LSE EC1B5 Macroeconomics

Handout 13

Economic Fluctuations (I)

The Big Picture

Since the late 1920s, the U.S. economy experienced fourteen recessions. Recessions are typically associated with many painful consequences, like loss in employment, loss in income, and loss in consumption. Do we understand why they happen? Also, given how painful they are, can't the government predict when they will happen?

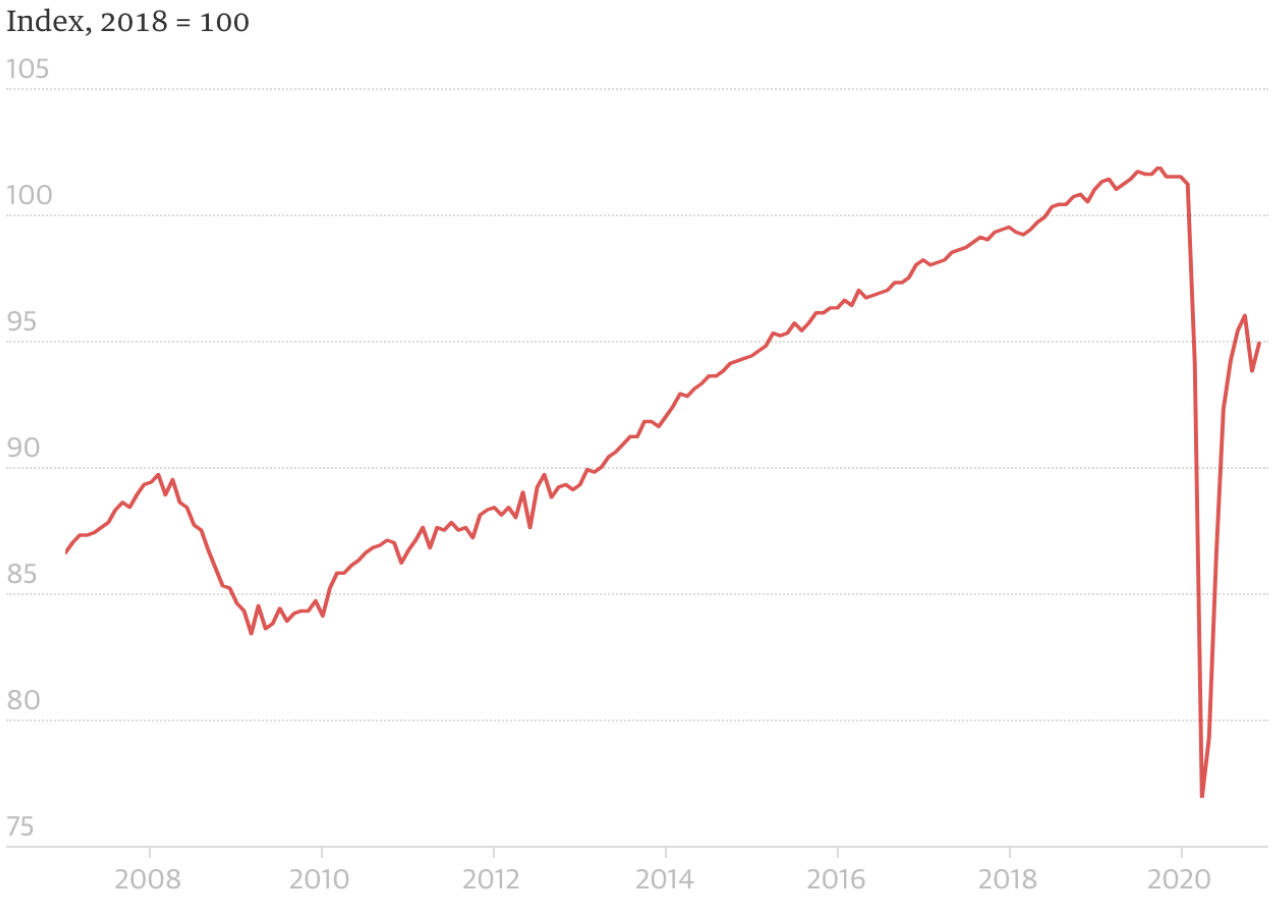
We now address many questions related to **economic fluctuations.**

Example

The coronavirus initiated the 2020 recession. The pandemic led consumers to reduce their demand for goods and services (a demand shock), both because of their concerns about their own household finances and their effort to avoid being infected by the coronavirus. The pandemic led firms to cut back their activities, both because consumers were reducing demand for goods and services and because firms found it costly, or even impossible, to operate safely during the pandemic (a technology shock).

As a result, large contraction in output and rise in unemployment.

The U.K Economy



UK GDP shrank by 9.9% in 2020, the fall in annual GDP is a record in 300 years.

