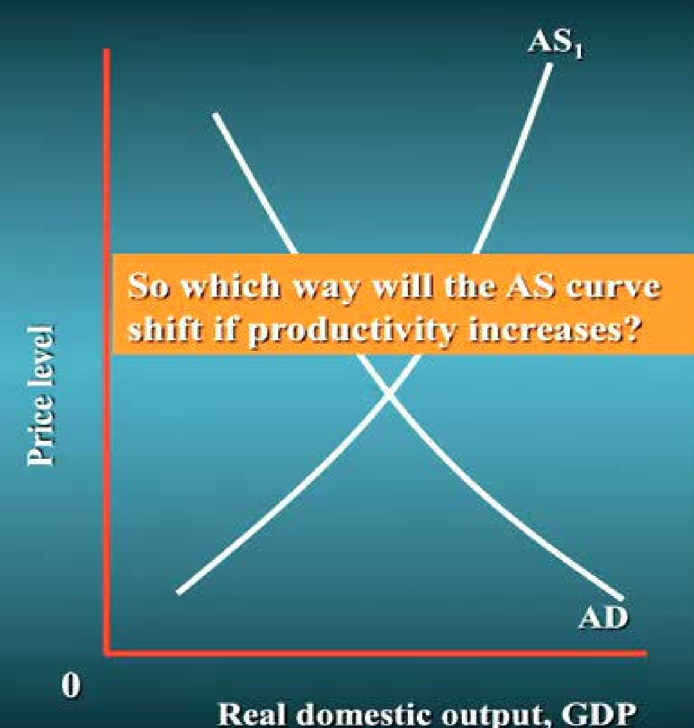

Factors shifting the AS curve
1. Change in input prices
a. Domestic resource availability
a. Land
b. Labor
c. Capital
d. Entrepreneurial ability
b. Prices of imported resources
c. Market power
2. Change in technology and productivity
3. Change in legal-institutional environment
a. Business taxes and subsidies
b. Government regulations
Which way will the AS curve shift if the cost of imported oil rises?
AS_1
Price level
0
Real domestic output, GDP

Factors shifting the AS curve

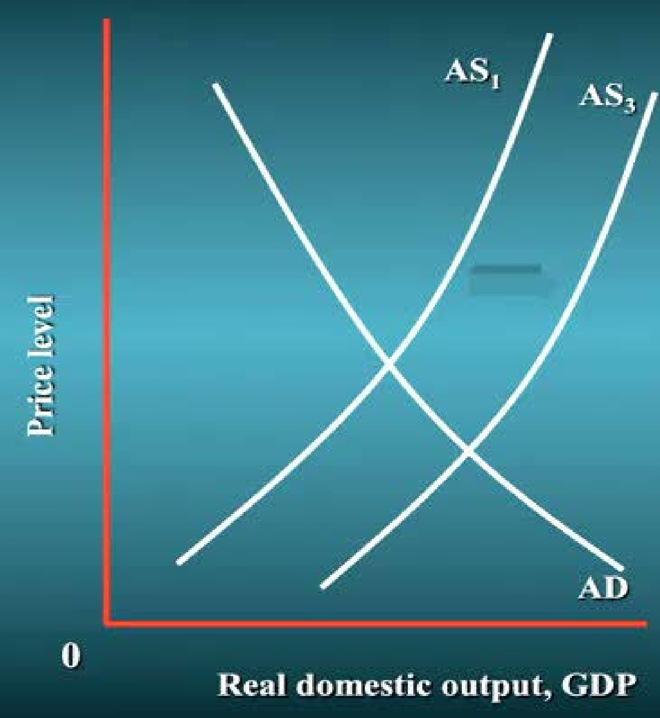
1. Change in input prices
   a. Domestic resource availability
      a. Land
      b. Labor
      c. Capital
      d. Entrepreneurial ability
   b. Prices of imported resources
   c. Market power
2. Change in technology and productivity
3. Change in legal-institutional environment
   a. Business taxes and subsidies
   b. Government regulations



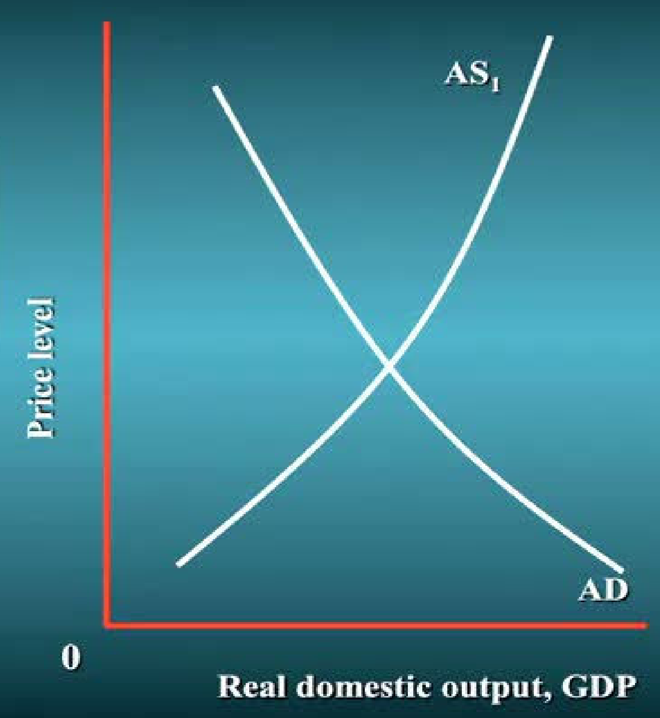
- Productivity = $\frac{\text{total output}}{\text{total inputs}}$
- An increase in productivity means the economy can obtain more real output from its limited resources.



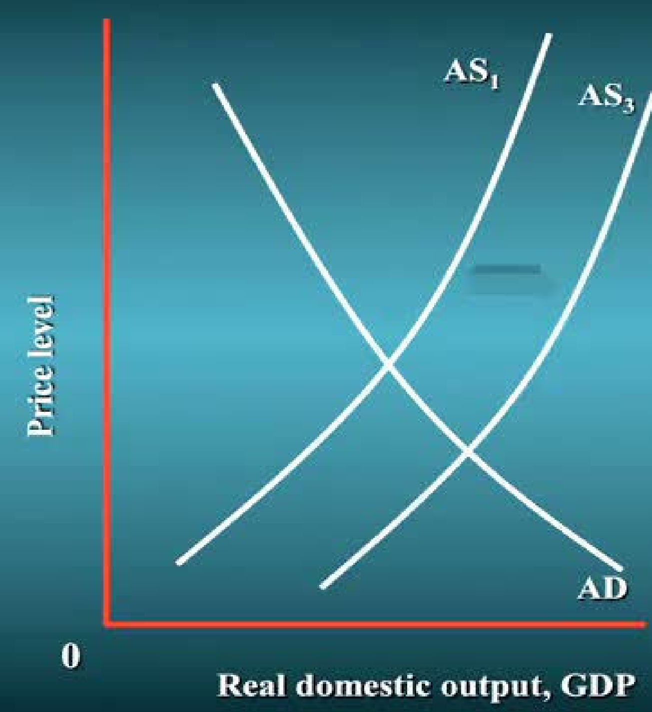
- Increases in productivity increase the potential output of an economy.



