

ECON 222A

Macroeconomic Theory I

Chapter 8: Business Cycles

April 1st 2011

A Tale of Two Depressions

- Economic and financial indicators comparing the Great Recession to the Great Depression by Barry Eichengreen and Kevin O'Rourke (2009). ([here](#))

The business cycle and macroeconomists

Ben Bernanke (2004):

- Celebrated the Great Moderation in economic performance which he attributed to improved policy making.

Robert E. Lucas Jr. (2003)

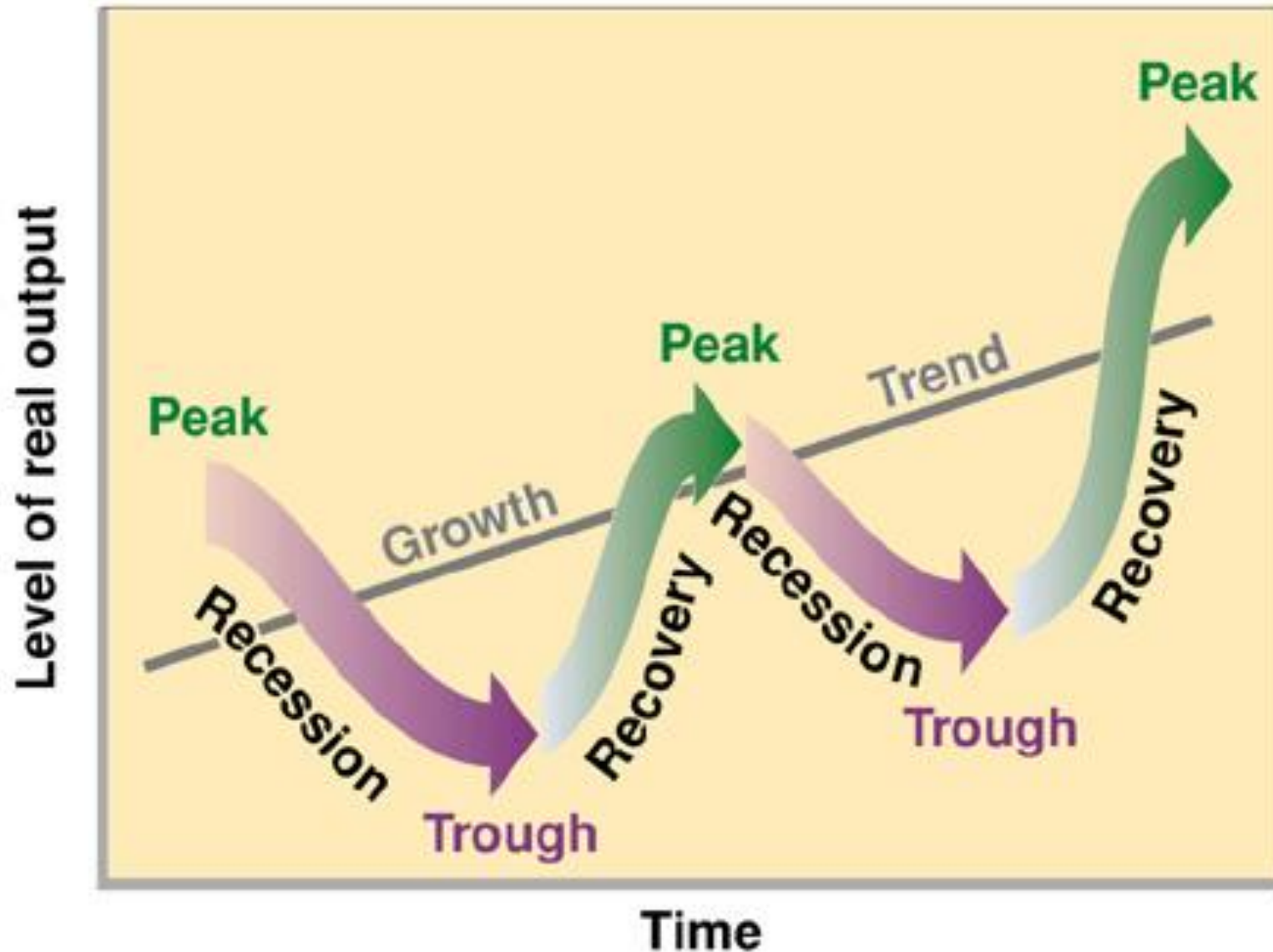
- *“Central problem of depression-prevention has been solved.”*

Business Cycle Theories

Two major questions:

- 1) What causes business cycles?
- 2) How should policy-makers respond?

An illustration of the business cycle



Defining the Business Cycle

1. Fluctuations of “**aggregate economic activity**” around a normal growth path.

2. Expansions and contractions

Contraction (recession or depression): time when aggregate economic activity is falling.

Trough: end of contraction

Expansion (boom): time when aggregate economic activity is growing.

Peak: end of expansion

Defining the Business Cycle

3. Co-movement

Prices, productivity, investment, and unemployment have regular patterns of behaviour.

4. Recurrent but not periodic

It does not occur at regular, predictable intervals and does not last for fixed, predetermined length of time.

5. Persistence

Once an expansion or contraction begins it tends to continue for a period of time.

Business Cycles

- Costs of business cycles: recessions can be very costly to those becoming unemployed.
- Potentially they could have permanent effects on overall living standards (compound growth).

The Canadian Business Cycle

The Pre-world War I Period:

Recessions were common. (1873-1879)

The Great Depression and WWII:

Great Depression: worst economic contraction

WWII: wartime production increases output

Post-World War II:

- Big recession in 1973: OPEC oil shock
- Recessions in early 1980s & 1990s
- Great Recession (2007-2010)

Have Business Cycles Become Less Severe?

“Until recently, macroeconomists believed that business cycles have generally become less severe. Obviously, no recession in Canada since World War II can begin to rival the severity of the Great Depression.”

Are Canadian Business Cycles Actually Made in Canada?

A study of business cycles for the G7 countries shows that a significant component of the business cycle **does seem to be made in Canada**. The role of the world business cycle appears to be smaller.

Business Cycle Facts

Two important characteristics of the cyclical behaviour:

- the **direction** in which a macroeconomic variable moves relative to the direction of aggregate economic activity
- the **timing of the variable's turning points** relative to the turning points of the business cycle.

