
Business Cycles

11-1

Agenda

- What is a Business Cycle?
 - Business Cycle Facts.
-

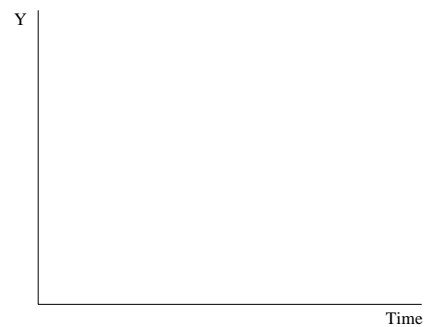
11-2

What Is a Business Cycle?

- Business cycles are the short-run fluctuations in aggregate economic activity around its long-run growth path.
-

11-3

What Is a Business Cycle?



11-4

What Is a Business Cycle?

- Components of a Business Cycle:
 - Peak,
 - Contraction or Recession,
 - Trough, and
 - Recovery and Expansion.

11-5

What Is a Business Cycle?

- Peak:
 - The maximum level that aggregate economic activity reaches.
 - Can only be determined after the fact.
 - Generally, $Y > Y_n$.

11-6

What Is a Business Cycle?

- Contractions, Recessions, or Hard Landing:
 - Popular definition:
 - 2 or more consecutive quarters of declining real GDP.
 - Official definition:
 - A period of significant decline in total output, income, employment, and trade,
 - usually lasting from 6 months to a year, and
 - marked by widespread contractions in many sectors of the economy.

11-7

What Is a Business Cycle?

- Growth Recession or Soft Landing:
 - Official definition:
 - A recurring period of slow growth in total output, income, employment, and trade,
 - usually lasting a year or more.
 - Actual growth rate is less than natural growth rate, resulting in a rising unemployment rate.

11-8

What Is a Business Cycle?

- Depression:
 - A recession that is major in both scale and duration.

11-9

What Is a Business Cycle?

- Trough:
 - The minimum level that aggregate economic activity reaches.
 - Can only be determined after the fact.
 - Generally $Y < Y_n$.

11-10

What Is a Business Cycle?

- Expansion:
 - Official definition:
 - A period of significant increase in total output, income, employment, and trade,
 - usually lasting 6 months or more, and
 - marked by widespread expansion in many sectors of the economy.

11-11

What Is a Business Cycle?

- Boom:
 - An extended economic expansion where aggregate economic activity is high and rising.
 - Y is well above Y_n .

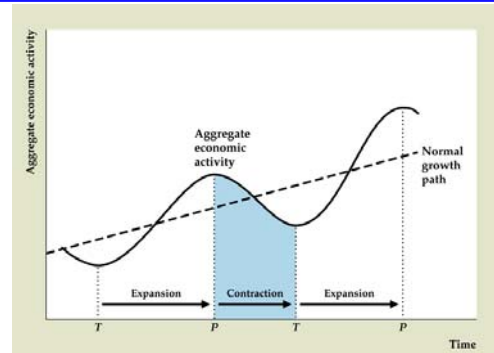
11-12

What Is a Business Cycle?

- Expansions and contractions:
 - The sequence from one peak to the next, or from one trough to the next, is a **business cycle**.
 - Peaks and troughs are called **turning points**.
 - Turning points are officially designated by the NBER Business Cycle Dating (BCD) Committee.
 - Typically wait 9 – 24 months after the fact before deciding on turning points.

11-13

What is a Business Cycle?



11-14

What Is a Business Cycle?

- Main features of a business cycle:
 - Pervasive in nature,
 - Recurrent but not periodic,
 - Persistent, and
 - Each cycle differs in length and severity.
 - Expansions are longer than recessions.

11-15

What Is a Business Cycle?

- Business cycle are **pervasive in nature**.
 - Business cycles are fluctuations in **aggregate economic activity**, not fluctuations in a specific economic variable.
 - Significant changes in total output, income, employment, and trade.

11-16

What Is a Business Cycle?

- Business cycle are **recurrent**:
 - The pattern of *contraction–trough–expansion–peak* occurs over and over again.
- Business cycles are **not periodic**:
 - Business cycles do not occur at regular, predictable intervals.

11-17

What Is a Business Cycle?

- Business cycles are **persistent**:
 - Declines in aggregate economic activity are followed by further declines; growth in aggregate economic activity is followed by more growth.
 - Because of persistence, forecasting turning points is quite important.