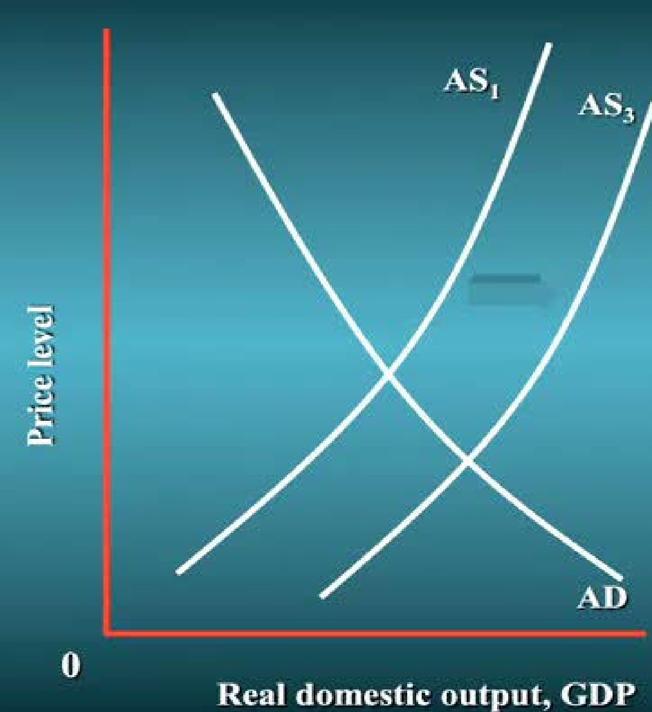
- What will happen to the AS curve if the sales tax or the payroll tax or excise taxes are decreased?

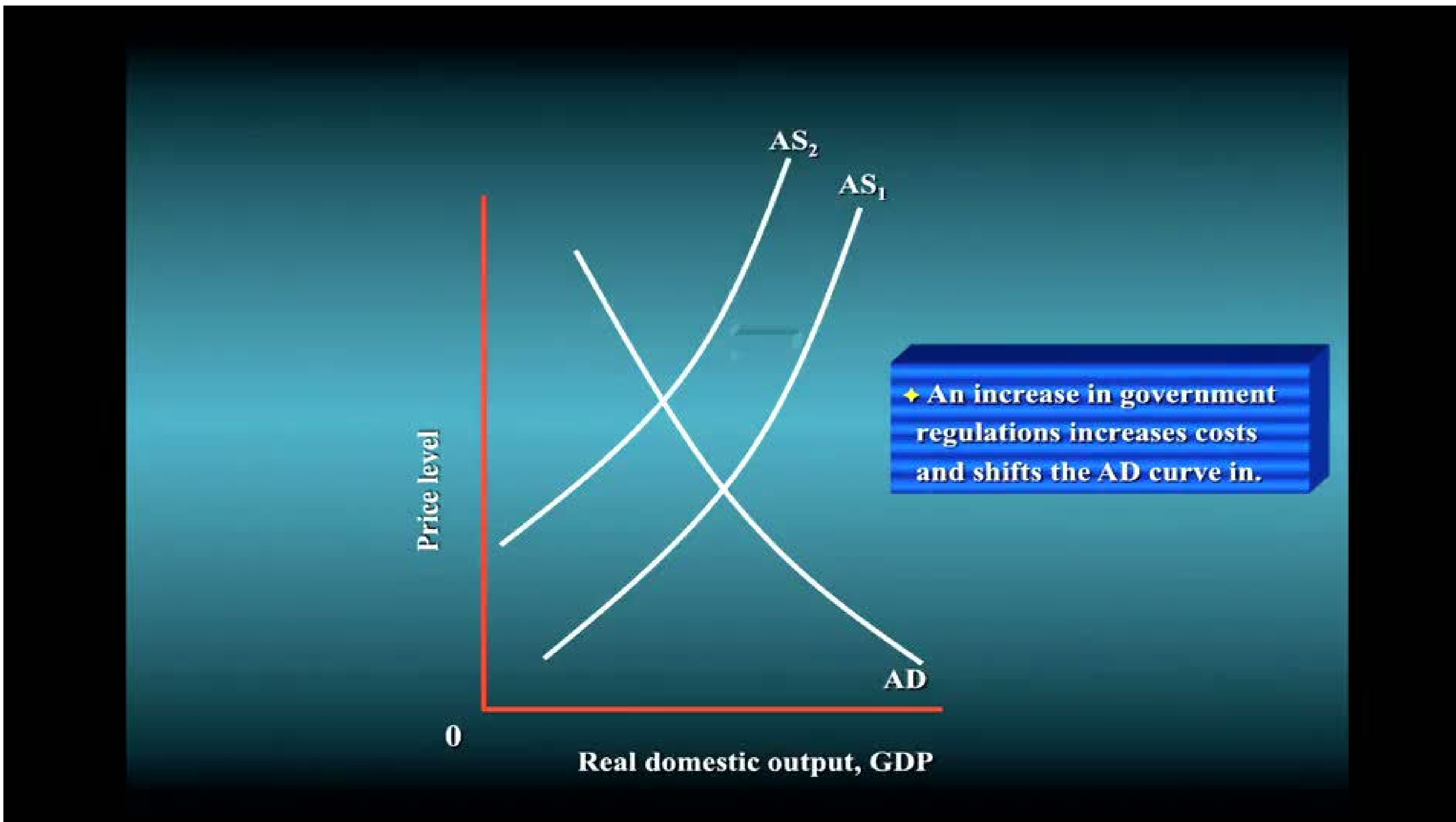


✦A tax decrease will decrease production costs and thereby increase aggregate supply.