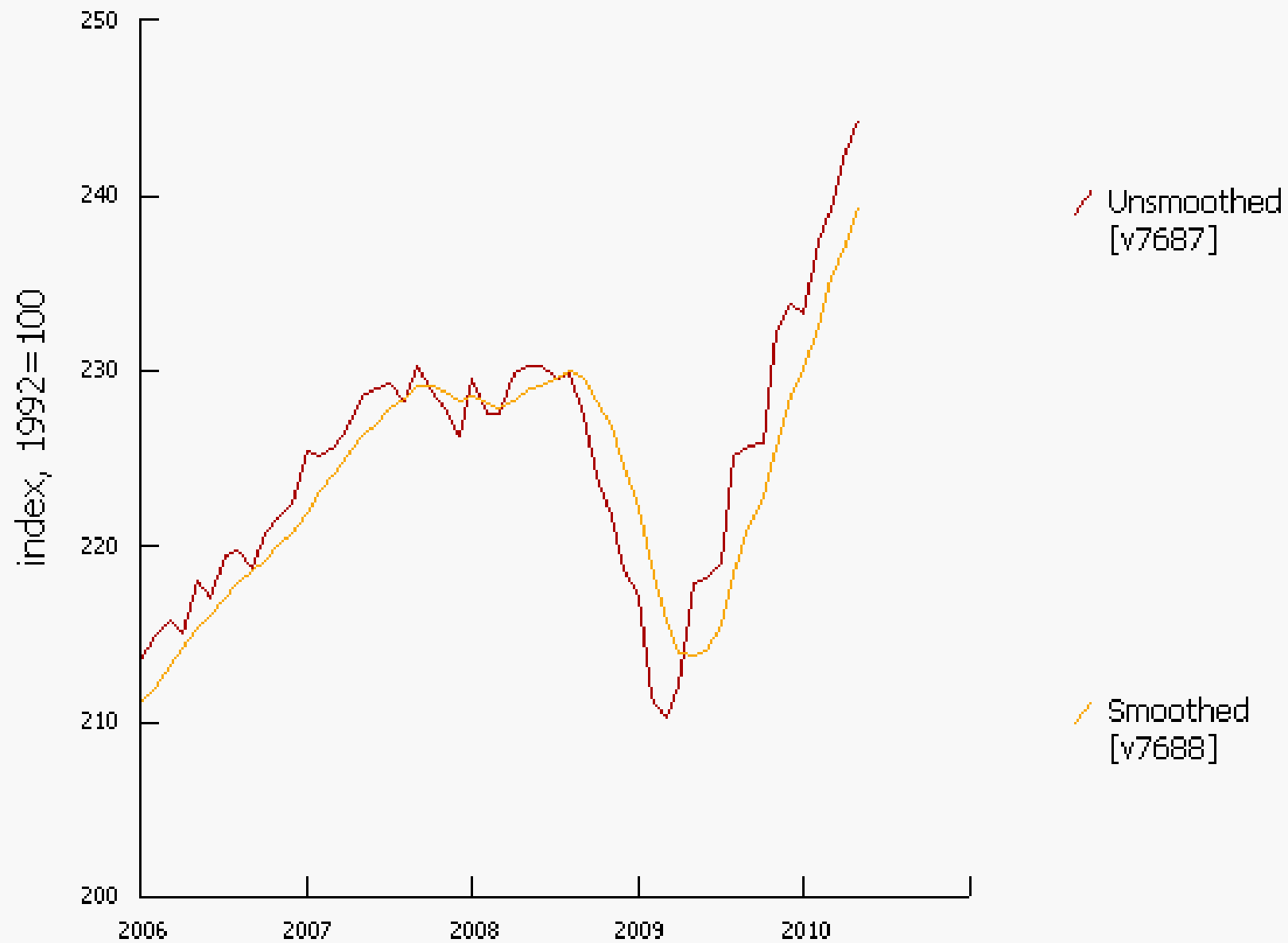
Direction

- A **procyclical** variable moves in the same direction as aggregate economic activity.
 - ↑ in expansion
 - ↓ in contraction
- A **countercyclical** variable moves oppositely to aggregate economic activity.
 - ↓ in expansion
 - ↑ in contraction
- An **acyclical** variable does not display a clear pattern over the business cycle.

Timing

- A **leading** variable's turning points occur before those of the business cycle.
- A **coincident** variable's turning points occur around the same time as those of the business cycle.
- A **lagging** variable's turning points occur later than those of the business cycle.

Business leading indicators for Canada



Canada; Composite index of 10 indicators

Leading indicators index for the United States

Aruoba-Diebold-Scotti Business Conditions
Index

The Cyclical Behaviour of Key Macroeconomic Variables

VARIABLE	DIRECTION	TIMING
Industrial production	Procyclical	Coincident
Consumption	Procyclical	Coincident
Business fixed investment	Procyclical	Coincident
Inventory investment	Procyclical	Leading
Imports	Procyclical	Coincident
Exports	-	-

The Cyclical Behaviour of Key Macroeconomic Variables

VARIABLE	DIRECTION	TIMING
Employment	Procyclical	Coincident
Unemployment	Countercyclical	Coincident
Av. labour productivity	Procyclical	Leading
Real wage	Acyclical	-
Money growth	Procyclical	Leading
Inflation	Procyclical	Lagging
Stock prices	Procyclical	Leading
Nominal interest rates	Procyclical	Lagging
Real interest rates	Acyclical	-

FIGURE 8.4

CYCLICAL BEHAVIOUR OF INDUSTRIAL PRODUCTION

Industrial production, an aggregate of production in all industries, is procyclical and coincident with the business cycle. The peaks and troughs of the business cycle are shown by the vertical lines *P* and *T*. The shaded areas represent recessions.

Source: Monthly industrial production, seasonally adjusted: Adapted from Statistics Canada CANSIM II series v329828 and v2044343.