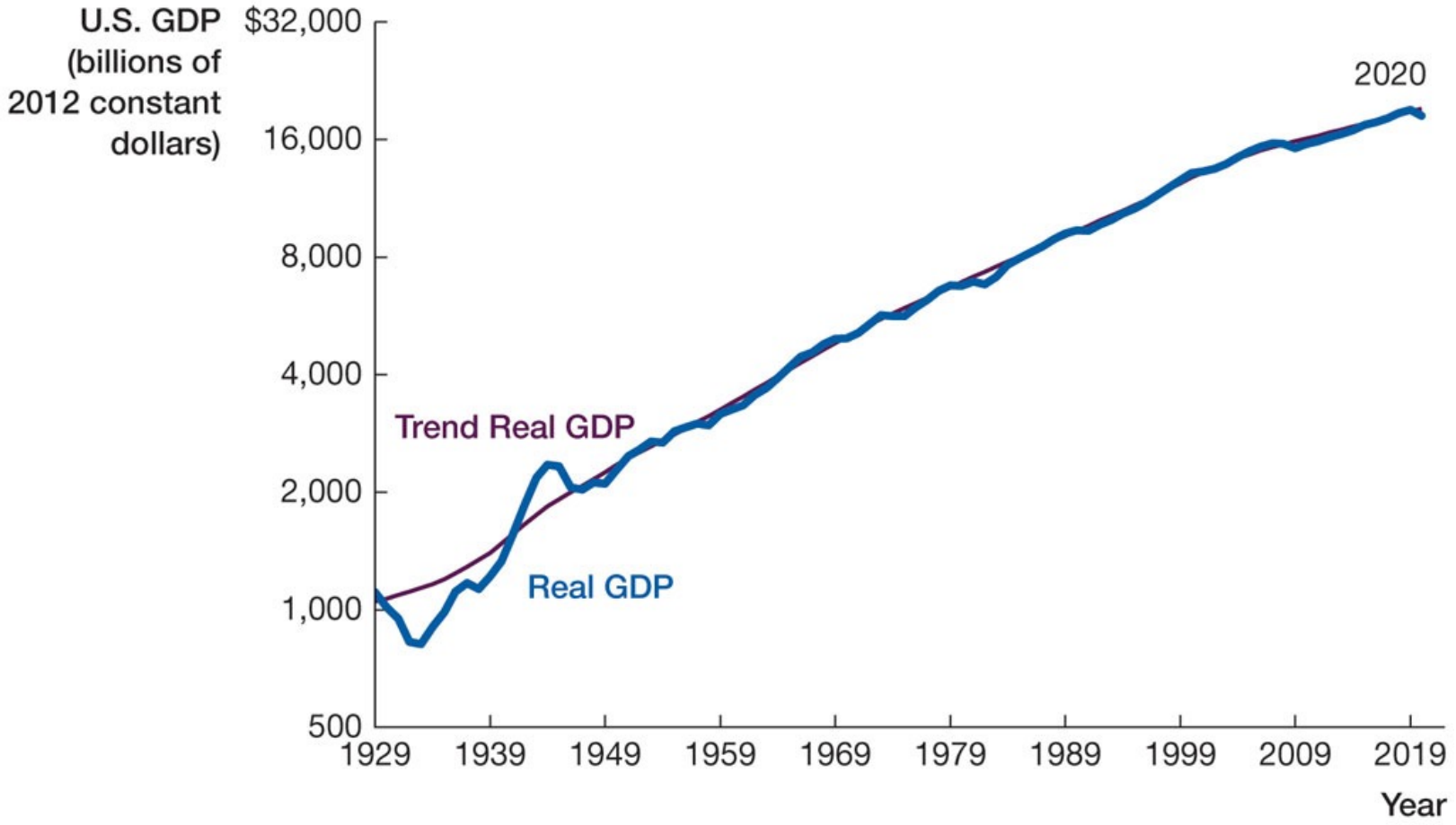
Key Ideas

1. Economic fluctuations have three key features: co-movement, limited predictability, and persistence.
2. Economic fluctuations occur because of technology shocks, changing sentiments, and monetary/financial factors.
3. Economic shocks are amplified by downward wage rigidity and multipliers.

Economic fluctuations or **business cycles**:
Short-run changes in the growth of GDP.

We can examine the business cycle by comparing the path of real GDP to a trend line.