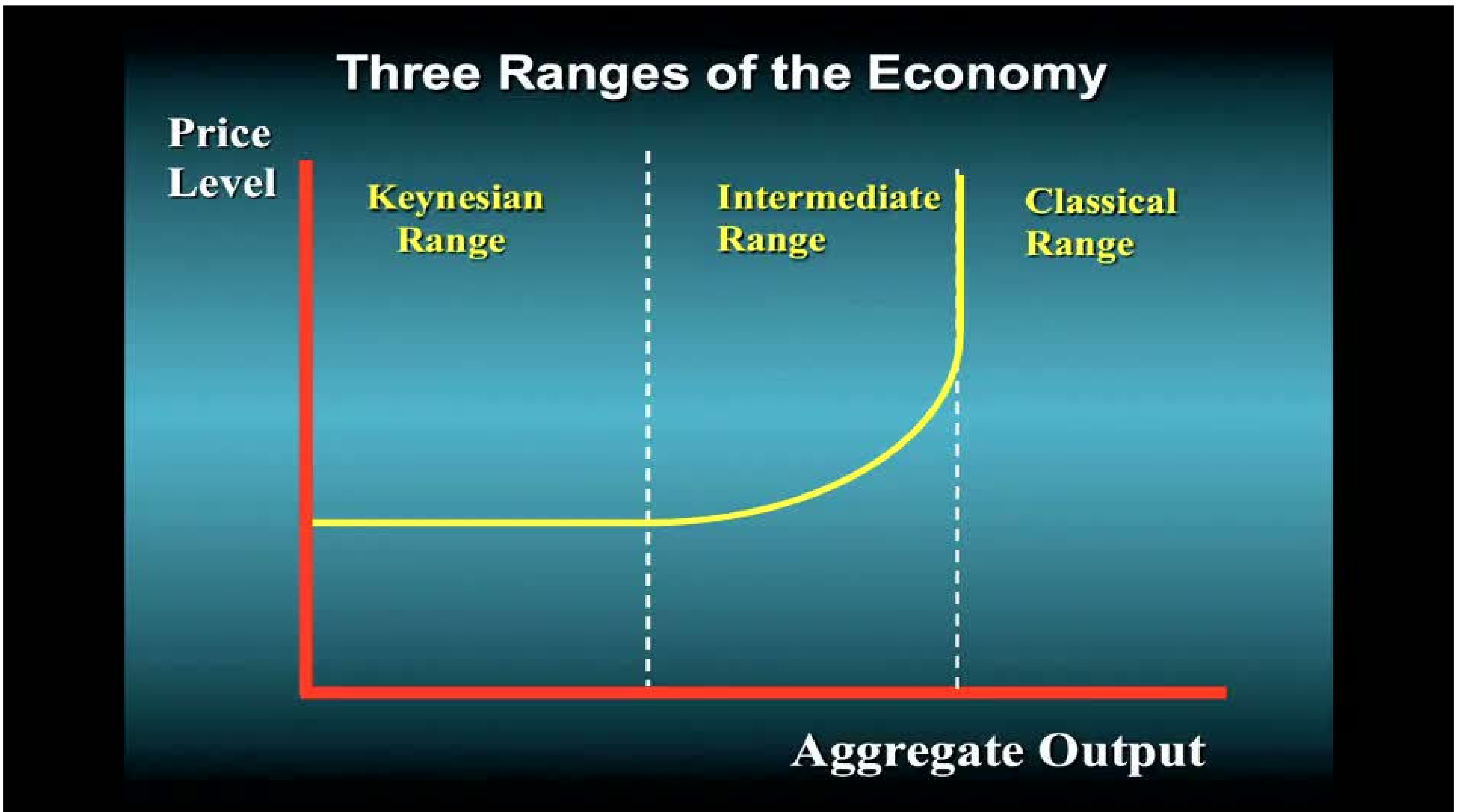


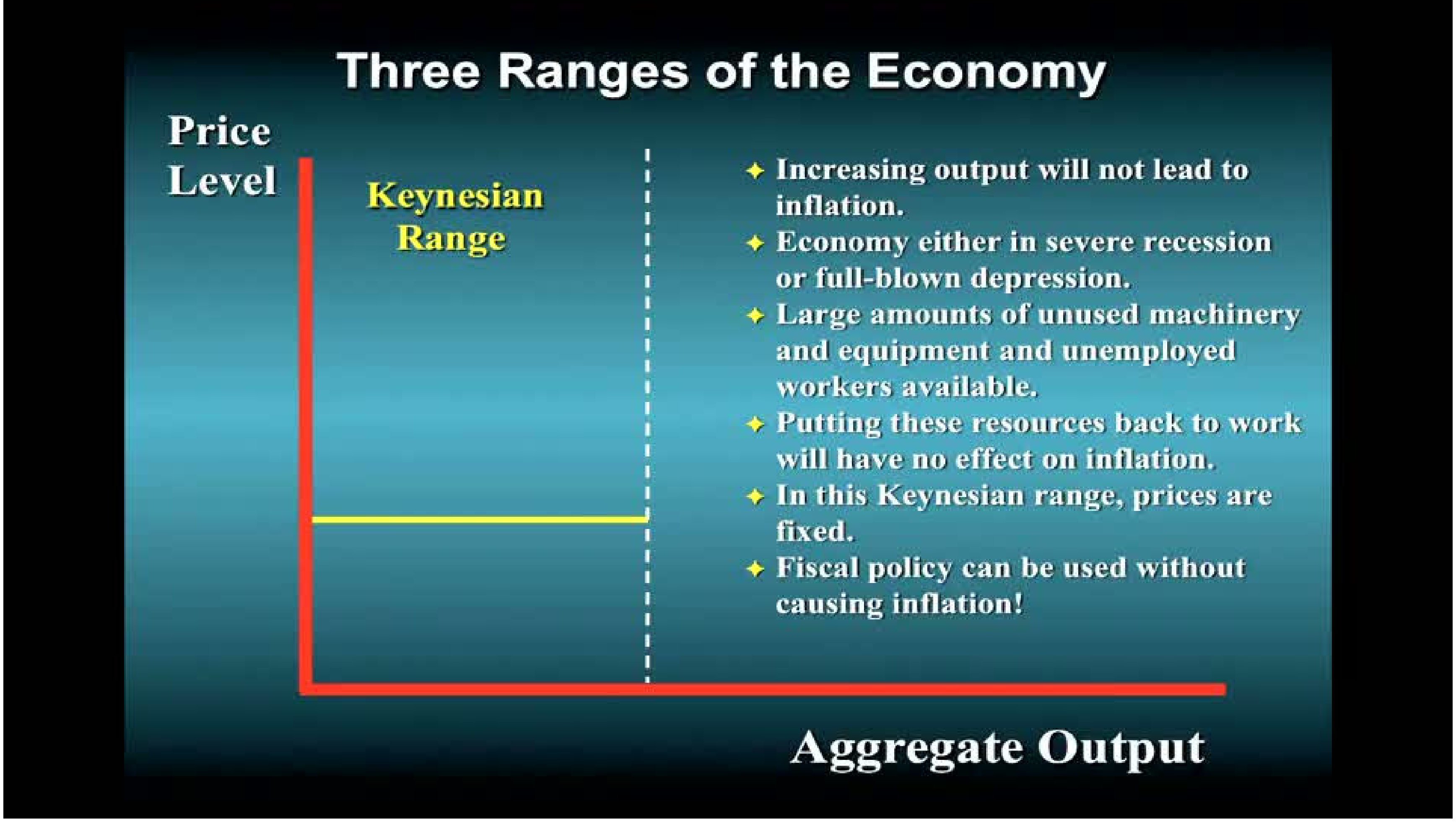
✦What about an increase in government regulation such as tougher clean air or clean water requirements?