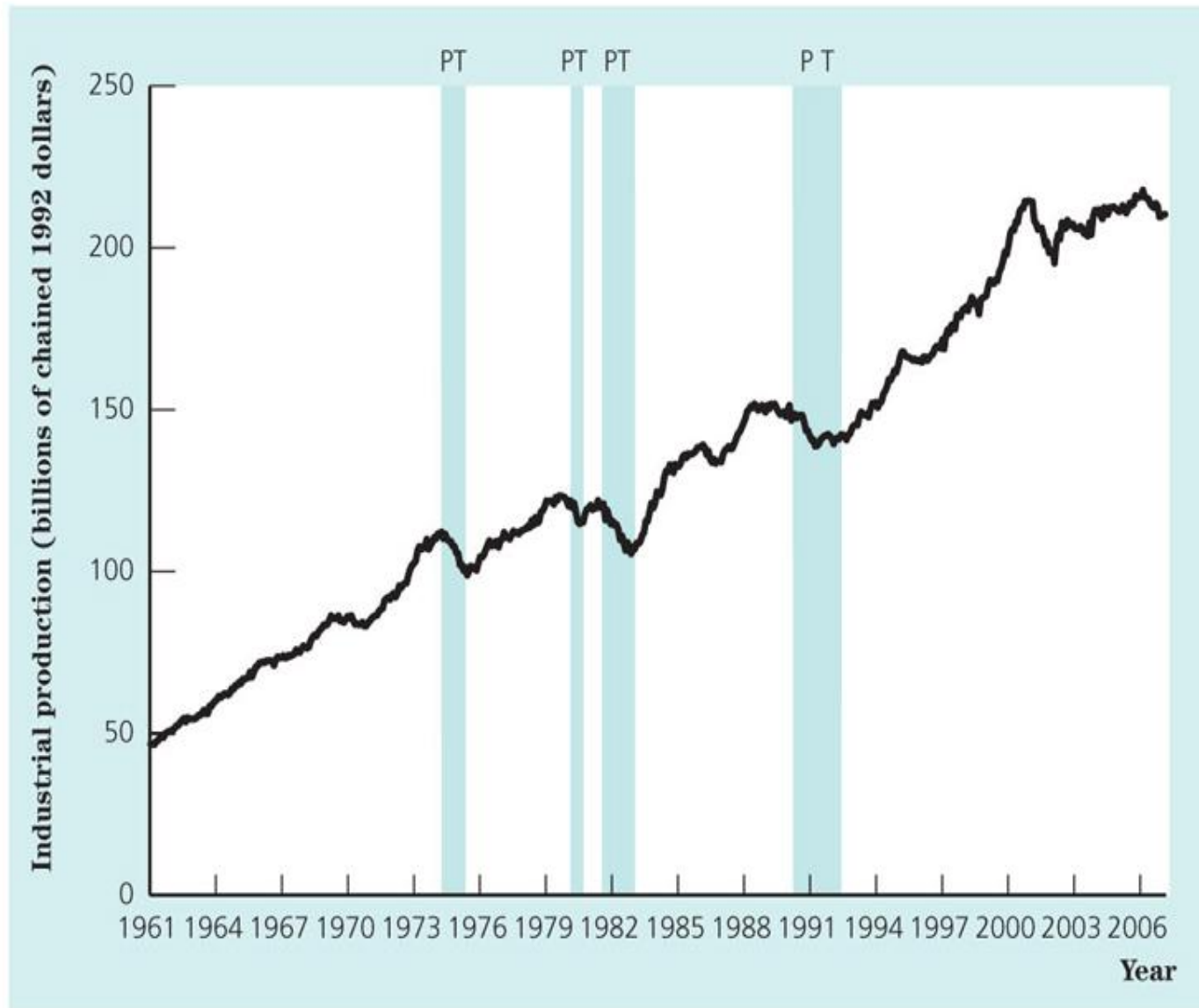


FIGURE 8.5

**CYCLICAL BEHAVIOUR OF
CONSUMPTION AND
INVESTMENT**

Both consumption and investment are procyclical. However, investment is more sensitive than consumption to the business cycle, reflecting the fact that durable goods are a larger part of investment spending than they are of consumption spending.

Source: Consumption and business fixed investment, real, quarterly, and seasonally adjusted: Adapted from Statistics Canada CANSIM II series v1992057 and v1992052.