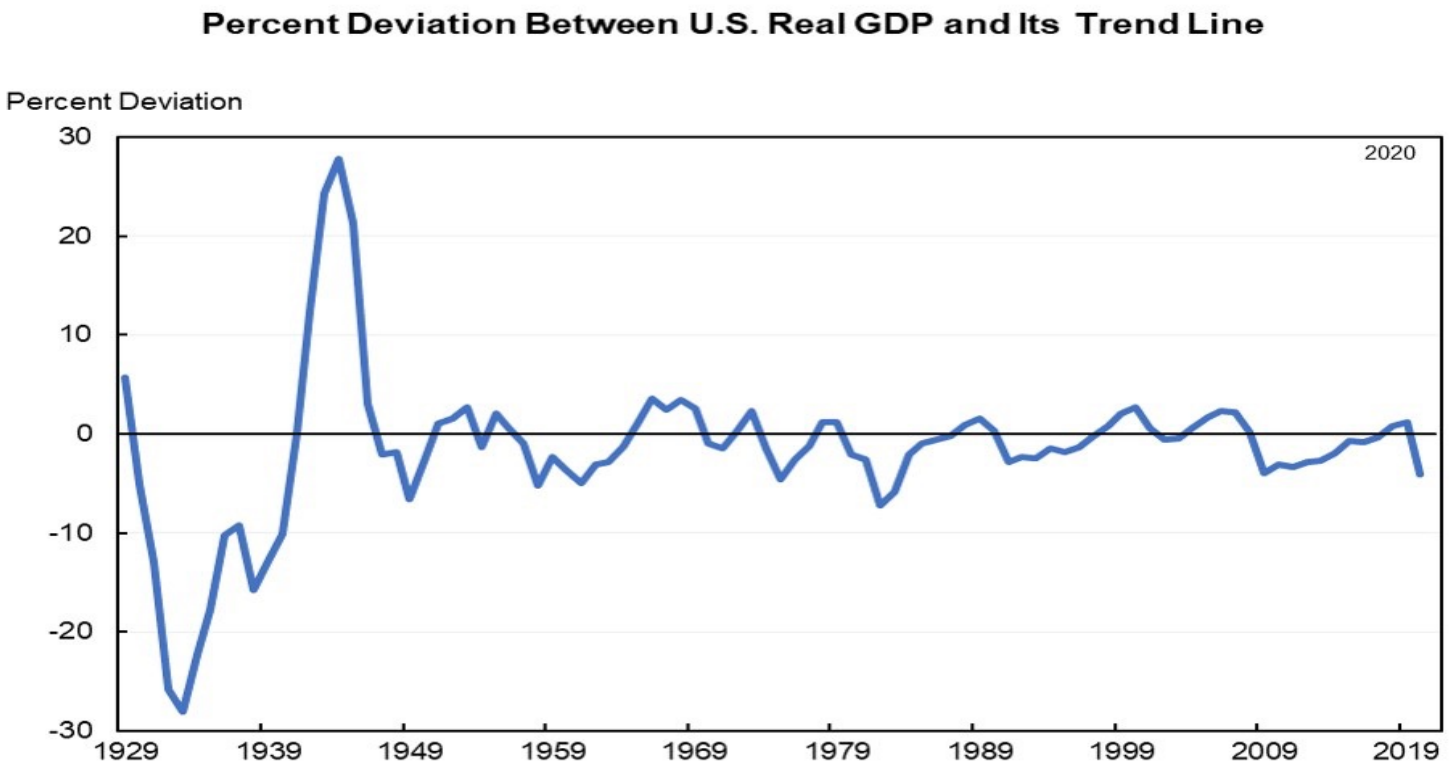
Real U.S. GDP and a Trend Line, 1929-2013, Billions of 2012 constant dollars



We can also examine the business cycle by plotting the percent deviation of real GDP from the trend line.

Question: What historical episodes can you identify in the data?

Percent Deviation between Trend and Actual Data



- Great Depression from 1929 to 1940
- World War II from 1941 to 1945
- Great Recession from 2007 to 2009

Economic Fluctuations and Business Cycles

A **recession** is defined as episodes of negative growth in real GDP.

Economic **expansions** are periods between recessions.

Since 1929, a recession has occurred about once every six years, and recessions have lasted on average about one year.

Notable Recessions in History

- Great Depression from 1929 to 1940
- World War II from 1941 to 1945
- Great Recession from 2007 to 2009
- The 2020 recession that lasted for a few months

U.S. Recessions (1929–2020)

Starting Month	Ending Month	Duration (months)	Decline in Real GDP from Peak to Trough
August 1929	March 1933	43	26.3%
May 1937	June 1938	13	3.3%
February 1945	October 1945	8	12.7%1
November 1948	October 1949	11	1.5%
July 1953	May 1954	10	1.9%
August 1957	April 1958	8	3.0%
April 1960	February 1961	10	0.3%
December 1969	November 1970	11	0.2%
November 1973	March 1975	16	3.1%
January 1980	July 1980	6	2.2%
July 1981	November 1982	16	2.5%
July 1990	March 1991	8	1.3%
March 2001	November 2001	8	0.3%
December 2007	June 2009	18	4.3%
February 2020	NA	NA	NA

Economic fluctuations have three key properties:

1. Co-movement of many macroeconomic variables
2. Limited predictability of fluctuations
3. Persistence in the rate of economic growth