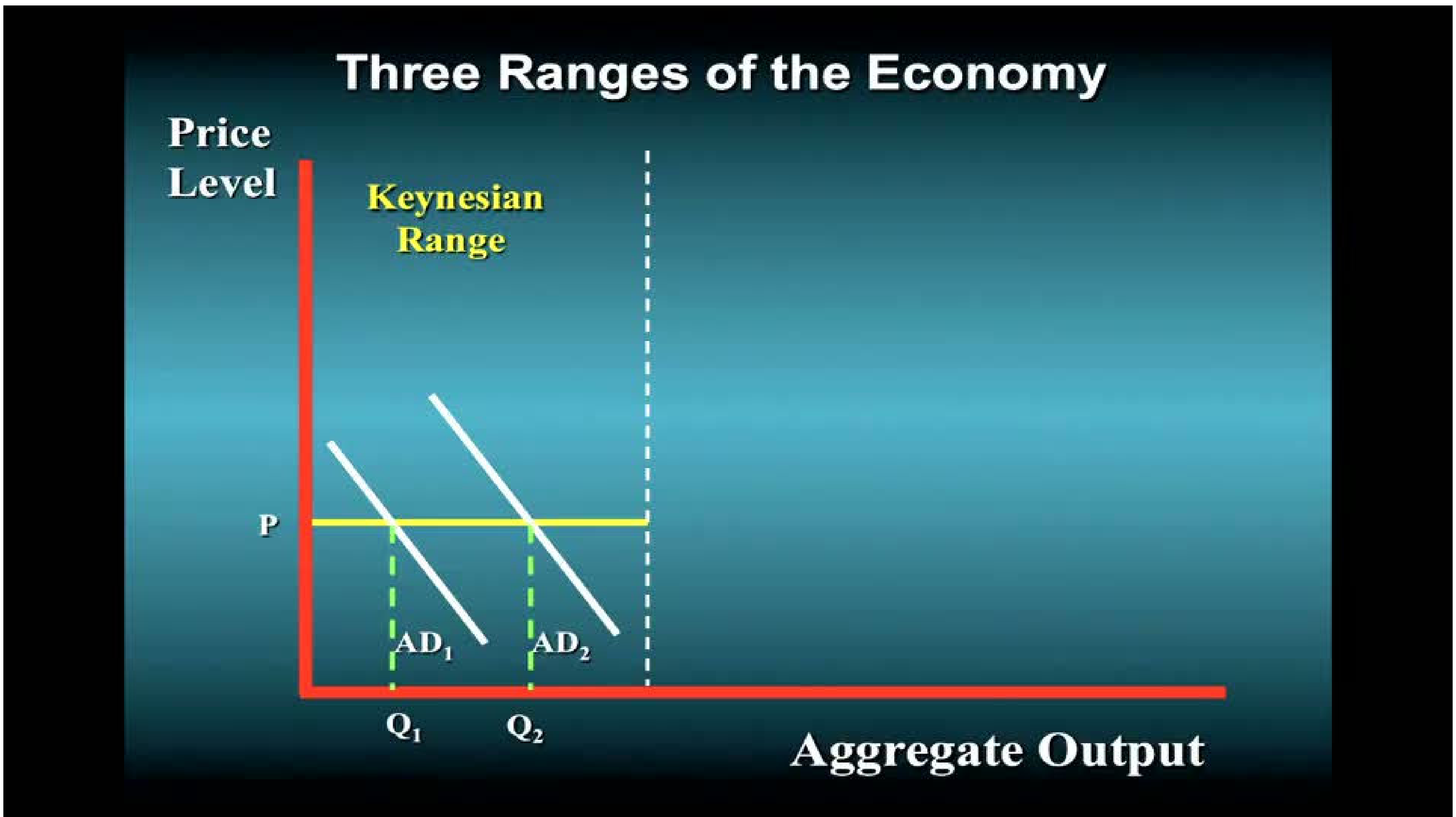


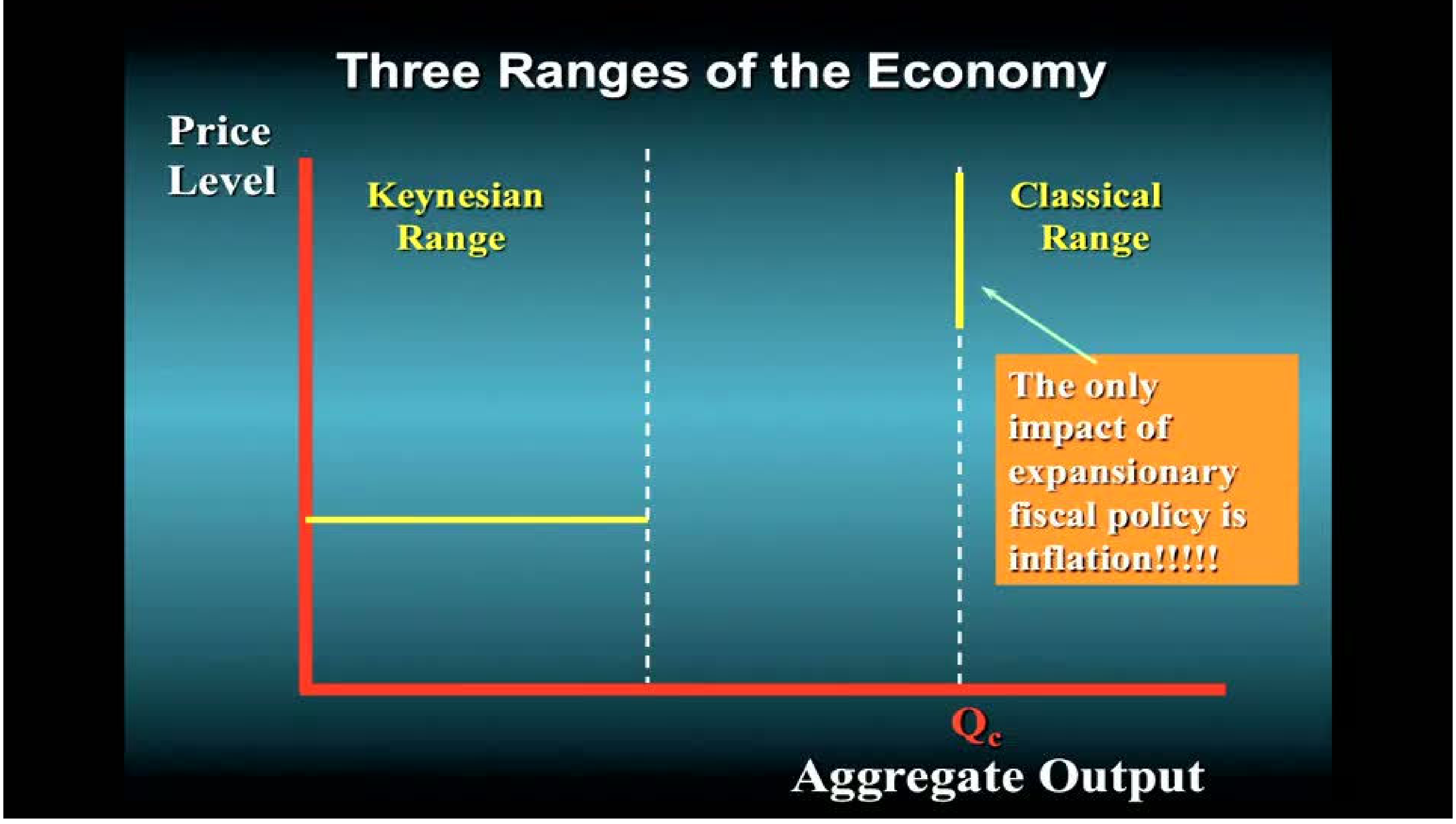

AS$_2$
AS$_1$
Price level
AD
0
Real domestic output, GDP
✦ An increase in government regulations increases costs and shifts the AD curve in.