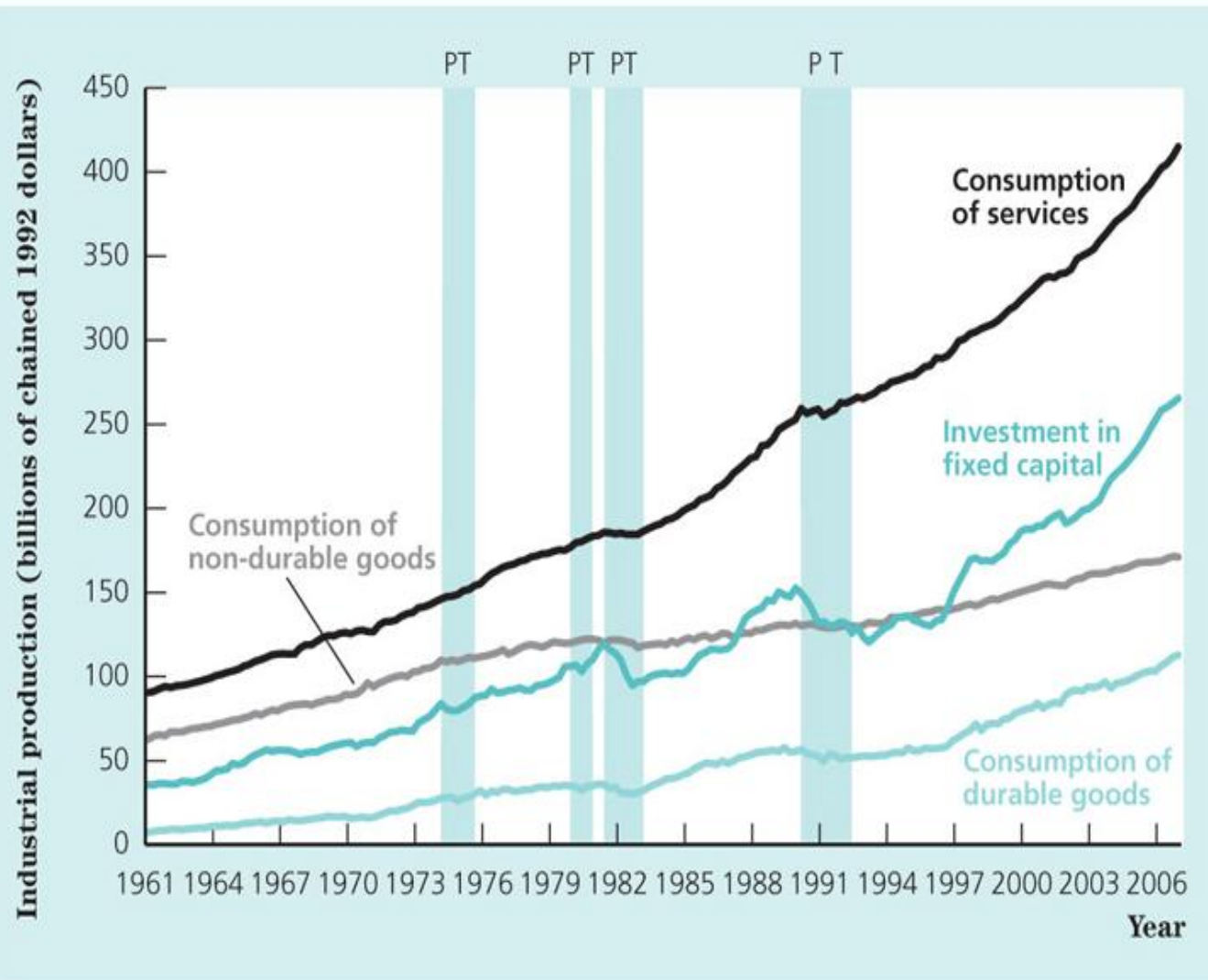


FIGURE 8.6

**CYCLICAL BEHAVIOUR OF
CHANGES IN BUSINESS
INVENTORIES**

Inventory investment, or changes in business inventories, is procyclical and leading but also extremely volatile. For example, between 1992 and 2006, inventory investment fluctuated sharply despite the fact that the economy was continually in expansion.

Source: Real, quarterly inventory investment, seasonally adjusted:
Adapted from Statistics Canada,
CANSIM II series v1992057.

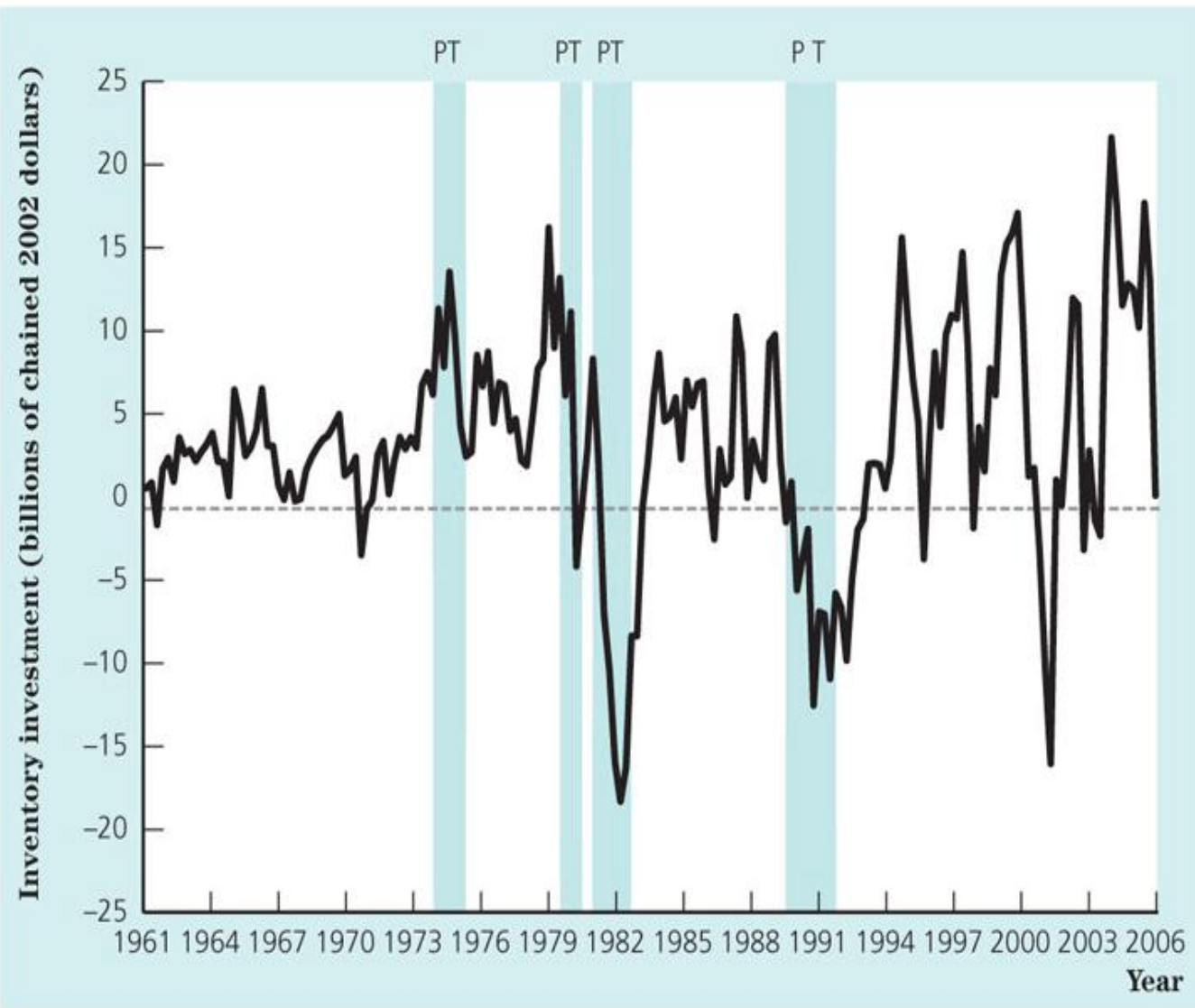


FIGURE 8.7

**CYCLICAL BEHAVIOUR OF
EXPORTS AND IMPORTS**

Expenditures on imports tend to be coincident with the business cycle. Expenditures on exports are reflective of foreign rather than Canadian business cycles.

Source: Real quarterly exports and imports, seasonally adjusted:
Adapted from Statistics Canada,
CANSIM II series v1992060 and
v1992063.

