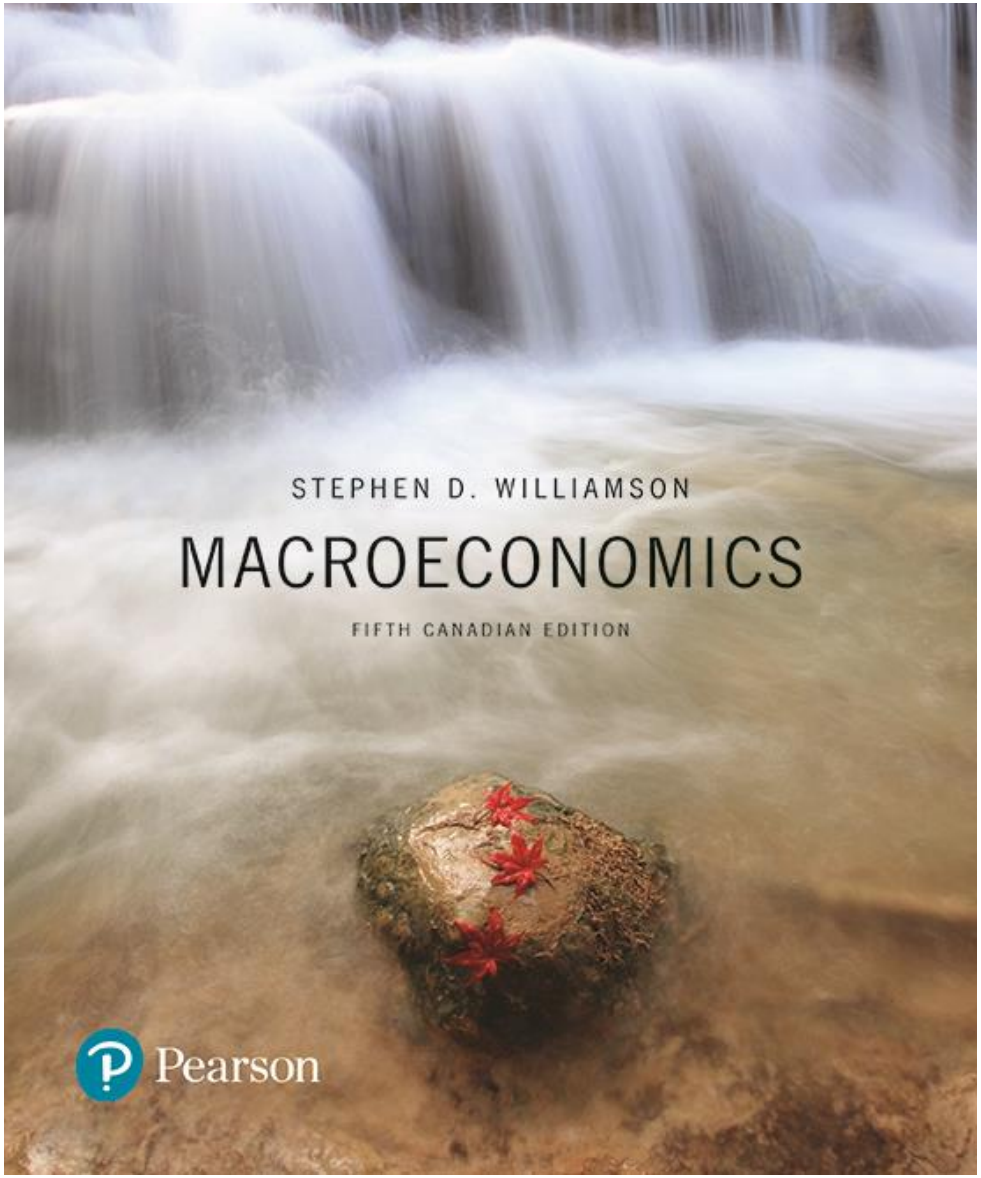
Macroeconomics

Fifth Canadian Edition



Chapter 1

Introduction

Pearson

Chapter 1 Topics

- What is macroeconomics?
- GDP, economic growth, business cycles.
- Macroeconomic models.
- Understanding recent and current macroeconomic events.