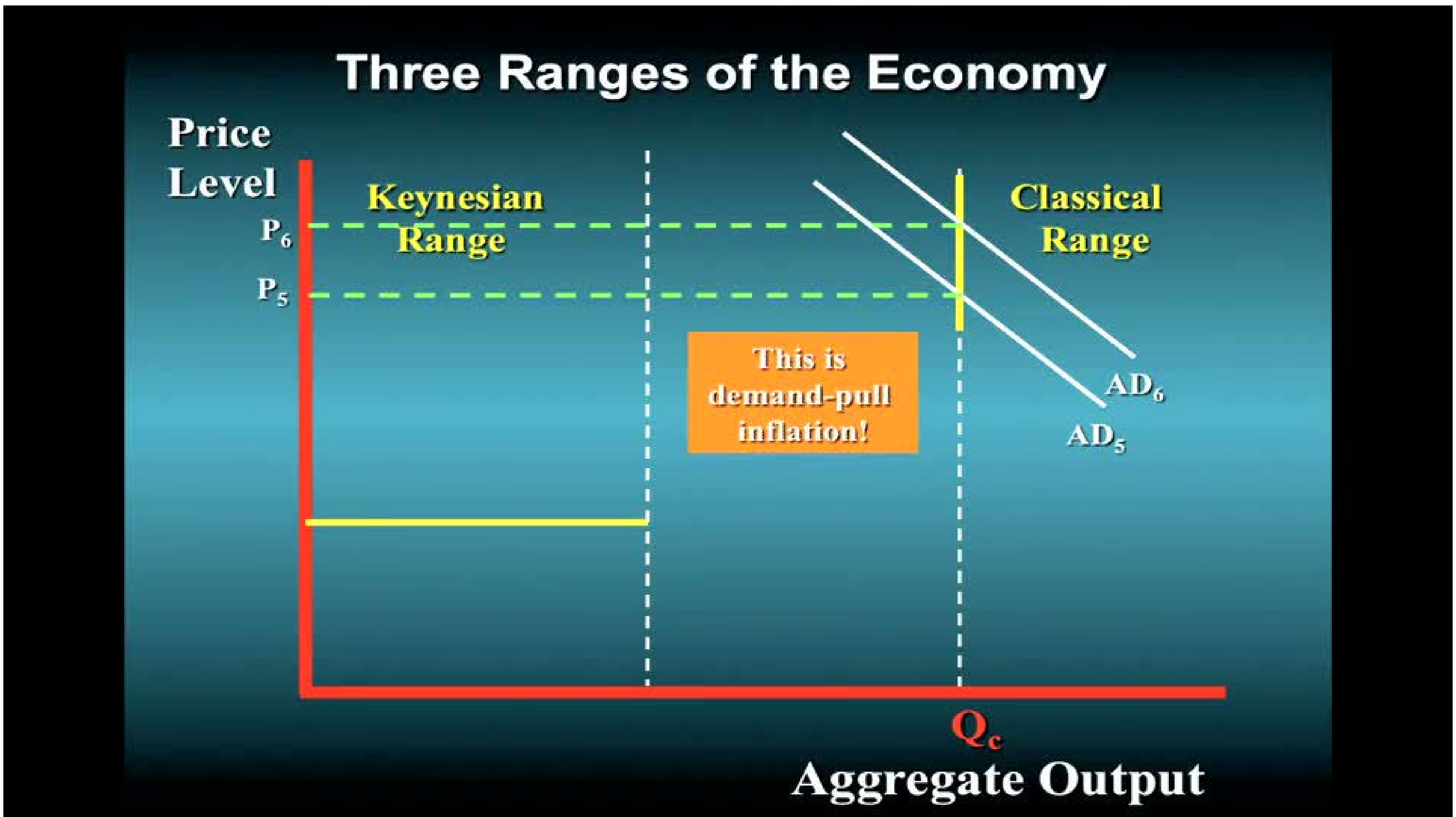

LECTURE TWO - PART SIX

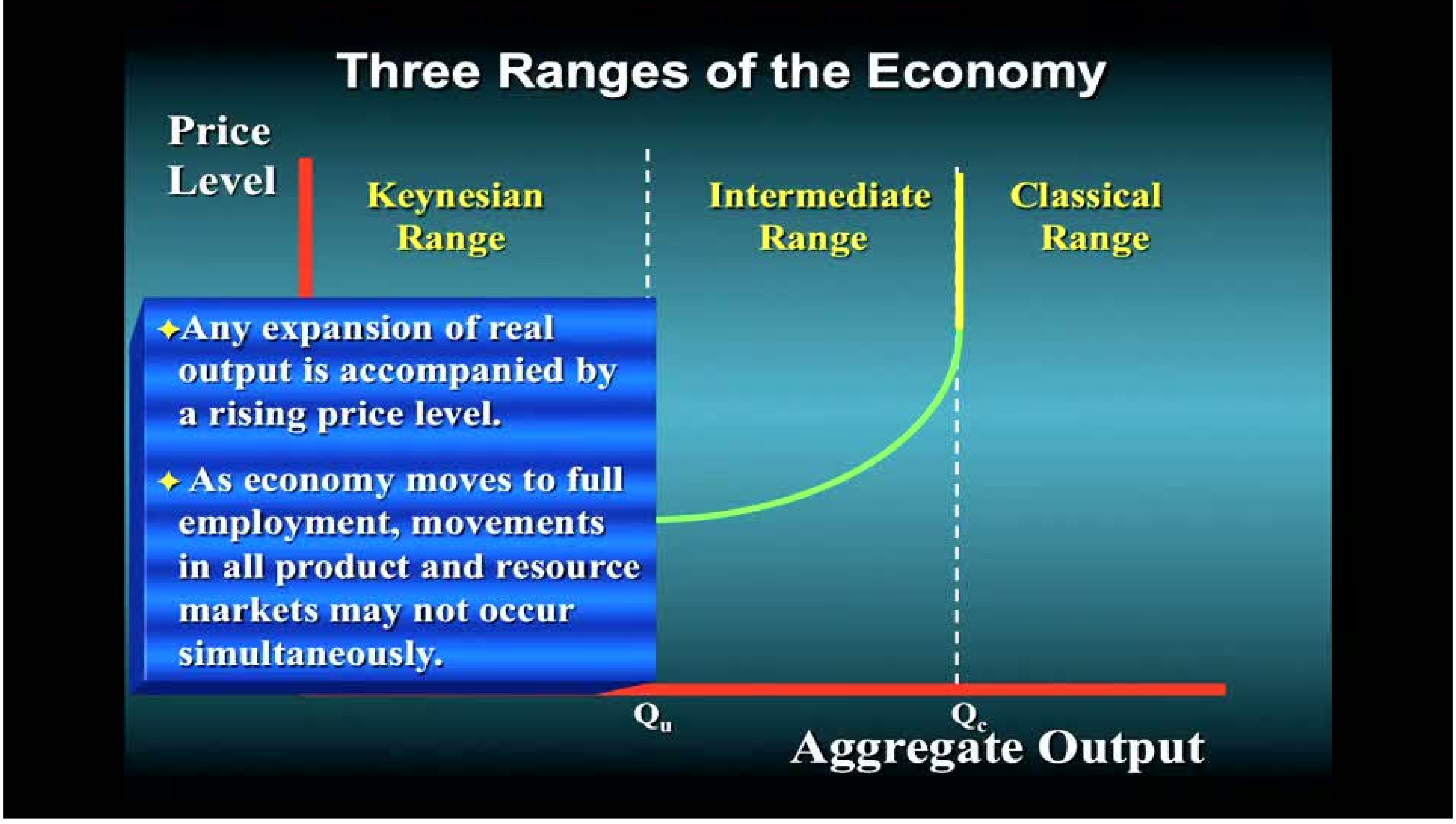

Three Ranges of the Economy
Price Level
Keynesian Range
Intermediate Range
Classical Range
Aggregate Output