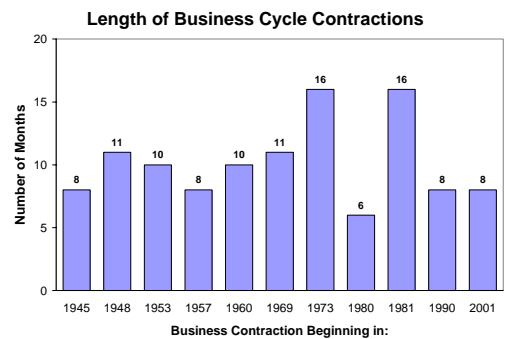
11-18

What Is a Business Cycle?

- Business cycles differ in **length** and **severity**:
 - Recessions are fairly short; expansions are fairly long.

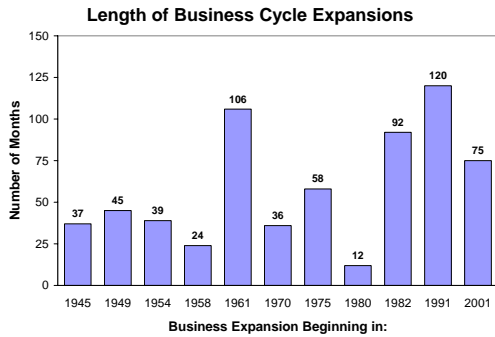
11-19

What is a Business Cycle?



11-20

What is a Business Cycle?



11-21

What Is a Business Cycle?

- Main points about business cycles:
 - Business cycles are *pervasive in nature*, i.e., they are fluctuations in *aggregate economic activity*, not a specific economic variable.
 - Business cycle are *recurrent*, but not *periodic*.
 - Business cycles are *persistent*.
 - Business cycles differ in *length* and *severity*.

11-22

Business Cycle Turning Points

Trough	Expansion (months from trough to peak)	Peak	Contraction (months from peak to next trough)
Dec. 1954	30	June 1957	18
Dec. 1958	23	Oct. 1960	8
June 1961	46 (2nd War)	Apr. 1969	32
Dec. 1967	18	June 1969	18
Dec. 1970	34	Oct. 1973	63
Mar. 1975	36	Mar. 1982	38
May 1980	22	Mar. 1982	13
Apr. 1980	27	July 1980	10
May 1981	20	Jan. 1982	17
June 1982	18	Dec. 1982	18
June 1982	24	June 1989	18
Dec. 1990	21	Sept. 1990	23
Aug. 1994	13	May 1997	13
June 1998	16	Jan. 1999	24
Jan. 1999	12	Jan. 1999	23
Dec. 1994	44 (WW)	Aug. 1998	7
Mar. 1999	10	Jan. 2000	18
July 1981	22	May 1983	14
July 1984	27	Oct. 1986	13
Nov. 1927	21	Aug. 1929	43 (Depression)
Mar. 1933	30	May 1937	13 (Depression)
June 1938	62 (WW)	Feb. 1945	4
Oct. 1945	17	Nov. 1948	11
Oct. 1949	43 (Korean War)	July 1953	30
May 1954	39	Aug. 1957	8
Apr. 1958	24	July 1960	10
Feb. 1961	106 (Vietnam War)	Dec. 1969	11
Mar. 1969	16	Mar. 1970	16
Mar. 1970	26	Jan. 1980	6
July 1980	12	July 1981	16
Nov. 1982	32	July 1990	8
Mar. 1991	120	Mar. 2001	8
Nov. 2001			

Source: NBER Web Site: www.nber.org/pubs/html

11-23

Business Cycle Facts

- The cyclical behavior of economic variables:
 - Economic variables show *co-movement*.
 - They have regular and predictable patterns of behavior over the course of the business cycle.
 - Macroeconomic variables can be classified by *direction*, *timing*, and *volatility* of their movement with aggregate economic activity.

11-24

Business Cycle Facts

- The cyclical behavior of economic variables:

- **Direction:**

- What is the **direction** of a variable's movement relative to aggregate economic activity?
 - **Procyclical:** moves in the same direction.
 - **Countercyclical:** moves in the opposite direction.
 - **Acyclical:** moves with no clear pattern.

11-25

Business Cycle Facts

- The cyclical behavior of economic variables:

- **Timing:**

- What is the **timing** of a variable's movements relative to aggregate economic activity?
 - **Leading:** moves in advance.
 - **Coincident:** moves at the same time.
 - **Lagging:** moves afterwards.

11-26

Business Cycle Facts

- The cyclical behavior of economic variables:

- **Leading indicators** have been used to **predict** peaks and troughs of the business cycle.