What is Macroeconomics?

- Models built to explain macroeconomic phenomena.
- The important phenomena are *long-run growth* and *business cycles.*
- Approach in this book is to build up macroeconomic analysis from microeconomic principles.

Gross Domestic Product, Economic Growth, and Business Cycles

- Gross Domestic Product (GDP): the quantity of goods and services produced within a country's borders over a particular period of time.
- The time series of GDP can be separated into *trend* and *business cycle* components.

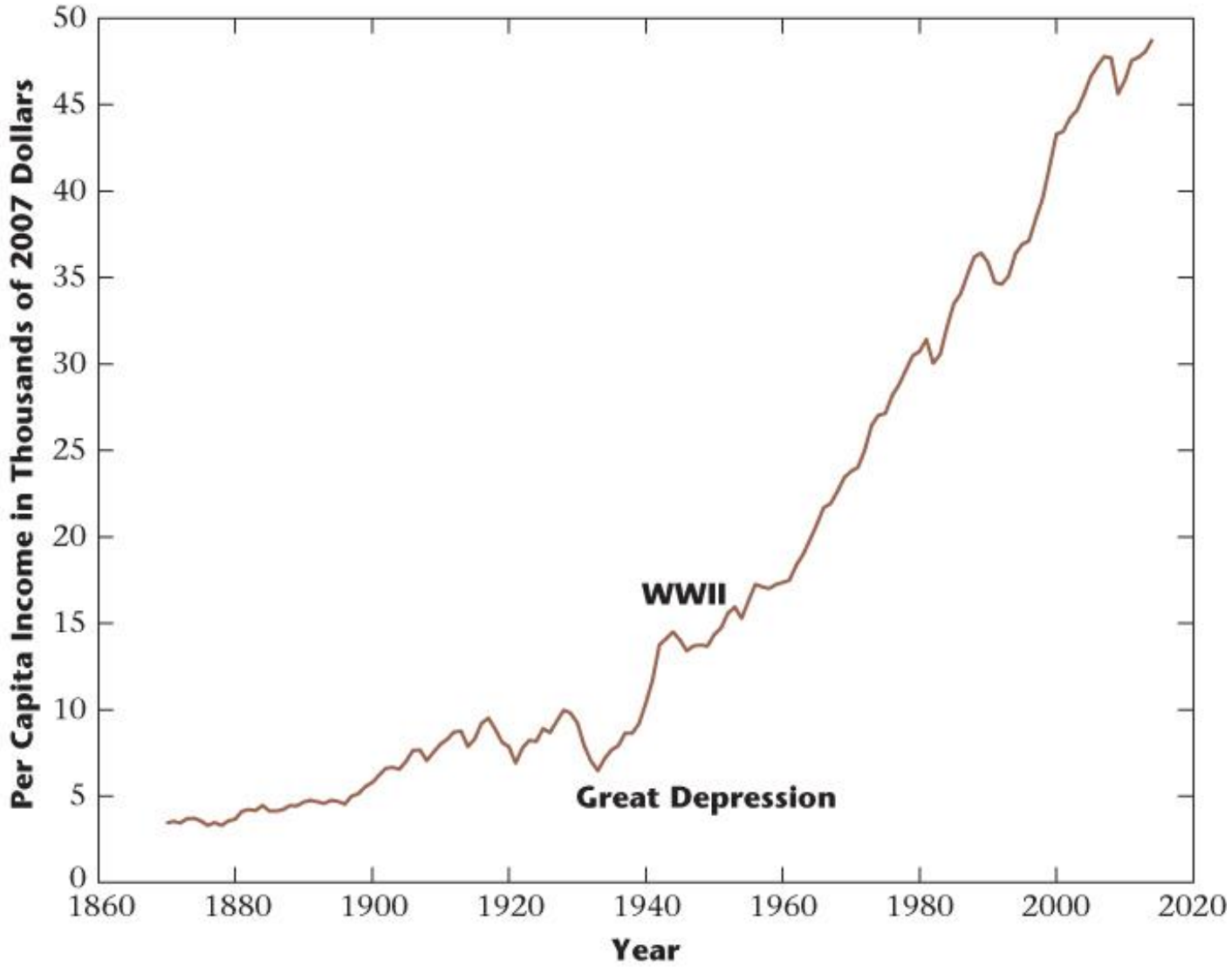
Figure 1.1
Per Capita Real GDP for Canada, 1870–2014 (2007 dollars)