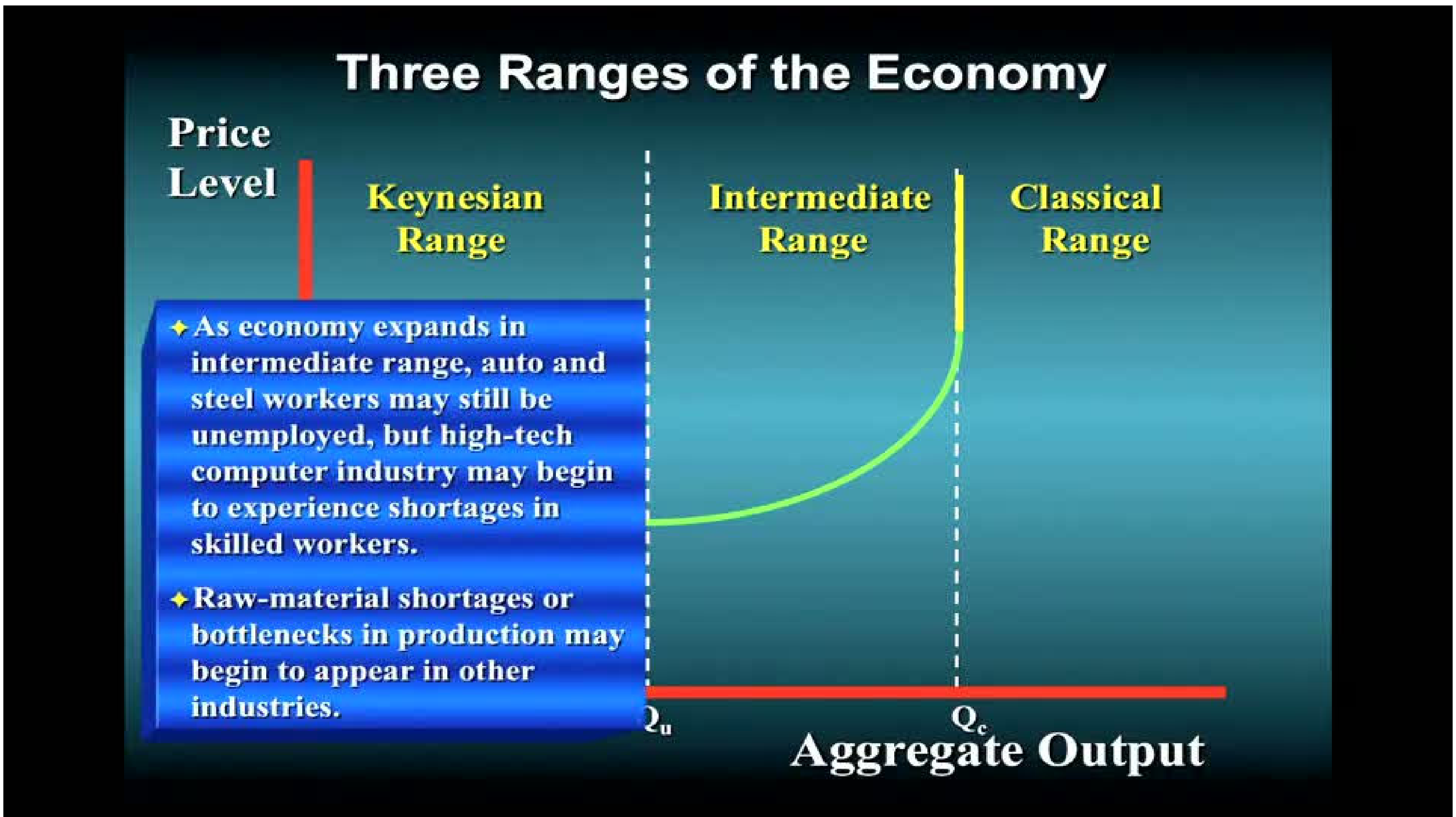

Three Ranges of the Economy
Price Level
Keynesian Range
Increasing output will not lead to inflation.
Economy either in severe recession or full-blown depression.
Large amounts of unused machinery and equipment and unemployed workers available.
Putting these resources back to work will have no effect on inflation.
In this Keynesian range, prices are fixed.
Fiscal policy can be used without causing inflation!
Aggregate Output

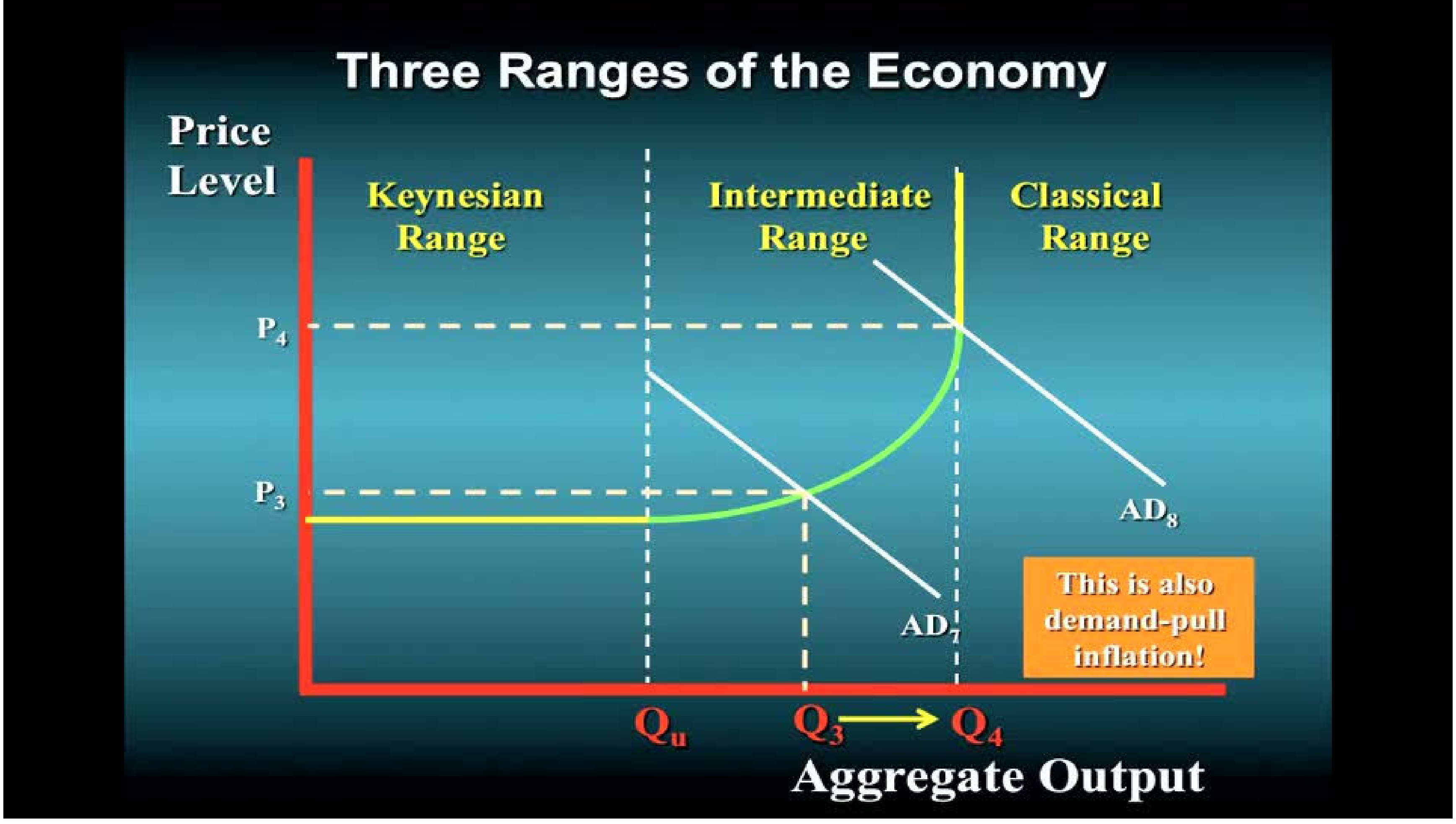

Three Ranges of the Economy
Price Level
Keynesian Range
P
AD1
AD2
Q1
Q2
Aggregate Output