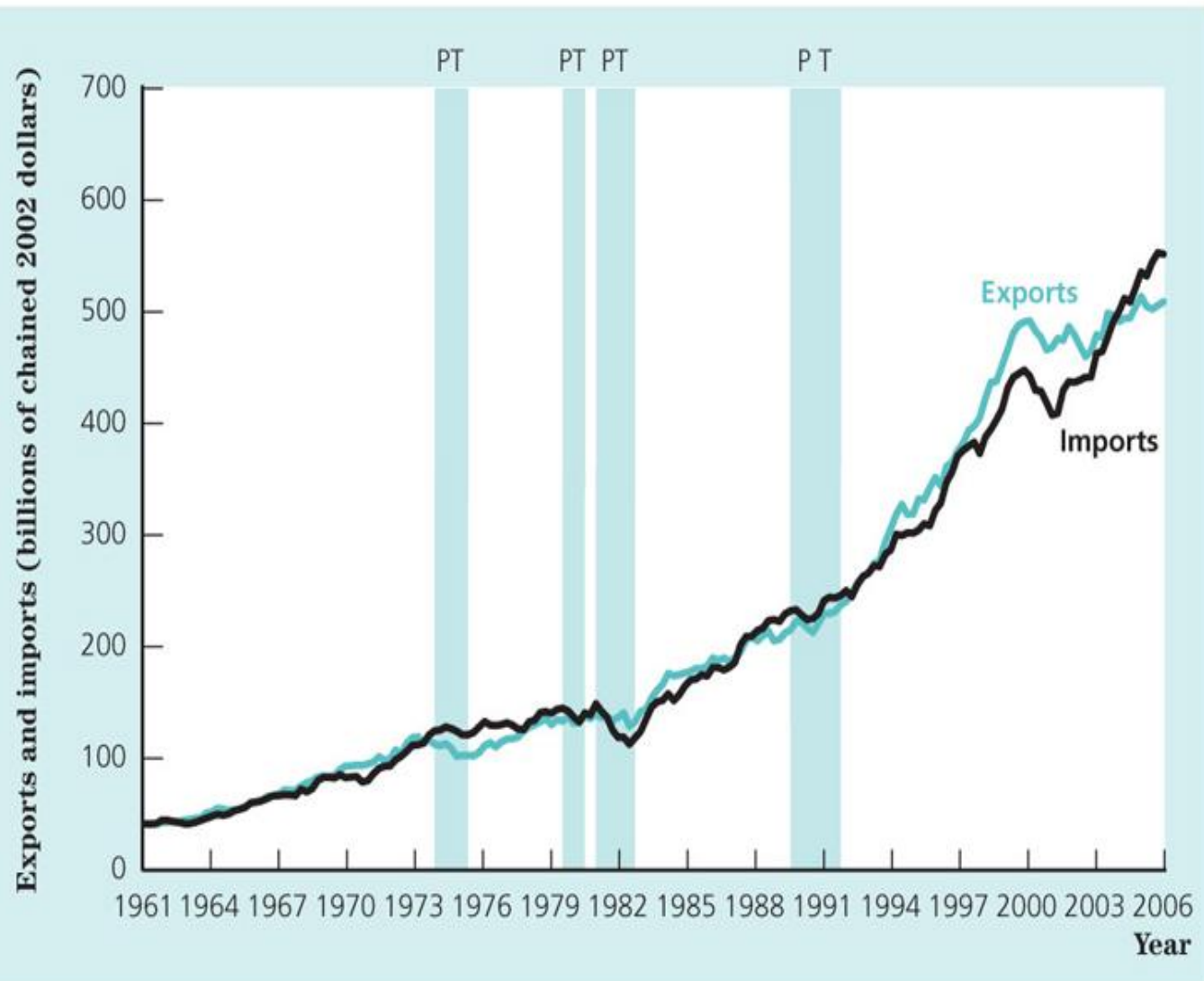


FIGURE 8.8

**CYCLICAL BEHAVIOUR OF
EMPLOYMENT**

Employment is procyclical and
coincident with the business
cycle.

Source: Total employment, monthly,
seasonally adjusted. 1966–1975:
*Canadian Economic Observer,
Statistical Summary*; 1976–2006:
Statistics Canada CANSIM II
database, series v2062811.