FIGURE 1.1

Per Capita Real GDP for Canada, 1870–2014 (2007 dollars)

Per capita real GDP is a measure of the average level of income for a Canadian resident. Two unusual, though key, events in the figure are the Great Depression, when there was a large reduction in living standards for the average Canadian, and World War II, when per capita output increased greatly.

Source: Adapted from the Statistics Canada CANSIM database, Series v3860085, V1, Table 380-0106, and from the Statistics Canada publication *Historical Statistics of Canada*, Catalogue 11-516, 1983, Series F33–55, A1. © Stephen D. Williamson.



Pearson

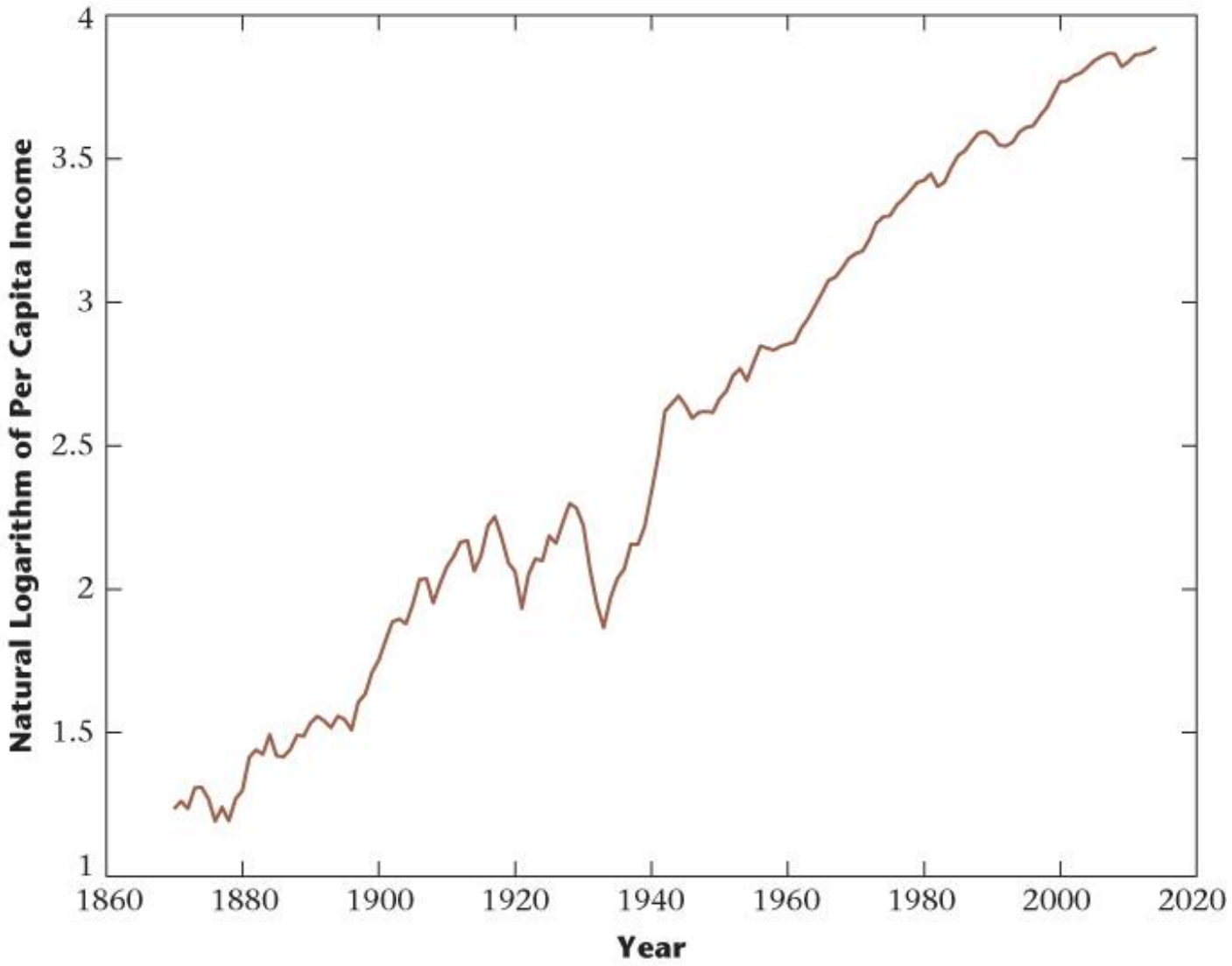
Figure 1.2
Natural Logarithm of Per Capita Real GDP