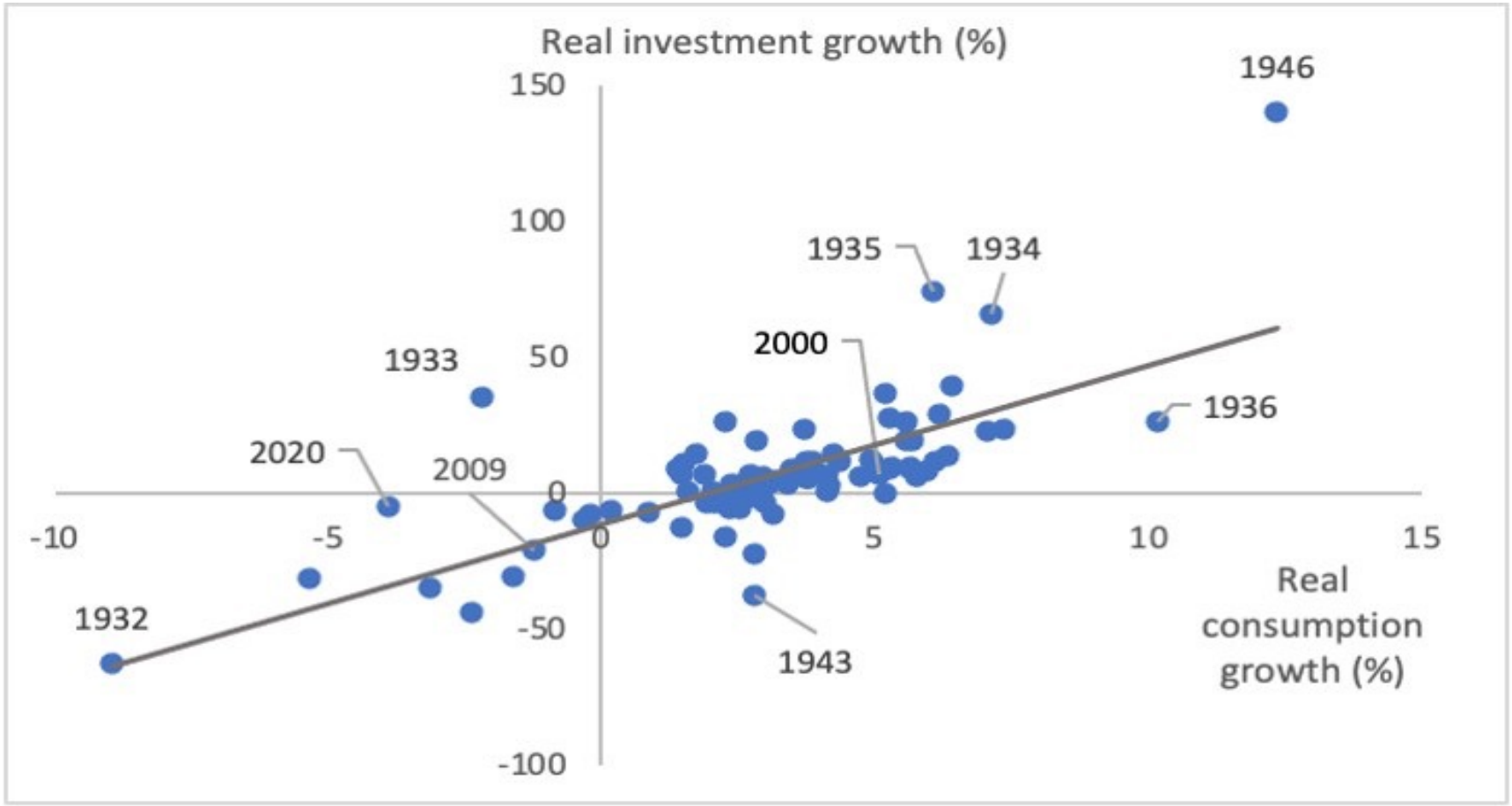
Co-movement

Many aggregate macroeconomic variables grow or contract together during booms and busts, exhibiting a pattern of positive or negative co-movement.

Variables such as real consumption, real investment, and employment move positively (or together) with real GDP – **pro-cyclical**.

Variables such as unemployment move negatively (or opposite) with real GDP – **counter-cyclical.**

Real Consumption Growth Versus Real Investment Growth (1929-2020)



Limited Predictability

Recessions and expansion do *not* follow a repetitive, easily predictable pattern.

As a result, it is impossible to forecast during an expansion when the expansion will end.

Similarly, it is impossible to forecast during a recession when the recession will end.

Persistence

Even though the beginnings and ends of recessions are somewhat unpredictable, economic fluctuations are not random but *persistent*:

- When the economy is going through expansion, it will probably keep growing the following quarter.