- Generally, several leading variables are combined into an index of leading economic indicators.
- A decline in the index for 3 to 6 months warns of a recession.

11-27

Business Cycle Facts

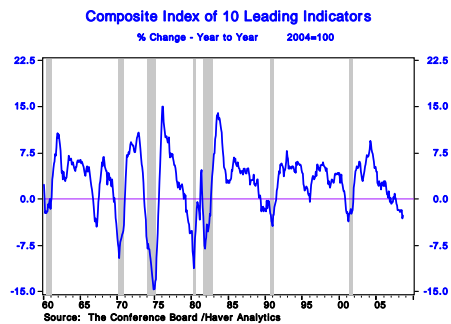
- The cyclical behavior of economic variables:

- Leading indicators have not been that useful in predicting recessions.

- Although the data are available promptly, they are often revised.
 - Sometimes signals change without warning.
- A number of false warnings have been given.
- Provides little information about the timing or severity of a recession.

11-28

Business Cycle Facts



11-29

Business Cycle Facts

- The cyclical behavior of economic variables:
 - Leading indicators suffer from 2 other issues:
 - Structural changes in the economy necessitate periodic revision of the index.
 - Recessions are often caused by sudden shocks to the economy that leading indicators will not pick up.

11-30

Business Cycle Facts

- The cyclical behavior of key macro variables:
 - **Procyclical:** moves in the same direction as Y.
 - **Leading:** residential investment, inventory investment, average labor productivity, money growth, stock prices.
 - **Coincident:** industrial production, consumption, business fixed investment, employment.
 - **Lagging:** inflation, nominal interest rates.
 - **Timing not designated:** government purchases, real wages.

11-31

Business Cycle Facts

- The cyclical behavior of key macro variables:
 - **Countercyclical:** moves in the opposite direction as Y.
 - **Timing is unclassified:** unemployment, the unemployment rate.
 - **Acyclical:** moves in no clear pattern with Y.
 - **Timing is not designated:** real interest rates.

11-32

Cyclical Behavior of Key Macro Variables

The Cyclical Behavior of Key Macroeconomic Variables (The Business Cycle Facts)

Variable	Direction	Timing
Production		
Industrial production	Pro-cyclical	Coincident
Durable goods industries are more volatile than nondurable goods and services		
Expenditure		
Consumption	Pro-cyclical	Coincident
Business fixed investment	Pro-cyclical	Coincident
Residential investment	Pro-cyclical	Leading
Inventory investment	Pro-cyclical	Leading
Government purchases	Pro-cyclical	— ¹
Investment is more volatile than consumption		
Labor Market Variables		
Employment	Pro-cyclical	Coincident
Unemployment	Countercyclical	Lagged ²
Average labor productivity	Pro-cyclical	Leading ³
Real wage	Pro-cyclical	— ⁴
Money Supply and Inflation		
Money supply	Pro-cyclical	Leading
Inflation	Pro-cyclical	Lagging
Financial Variables		
Stock prices	Pro-cyclical	Leading
Nominal interest rates	Pro-cyclical	Lagging
Real interest rates	Acyclical	— ⁵

¹Timing is not designated by The Conference Board.
²Unemployment is "classified" by The Conference Board.
Source: Business Cycle Indicators, April 2003. Industrial production series 47 (Industrial production), consumption series 17 (Manufacturing and trade sales, constant dollar), business fixed investment series 88 (Gross private nonresidential fixed investment), residential investment series 29 (New private housing units, started), inventory investment series 33 (Change in business inventories, constant dollar), employment series 41 (Employment in nonagricultural pursuits), unemployment series 42 (Unemployment), and money supply series 108 (Money supply M2, constant dollar). Inflation series 120 (CPI for services, change over an month, year) stock prices series 18 (Index of stock prices, 1926-2000), nominal interest rates series 178 (Federal funds rate), series 174 (discount rate on new 91-day Treasury bills), series 109 (average prime rate charged by banks).

11-33

Business Cycle Facts

- The cyclical behavior of key macro variables:

➤ Volatility:

- How *volatile* is a variable relative to the volatility of aggregate economic activity?

– **High volatility:** Durable goods production and spending, investment, inventory investment, net exports.

– **Low volatility:** Nondurable goods and services production and spending, consumption.

11-34

Business Cycle Facts

- International aspects of the business cycle:

- The cyclical behavior of key economic variables in other countries is similar to that in the US.
- Major industrial countries frequently have recessions and expansions at about the same time.
 - In addition, each economy faces small fluctuations that aren't shared with other countries.

11-35