FIGURE 1.2

Natural Logarithm of Per Capita Real GDP

Here, the slope of the graph is approximately equal to the growth rate of per capita GDP. Excluding the period from 1920 to 1945, the growth rate of per capita GDP is remarkably close to being constant during this period. That is, a straight line would fit the graph fairly well.

Source: Adapted from the Statistics Canada CANSIM database, Series v3860085, V1, Table 380-0106, and from the Statistics Canada publication *Historical Statistics of Canada*, Catalogue 11-516, 1983, Series F33–55, A1. © Stephen D. Williamson.



Pearson

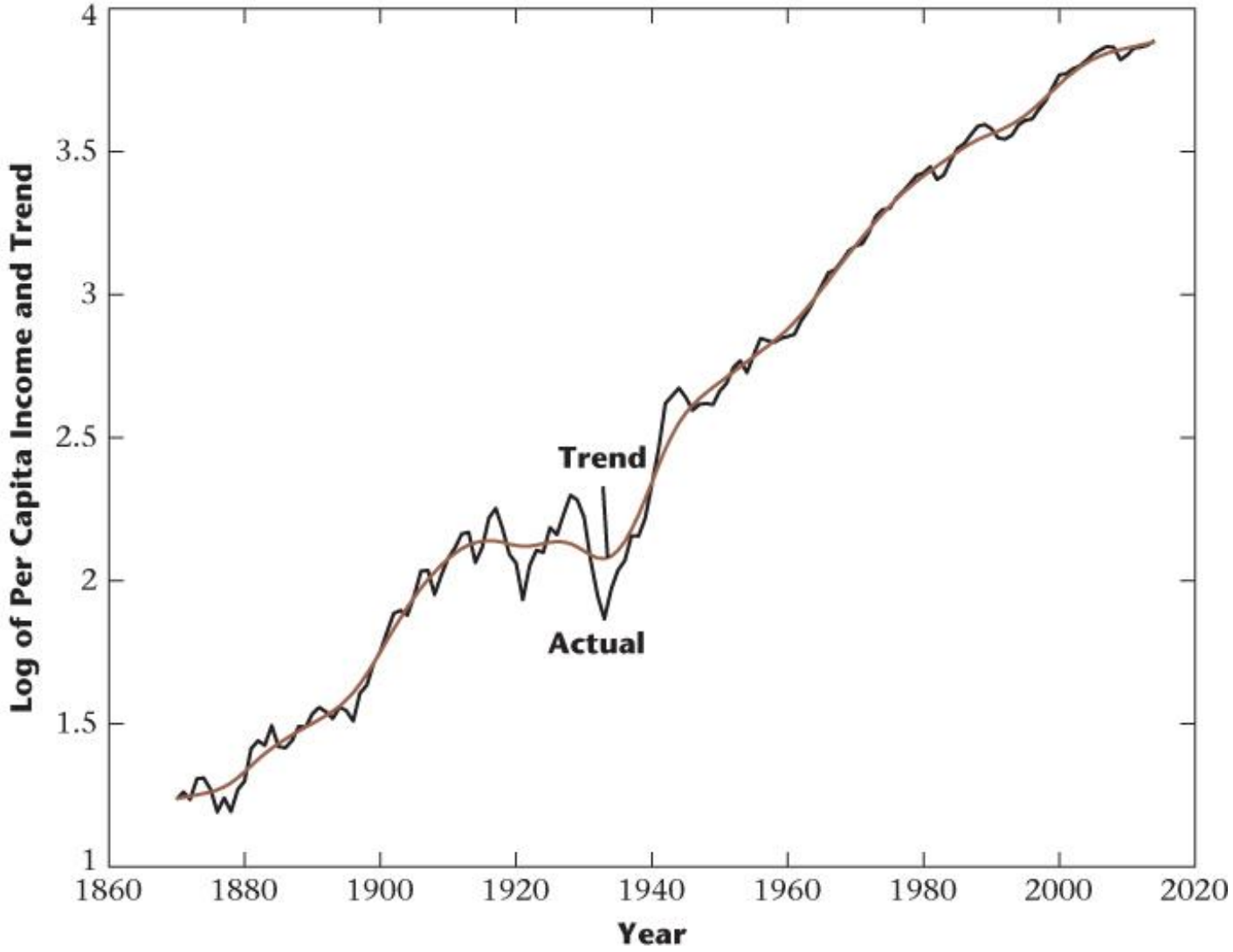
Figure 1.3
Natural Logarithm of Per Capita GDP and Trend

FIGURE 1.3

Natural Logarithm of Per Capita GDP and Trend

Sometimes it is useful to separate long-run growth from business cycle fluctuations. In the figure, the black line is the log of real per capita GDP, while the coloured line denotes a smooth growth trend fit to the data. The deviations from the smooth trend then represent business cycles.

Source: Adapted from the Statistics Canada CANSIM database, Series v3860085, V1, Table 380-0106, and from the Statistics Canada publication *Historical Statistics of Canada*, Catalogue 11-516, 1983, Series F33–55, A1. © Stephen D. Williamson.