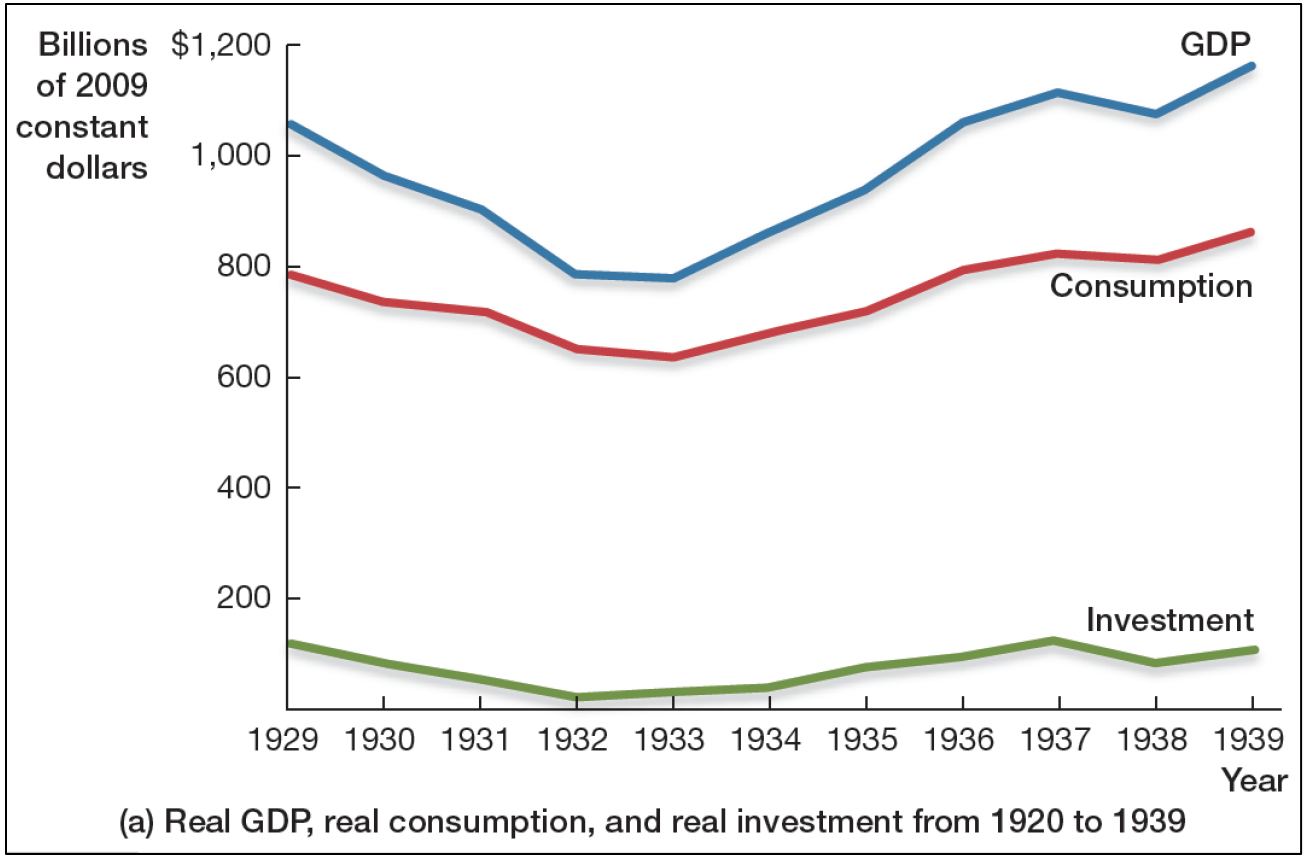
- Likewise, when the economy is contracting, the economy will probably keep contracting the following quarter.

The Great Depression, 1929-1933

The Great Depression of 1929–1933 illustrates the three key properties of economic fluctuations:

1. Co-movement in economic aggregates
2. Limited predictability
   ---most economists, including the preeminent forecaster Irving Fisher, never anticipated the depression
3. Persistence in the rate of growth
   --- there were four years of negative growth from 1929 to 1933, followed by seven years of positive growth.

The Great Depression, 1929-1933



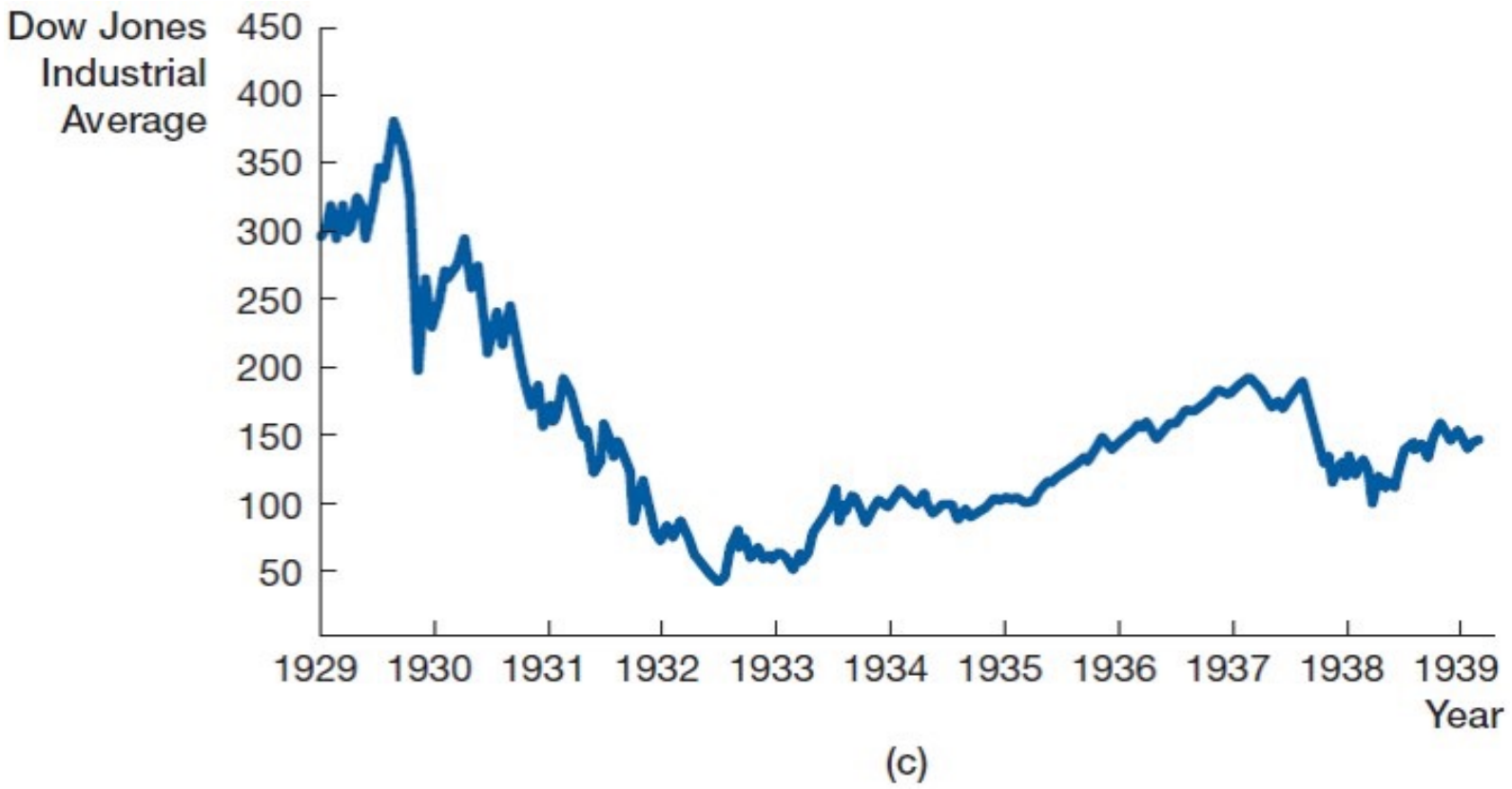
(a) Real GDP, real consumption, and real investment from 1920 to 1939