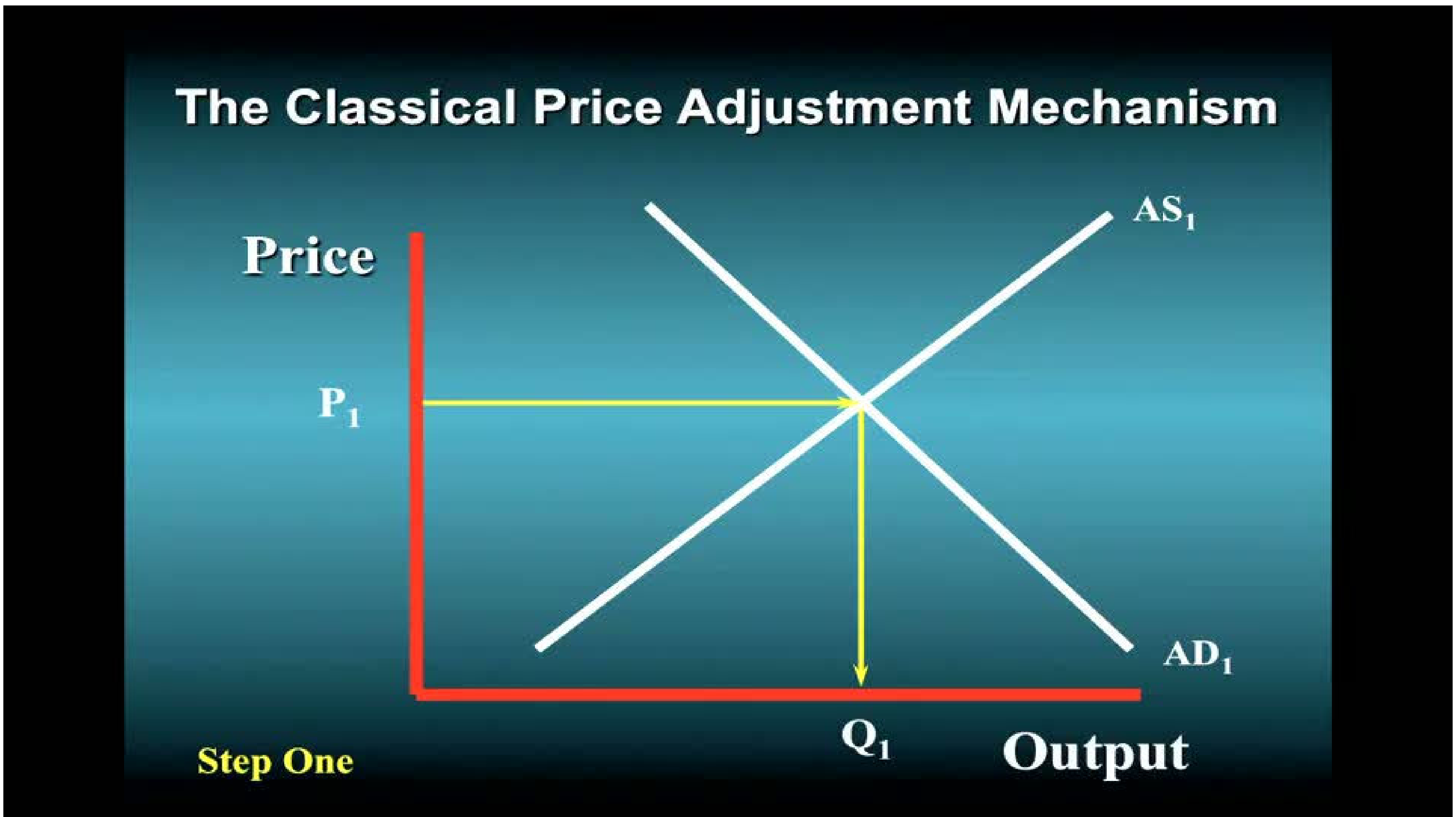

Three Ranges of the Economy
Price Level
Keynesian Range
Classical Range
The only impact of expansionary fiscal policy is inflation!!!!!
Qc
Aggregate Output

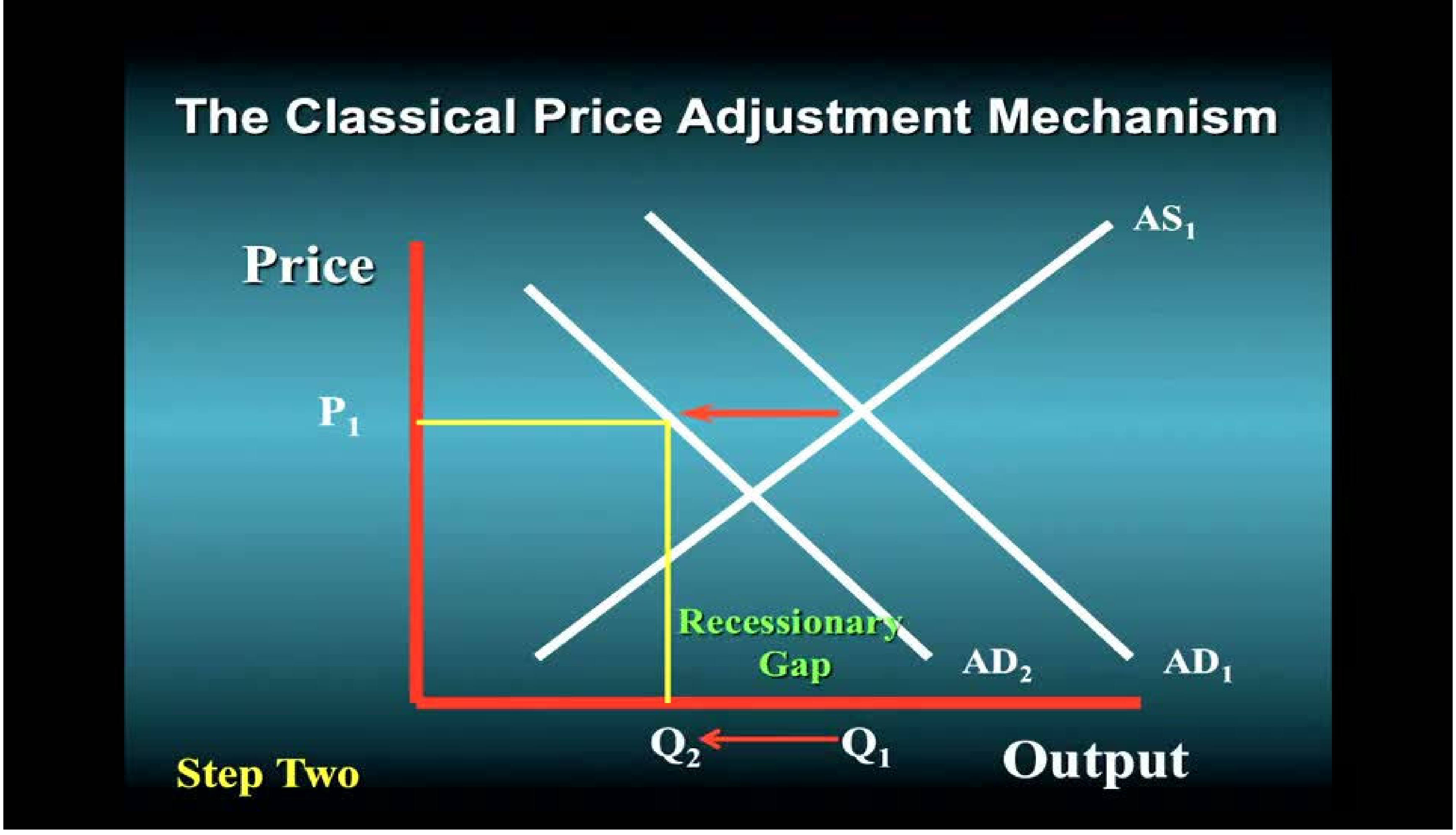

Three Ranges of the Economy
Price
Level
Keynesian
Range
Classical
Range
P6
P5
This is
demand-pull
inflation!
AD6
AD5
Qc
Aggregate Output

