

EE312 Chapter 2

Introduction to Business Cycle

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What is a business cycle?

Burns and Mitchell (Measuring Business Cycles, 1946) makes five main points about business cycles.

- 1 Business cycles are **fluctuations of aggregate economic activity**, not a specific variable, about **its trend**
- 2 There are **expansions** and **contractions**; **phase of cycle variations**
- 3 The business cycle is **recurrent**, but **not periodic**
- 4 The business cycle is **persistent**
- 5 Economic variables show **comovement** – they have regular and predictable patterns of behaviour over the course of the business cycle

First: Fluctuation and Trend

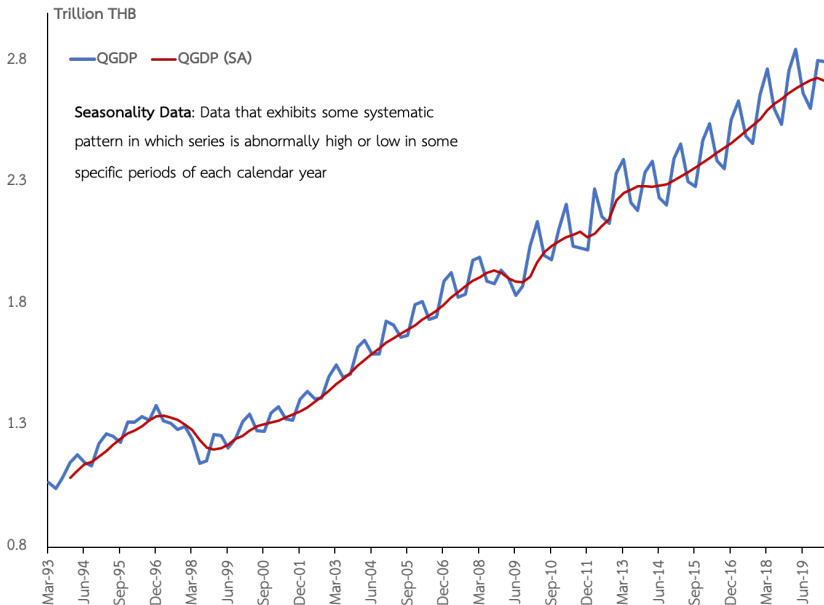
Business cycles are **fluctuations of aggregate economic activity**, not a specific variable, about **its trend**

- Most aggregate variables are **time series**; data value can be observed at each point of time
- One common approach is to characterise the behaviour of the time series data is to think about the **decomposition**.

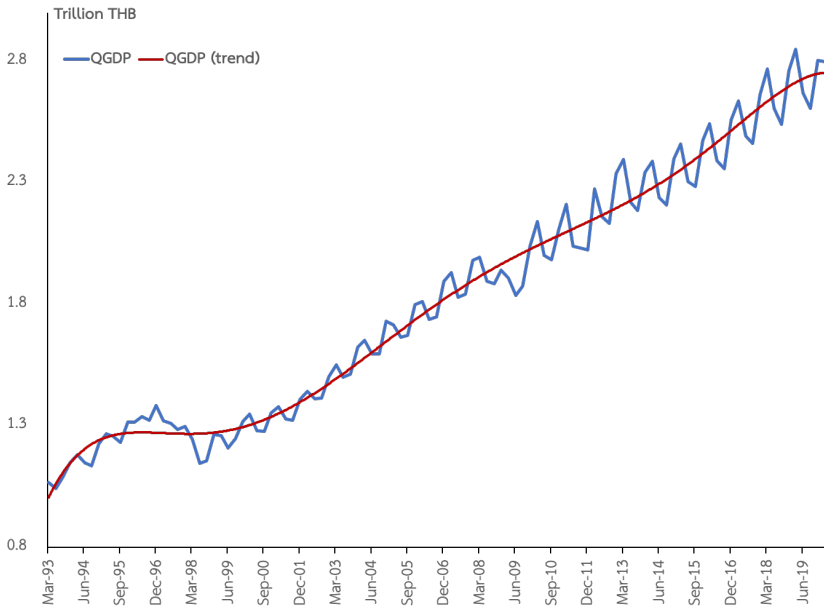
$$X = \textit{Trend} + \textit{Cycle} + \textit{Seasonal}$$

- Example: $GDP = \textit{trendGDP} + \textit{cycleGDP} + \textit{seasonalGDP}$

Thai quarterly GDP (seasonally adjusted)