Four years of negative growth in GDP, followed by seven years of positive growth.

The Great Depression, 1929-1933

(b) Unemployment rate from 1929 to 1939

The Great Depression and Stock prices



Theories of Economic Fluctuations

Question: Why are there economic fluctuations?

Answer: It depends on who you ask.

But there is a significant body of shared knowledge that unexpected shifts to labor demand, called *shocks*, are important.

Labour Demand Shift

At the beginning of a recession, the labour demand curve shifts to the left due to (for example):

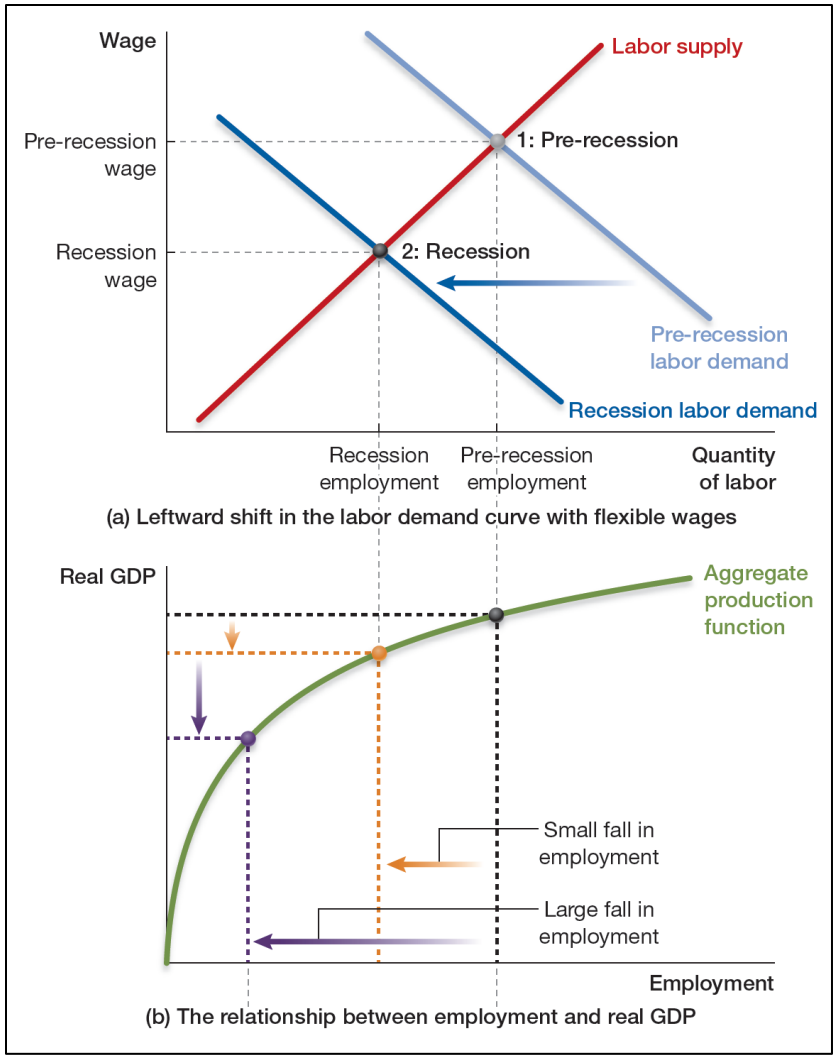
1. A fall in output demand/prices
2. A decrease in labor productivity
3. A rise in input prices

Labour Demand Shift

Labour demand curve shifts left:

- If wages are flexible, the leftward shift in the labor demand curve will lead to a fall in wages and a decrease in the quantity of labor.
- As a result, real GDP will decrease.