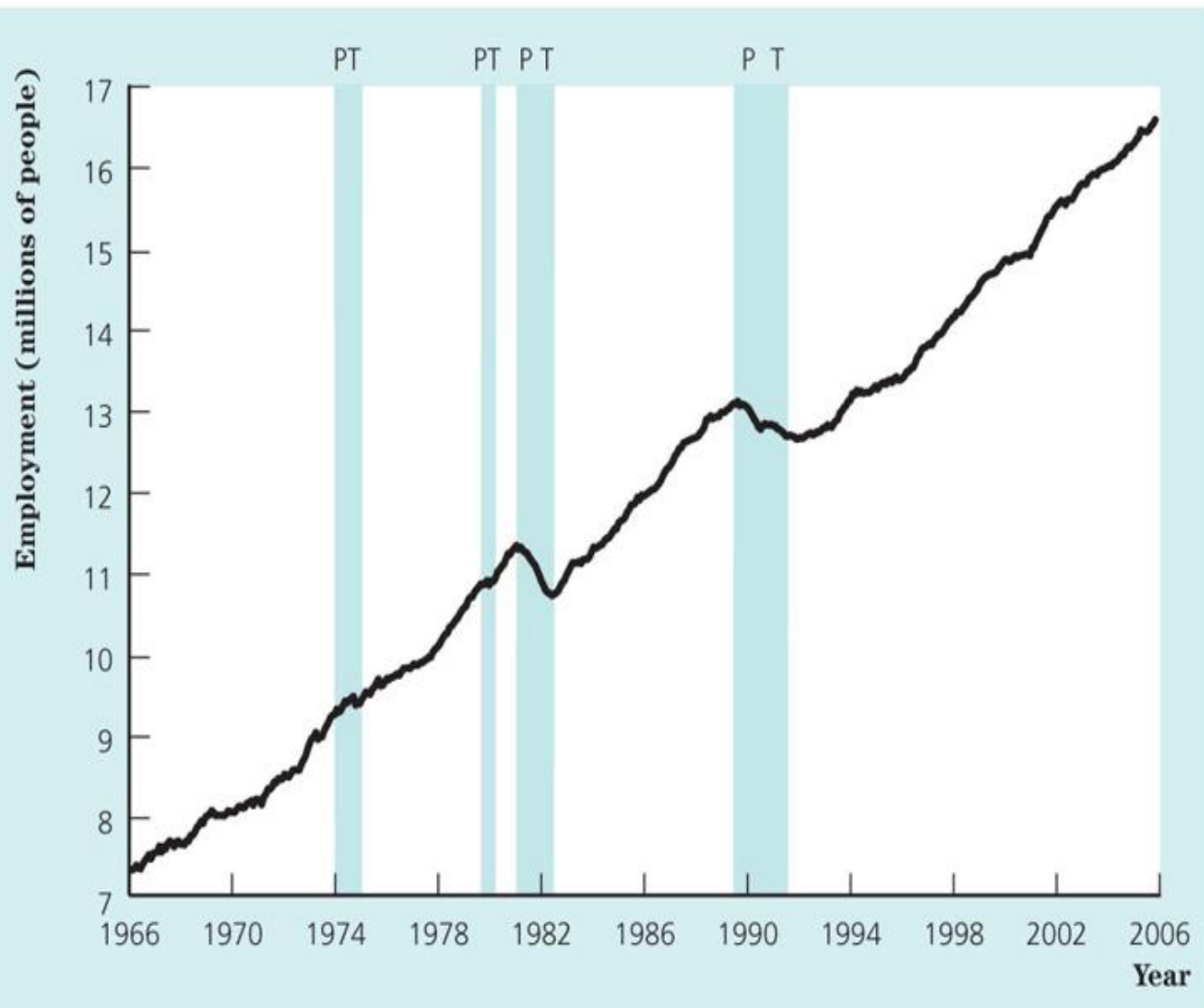


FIGURE 8.9

**CYCLICAL BEHAVIOUR OF
THE UNEMPLOYMENT RATE**

The unemployment rate is countercyclical and very sensitive to the business cycle. It rises rapidly in contractions but falls more slowly in expansions.

Source: Monthly unemployment rate, seasonally adjusted. 1966–75: *Canadian Economic Observer, Statistical Summary*; 1976–2006: Statistics Canada CANSIM II database, series v2062815.

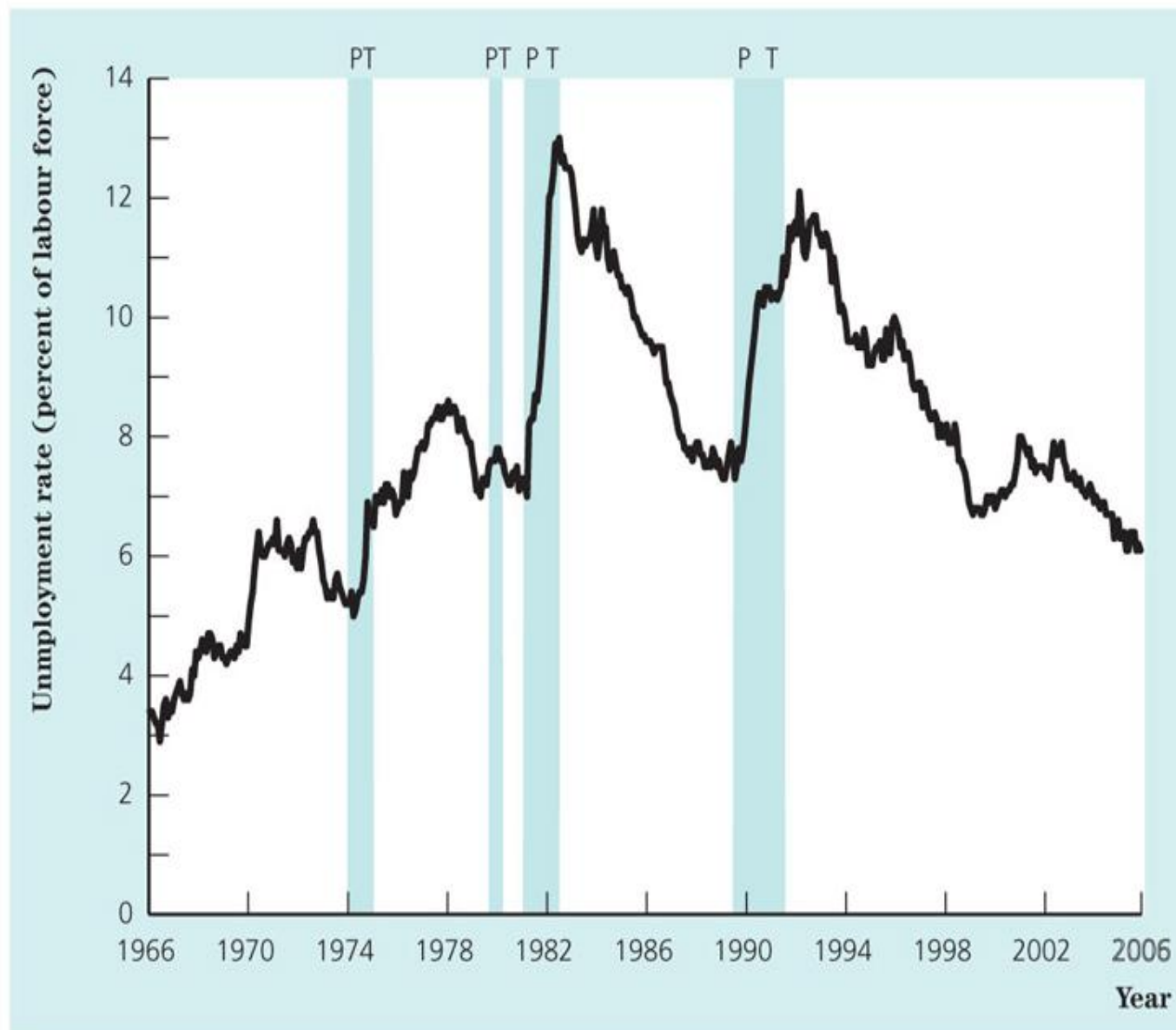


FIGURE 8.10

**CYCLICAL BEHAVIOUR
OF AVERAGE LABOUR
PRODUCTIVITY**

Average labour productivity, measured as real output per person employed, is procyclical and leading.

Source: Adapted from quarterly real GDP, seasonally adjusted, CANSIM II series v1992067. Employment, both sexes, 15 years and above: *Canadian Economic Observer, Statistical Summary* and Statistics Canada, CANSIM II series v2062811.