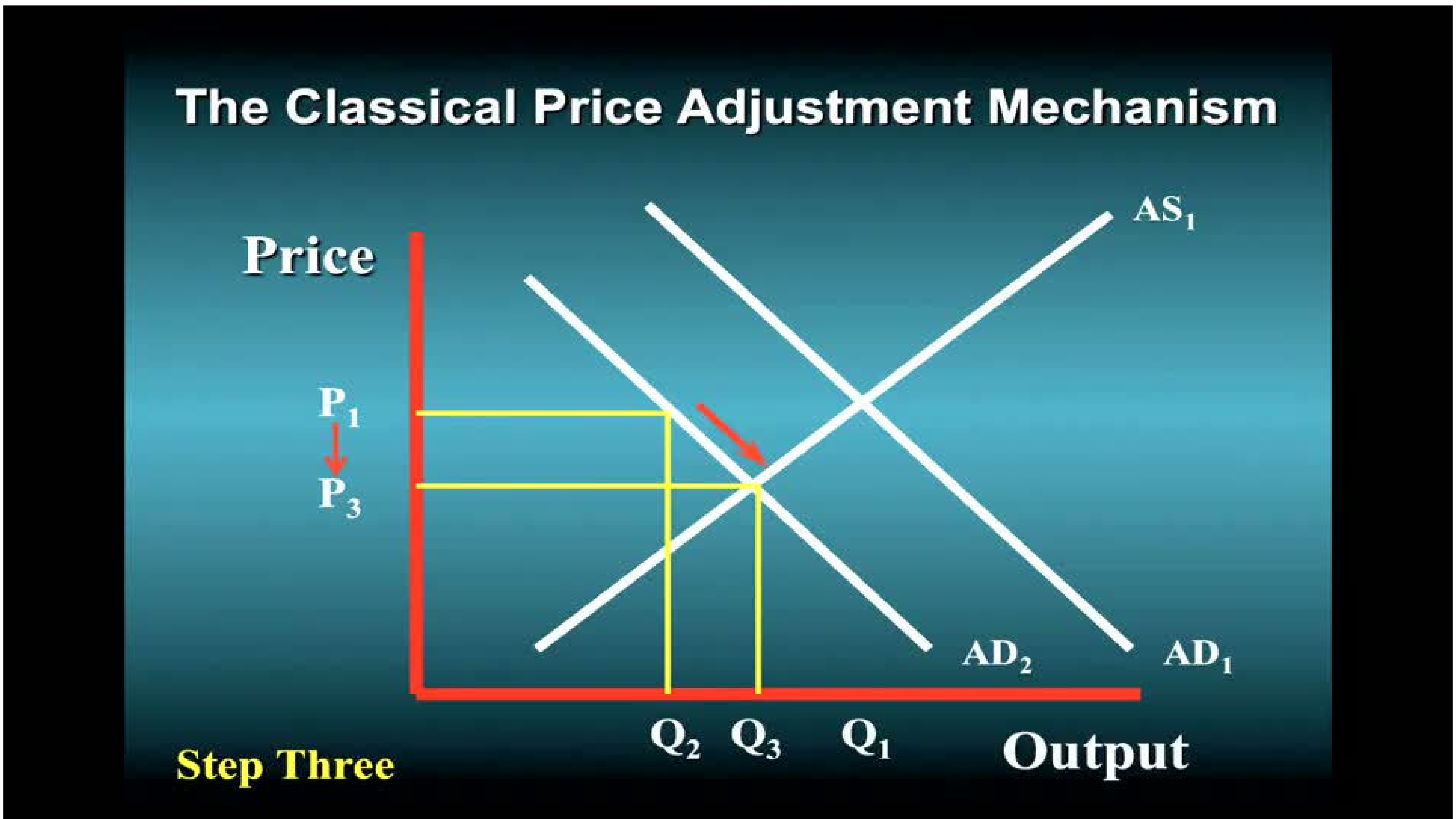

Three Ranges of the Economy
Price
Level
Keynesian
Range
Intermediate
Range
Classical
Range
✦Any expansion of real output is accompanied by a rising price level.
✦As economy moves to full employment, movements in all product and resource markets may not occur simultaneously.
Qu
Qc
Aggregate Output

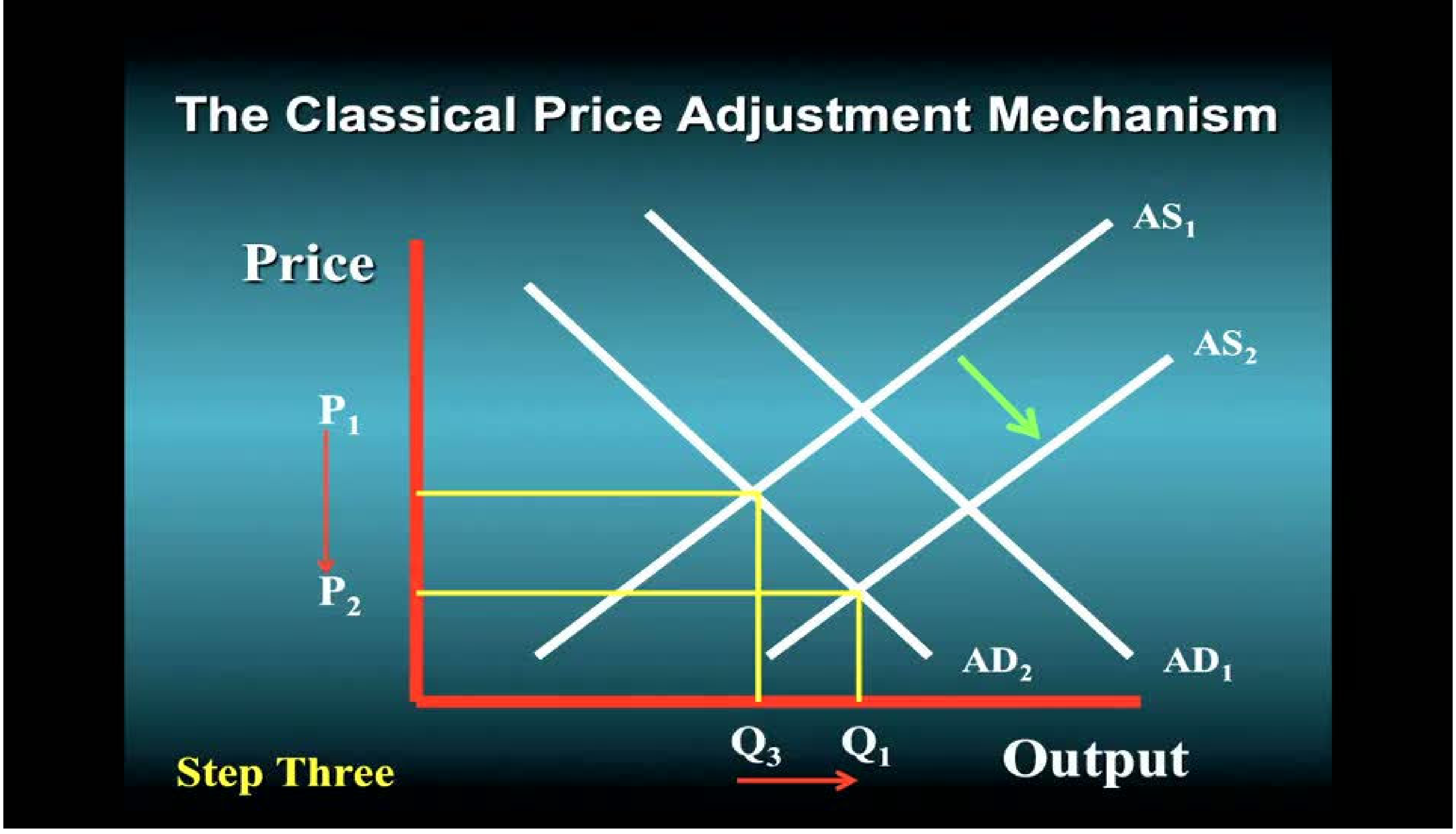

Three Ranges of the Economy
Price Level
Keynesian Range
Intermediate Range
Classical Range
As economy expands in intermediate range, auto and steel workers may still be unemployed, but high-tech computer industry may begin to experience shortages in skilled workers.
Raw-material shortages or bottlenecks in production may begin to appear in other industries.
Qu
Qc
Aggregate Output


Three Ranges of the Economy
Price Level
Keynesian Range
Intermediate Range
Classical Range
P4
P3
AD8
AD7
This is also demand-pull inflation!
Qu
Q3
Q4
Aggregate Output


The Classical Price Adjustment Mechanism
Price
P1
AS1
AD1
Q1
Output
Step One


The Classical Price Adjustment Mechanism
Price
P1
AS1
Recessionary Gap
AD2
AD1
Q2
Q1
Output
Step Two


The Classical Price Adjustment Mechanism
Price
AS1
P1
P3
AD2
AD1
Q2
Q3
Q1
Output
Step Three


The Classical Price Adjustment Mechanism
Price
AS1
AS2
P1
P2
AD2
AD1
Q3
Q1
Output
Step Three

The Classical Price Adjustment Failed During the Great Depression

- The Classical price adjustment mechanism did not lift the economy out of the Great Depression.
- To John Maynard Keynes, the problem was this:

The price adjustments necessary to bring about a recovery were overwhelmed by a much more powerful and deadly “*income adjustment mechanism*.”

In The Next Lecture

- Introduce the Keynesian multiplier model.
- Show how the Keynesian model can be used to illustrate a recovery from a recession or depression.

PLEASE REMEMBER

- **Economics is not something to be memorized but rather conceptualized.**
- **As you study it, think about it too!!!!!**