Labour Demand Shift under **Flexible Wages**



Labour Market – fall in employment and wage

Aggregate production function – fall in employment generate a fall in real GDP

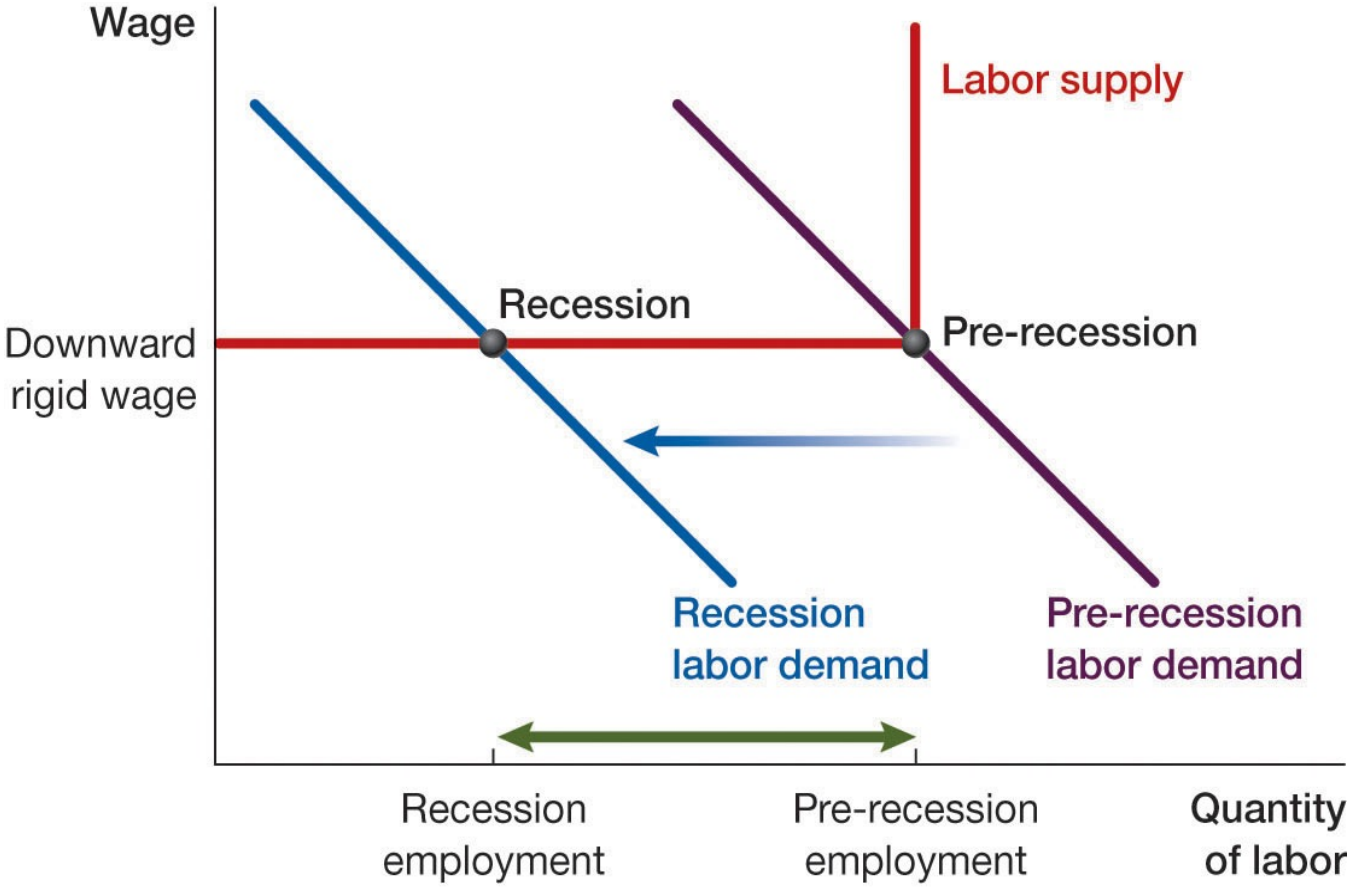
Labour Demand Shift

Labour demand curve shifts left:

- If wages are downward rigid, the leftward shift in the labour demand curve will lead to no change in the wage rate and a larger decrease in the quantity of labour.

- As a result, output will decrease more under downward rigid wages than under flexible wages.

Recession Dynamics of Labor Demand and Employment



Unemployment: gap between quantity of labor supplied and quantity of labor demanded at the *market wage*

Theories of Economic Fluctuations

There are three different schools on the sources of economic fluctuations:

1. **Real business cycle theory** emphasizes changes in productivity and technology
2. **Keynesian theory** focuses on business and consumer expectations of the future.
3. **Financial and monetary theory** looks at changes in prices and interest rates.

Real business cycle theory

Real business cycle theory emphasizes changes in productivity and technology:

- Technological advances and other productivity-enhancing innovation cause expansions.
- An increase in input prices like oil causes recessions.

Note: Finn Kyland and Edward Prescott received a Nobel prize in Economics in 2004 “"for their contributions to the driving forces behind business cycles"

Keynesian Theory

Keynesian theory focuses on changes in expectations of the future:

- **Animal spirits** are the psychological factors that lead to changes in business and consumer mood or sentiment. Animal spirits can lead to decreases in spending (recessions) or increases in spending (expansions).

Keynes' book "The general theory of employment, interest and money" was published in 1936 – deeply influenced by the Great Depression.