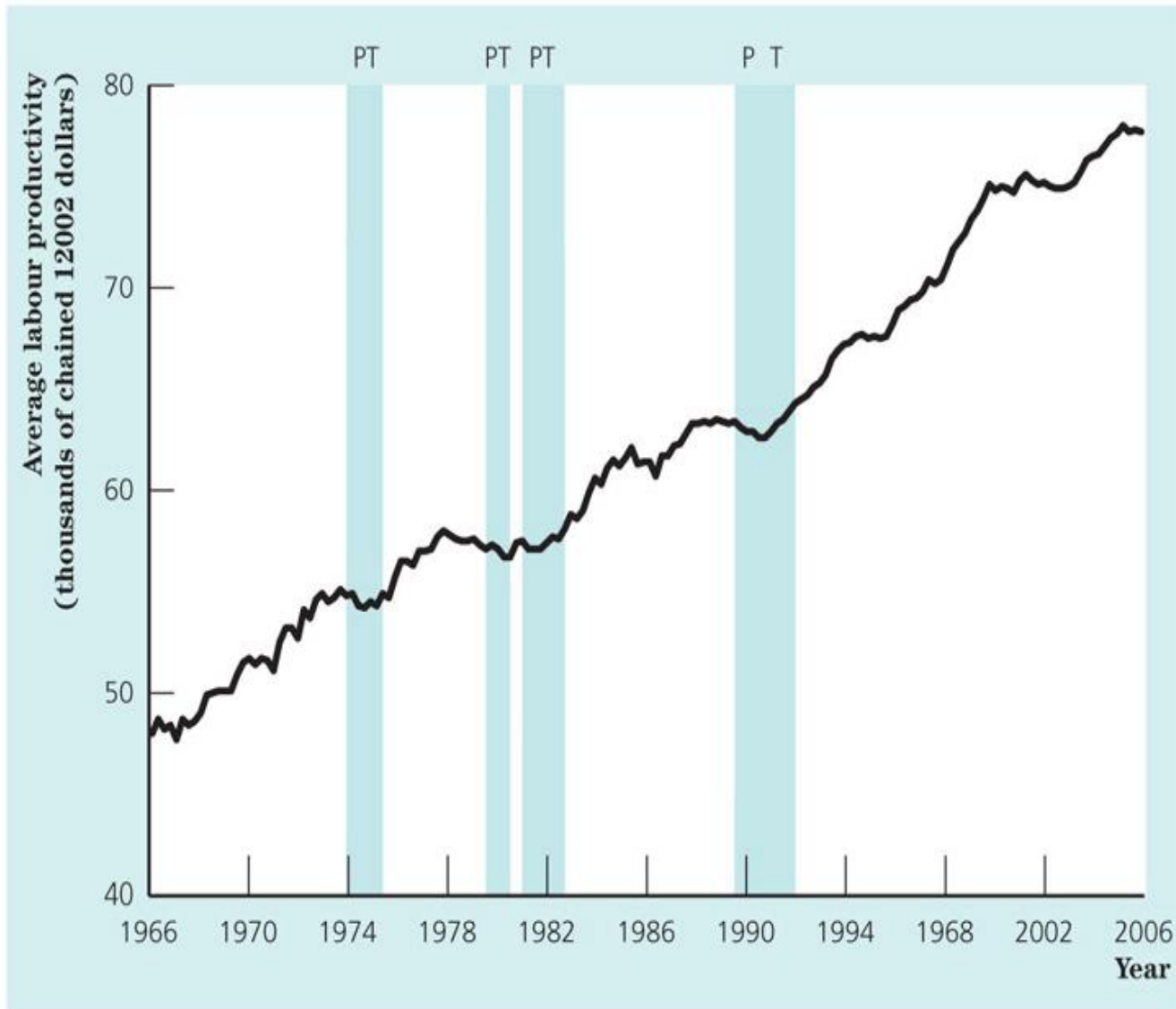


FIGURE 8.11

**CYCLICAL BEHAVIOUR OF
NOMINAL MONEY GROWTH
AND INFLATION**

Nominal money growth, here measured as the six-month moving average of monthly growth rates in M2 (expressed in annual rates), is volatile. However, the figure shows that money growth often falls at or just before a cyclical peak. Generally, money growth is procyclical and leading.

Inflation, here measured as the six-month moving average of monthly growth rates of the CPI (expressed in annual rates), is procyclical and lags the business cycle. A typical pattern is for inflation to build up during the expansion and then to fall after the cyclical peak.

Source: M2 monthly, seasonally adjusted: Statistics Canada, CANSIM II series v37128; monthly CPI, all items: Statistics Canada, CANSIM II series v735319.