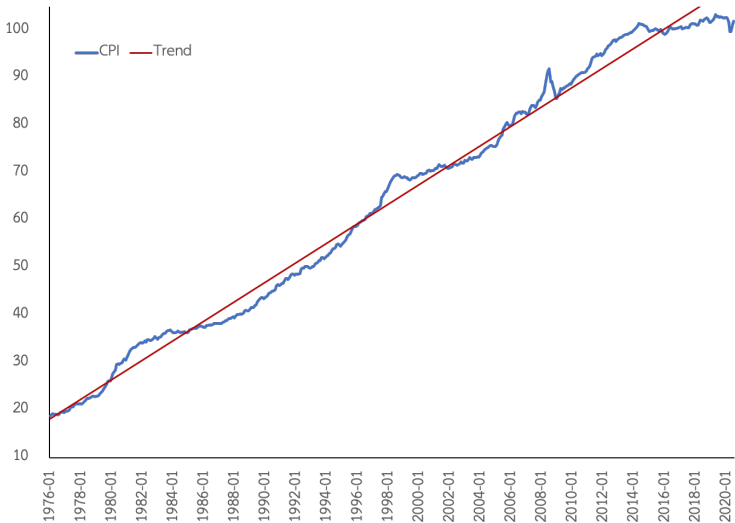


Thai QGDP (trend)



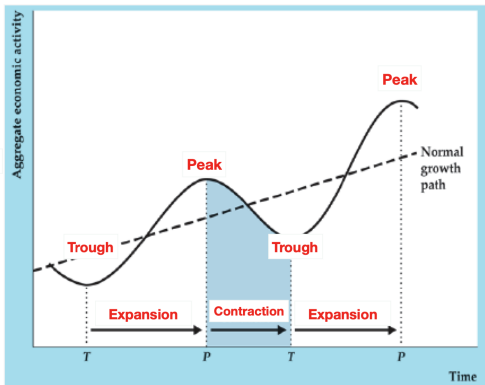
Not only GDP

Business cycles are **fluctuations of aggregate economic activity**, not a specific variable, about **its trend**



Second: Expansions and Contraction

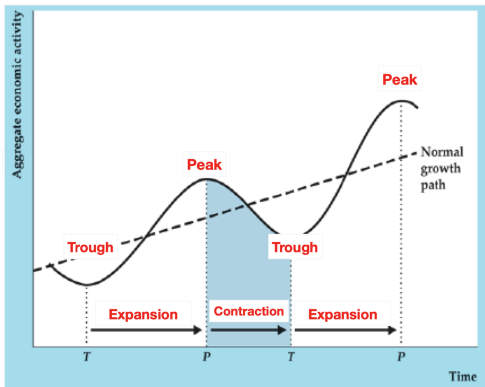
There are **expansions** and **contractions**; **phase of cycle variations**



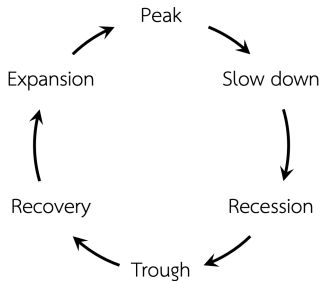
- Phase of business cycle
 - ▶ After a trough, activity increases in an expansion
 - ▶ A particularly severe recession is called a depression
 - ▶ The sequence from one peak to the next, or from one trough to the next is a business cycle
 - ▶ Peaks and troughs are turning points Expansion and Contraction

Third: Recurrent but not periodic

The business cycle is **recurrent**, but **not periodic**



- Recurrent means the pattern of contraction-trough-expansion-peak occurs again and again



- Not being periodic means it does not occur at regular, predictable intervals

Fourth: Persistent

The business cycle is **persistent**

- Persistent: Decline are followed by further declines; growth is followed by more growth
- Because of persistence, forecasting turning point is important

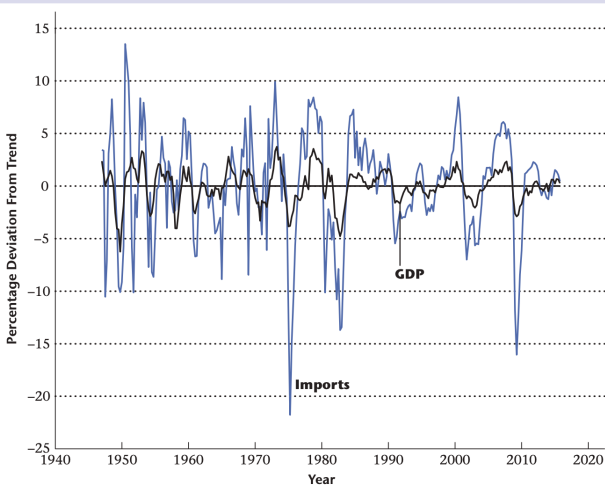
Trough	Expansion (months from trough to peak)	Peak	Contraction (months from peak to next trough)
Dec-1914	44 (WWI)	Aug-1918	7
Mar-1919	10	Jan-1920	18
Jul-1921	22	May-1923	14
Jul-1924	27	Oct-1926	13
Nov-1927	21	Aug-1929	43 (Depression)
Mar-1933	50	May-1937	13 (Depression)
Jun-1938	80 (WWII)	Feb-1945	8
Oct-1945	37	Nov-1948	11
Oct-1949	45 (Korean War)	Jul-1953	10
May-1954	39	Aug-1957	8
Apr-1958	24	Apr-1960	10
Feb-1961	106 (Vietnam War)	Dec-1969	11
Nov-1970	36	Nov-1973	16
Mar-1975	58	Jan-1980	6
Jul-1980	12	Jul-1981	16
Nov-1982	92	Jul-1990	8
Mar-1991	120	Mar-2001	8
Nov-2001	73	Dec-2007	18