Keynesian Theory

- A negative shock can hit the economy and generate pessimism.
- Willingness to spend decreases and is not offset by increased spending in other parts of the economy.
- The initial decrease in spending is amplified by further decreases in other persons' spending due to **multipliers**.
- A self-fulfilling prophecy – the expectations induce actions that leads to the event.

Examples: Stock market decline of October 1929 or September 2008:

- In both cases, a drop in consumer confidence will reduce household willingness to spend.
- Firms will cut back production and lay off employees.
- Those newly unemployed workers will be unable to buy goods and services, leading firms that previously sold goods to those consumers to scale back production even more.
- According to Keynes, each round of layoffs further damages the economy, setting off more waves of layoffs.

Monetary theory

Monetary theory (Nobel Laureate Milton Friedman) — looks at changes in prices and interest rates:

- A decrease in the money supply will cause the price level to fall. A fall in the price level will reduce employment because of *downward wage rigidity*.

- A decrease in the money supply will also cause an increase in the real interest rate. Higher real interest rates will reduce investment by firms.

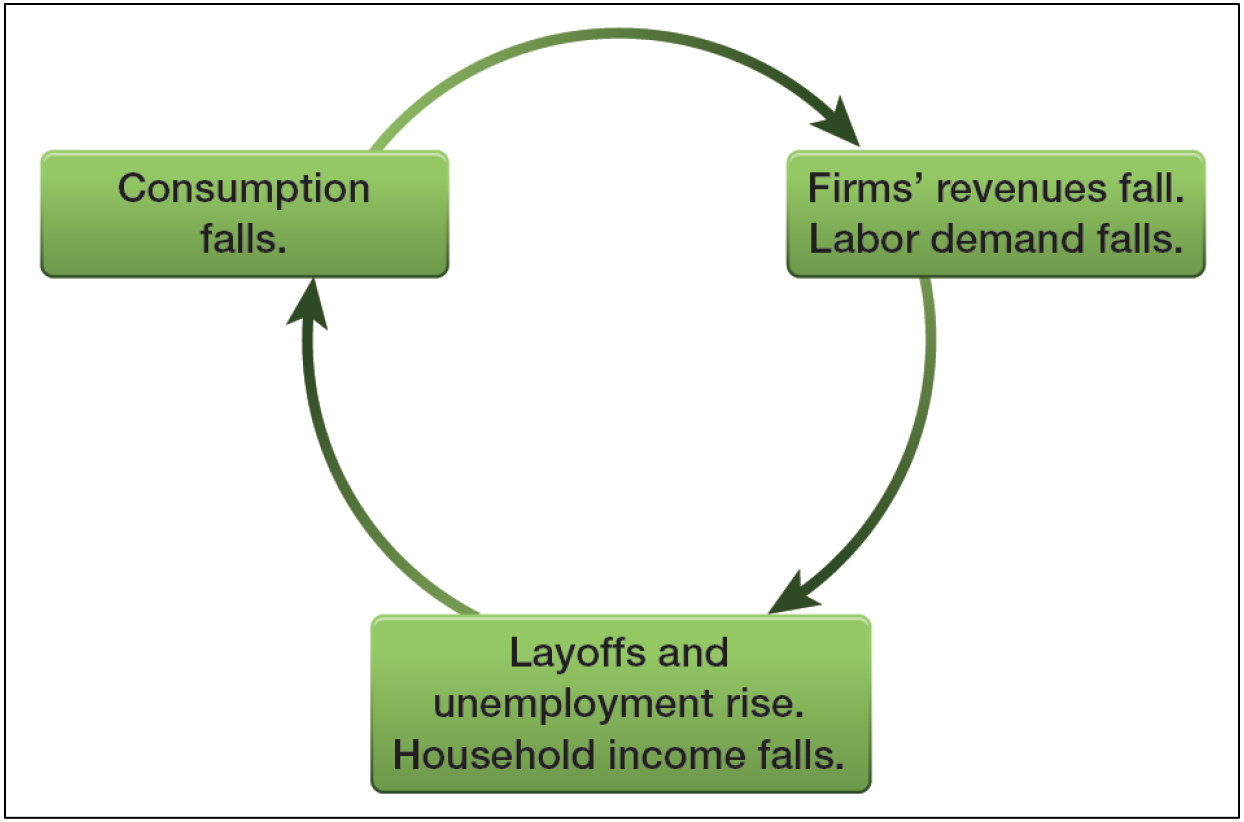
Multipliers

Multipliers

Multipliers can amplify the effects of any economic shock, regardless of its source.

Consider a negative consumption shock.

Multipliers in a contracting economy



Multipliers

By lowering household income, multipliers will shift the labor demand curve further to the left.

As a result, wages and employment will decrease further, to the trough of the business cycle.

Multipliers

In addition, **multipliers** can reduce labor demand further by:

- A fall in asset prices
- A rise in mortgage defaults
- A rise in household and firm bankruptcies

Multipliers

Here is how a shock plays out in the short run:

1. An initial shock shifts the labor demand curve to the left.

2. Downward wage rigidity leads to greater reductions.

3. Multipliers cause the labor demand curve to shift leftward even more.

Multipliers in an Economy with Downward Rigid Wages