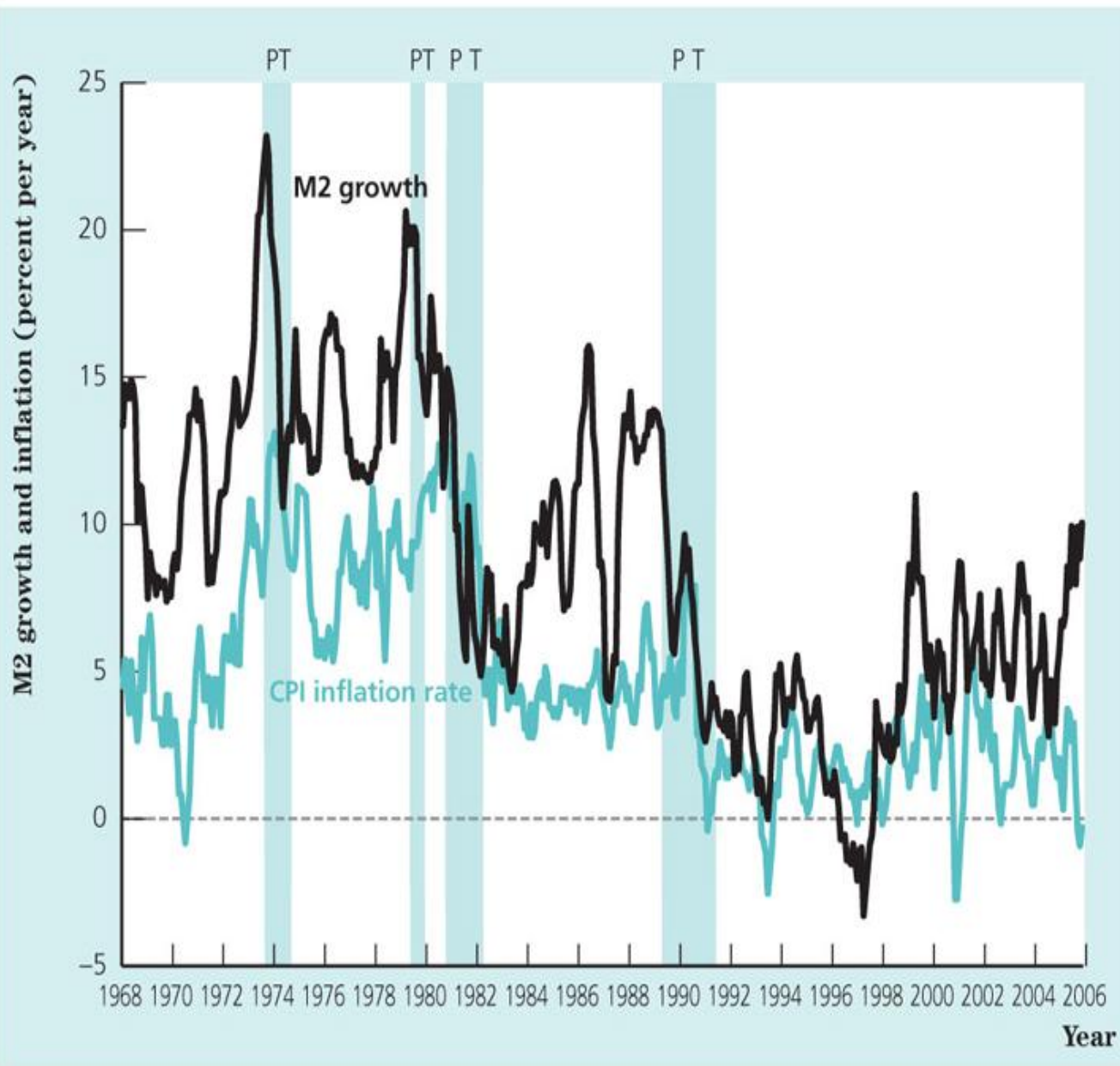
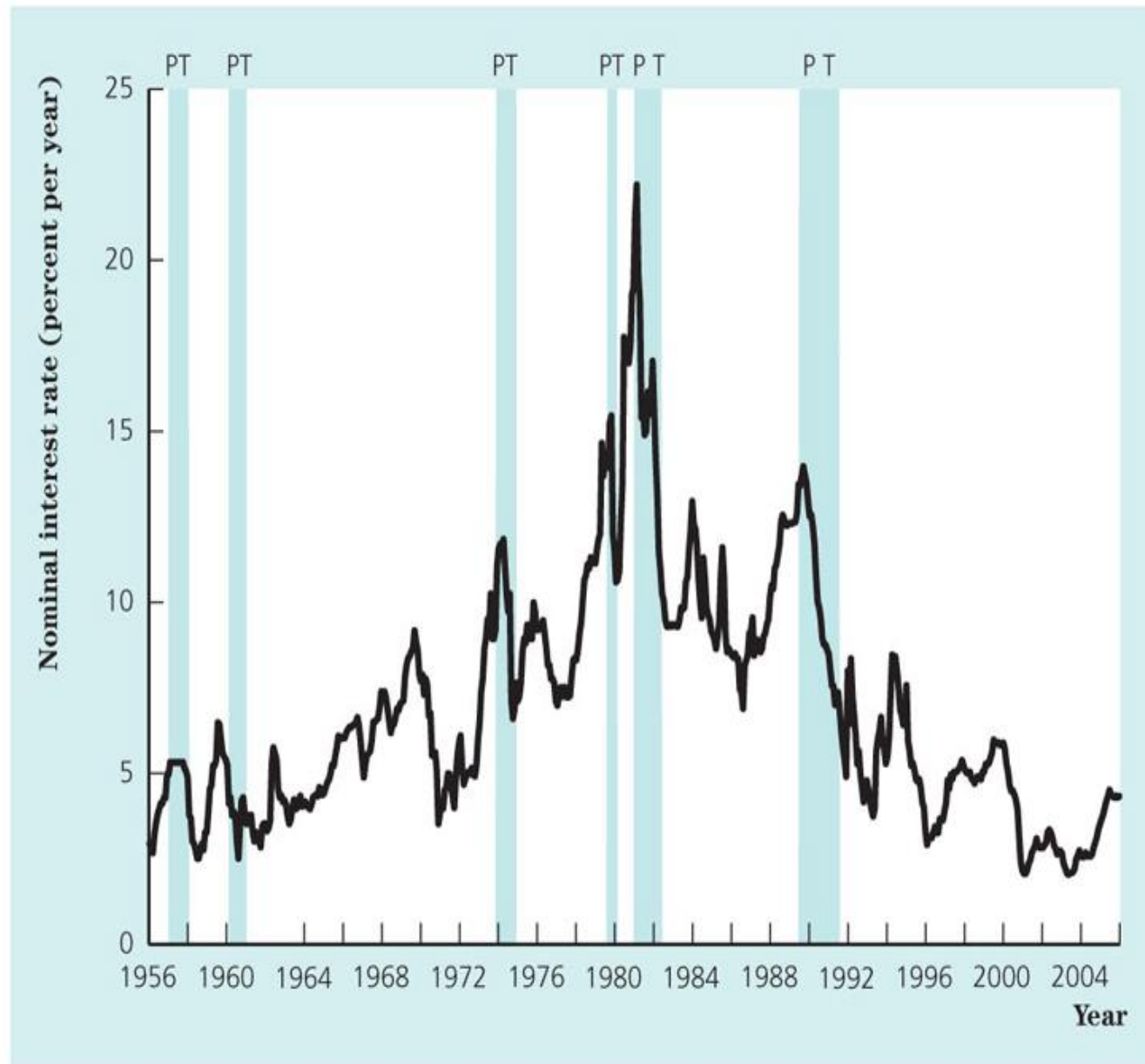


FIGURE 8.12

**CYCLICAL BEHAVIOUR OF
THE NOMINAL INTEREST
RATE**

The nominal interest rate, measured here as the interest rate on 90-day corporate paper, is procyclical and recently has lagged the business cycle.

Source: Monthly average, 90-day corporate paper rate: Adapted from Statistics Canada, CANSIM II series v122491.



Business cycle theories

- Interesting link on indicators: Glossary of Nouriel Roubini, professor at Stern School of Business, NYU.

Two components of theories:

- 1) Description of shocks hitting economy
- 2) Model of how economy responds

Classicals v. Keynesians on business cycles

Classical (and new Classical) economists view business cycles as representing the economy's best response to disturbances in production and spending.

Keynesian (and new Keynesians) economists argue that because wages and prices adjust slowly, disturbances in production and spending may drive the economy away from its most desirable level of output and employment for long periods of time.