Source: NBER

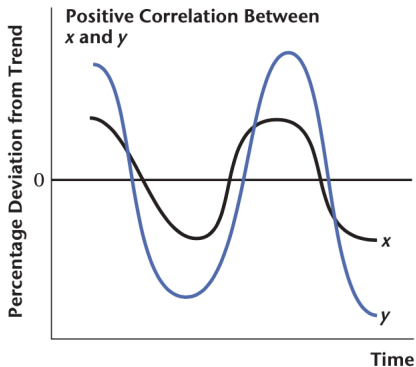
Fifth: Comovement

Economic variables show **comovement** – they have regular and predictable patterns of behaviour over the course of the business cycle

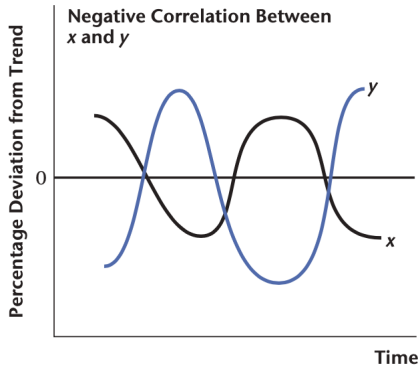
Source: Data from U.S. Department of Commerce, Bureau of Economic Analysis, © Stephen D. Williamson.



Cyclical Behavior



(a)

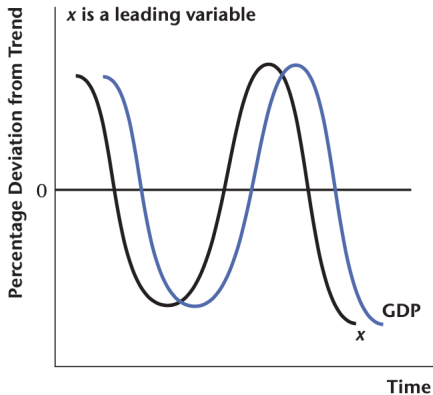


(b)

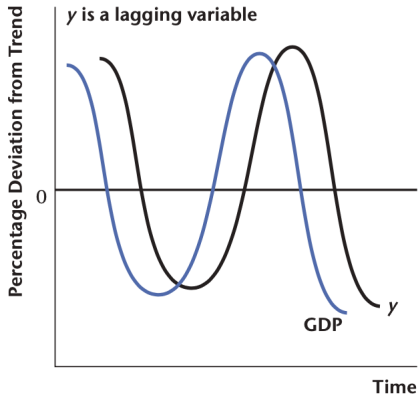
■ Direction : co-movement

- ▶ A pro-cyclical variable if $\text{corr}(\text{GDP}, x) > 0$.
- ▶ A counter-cyclical variable if $\text{corr}(\text{GDP}, x) < 0$
- ▶ Acyclical variable if $\text{corr}(\text{GDP}, x) = 0$

Timing



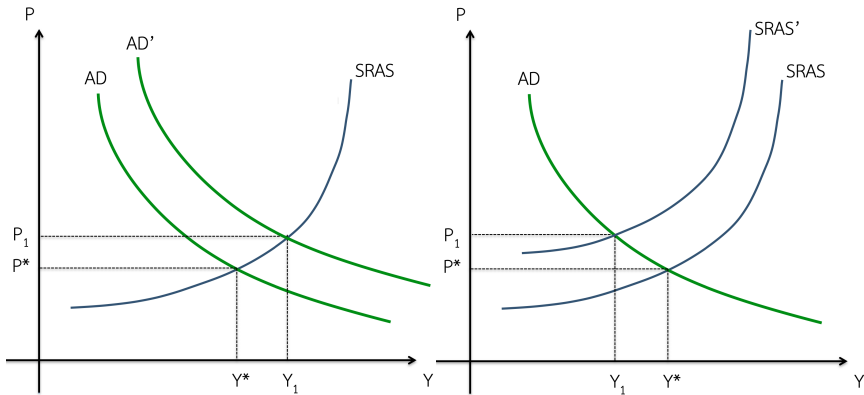
(a)



(b)

- Timing = timing of variable's movements relative to real GDP:
 - ▶ Leading (in advance)
 - ▶ Lagging (after)
 - ▶ Coincident (at the same time)

Business cycle analysis: Overview



Business cycle analysis

■ Short-run analysis

- ▶ Comparative static : before and after
- ▶ Shock-propagating mechanism or channel of transmission of shocks

■ Medium-run analysis

- ▶ Provide some explanation about dynamic adjustments
- ▶ The underlying mechanism in which economy reverts to the potential situation
- ▶ What causes it so long for self-adjustment process to kick in

■ Next chapter: more detailed discussion on AD-AS

- ▶ Review IS-LM, AD-AS, production function