Pearson

Figure 1.4
Percentage Deviations from Trend in Per Capita GDP

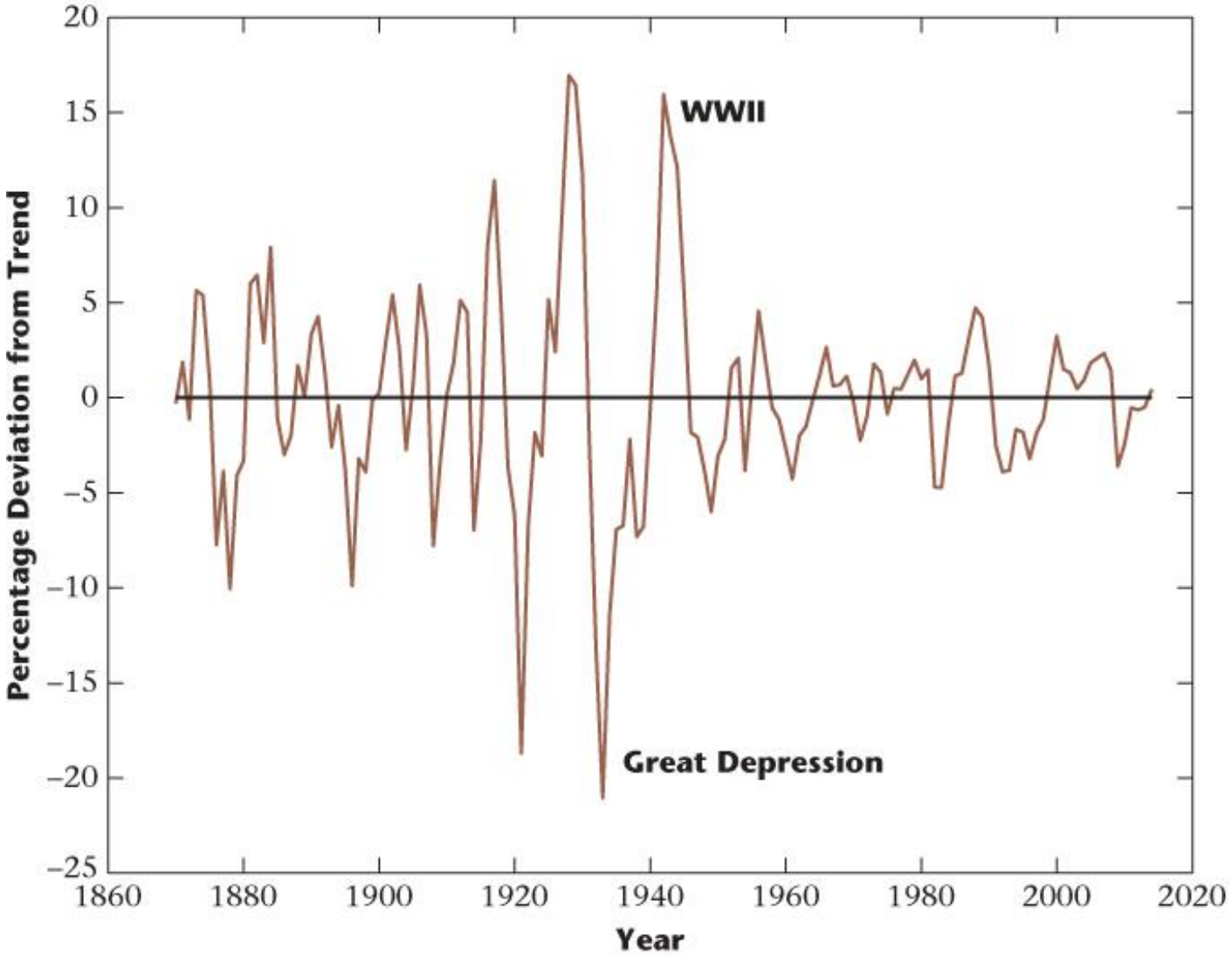


FIGURE 1.4

Percentage Deviations from Trend in Per Capita GDP

Note the reduction in the volatility of real per capita GDP since World War II.

Source: Adapted from the Statistics Canada CANSIM database, Series v3860085, V1, Table 380-0106, and from the Statistics Canada publication *Historical Statistics of Canada*, Catalogue 11-516, 1983, Series F33–55, A1. © Stephen D. Williamson.

Pearson

Macroeconomic Models

- A macroeconomic model captures the essential features of the world needed to analyze a particular macroeconomic problem.
- Macroeconomic models should be simple, but they need not be realistic.

Basic Structure of a Macroeconomic Model

- Consumers and firms
- The set of goods that consumers consume
- Consumers' preferences
- The production technology
- Resources available

Understanding Recent and Current Macroeconomics Events

- Aggregate productivity
- Government Spending and Government Surplus
- Unemployment
- Inflation
- Interest Rates
- Trade and the Current Account Surplus
- The Financial Crisis

Figure 1.5
Natural Logarithm of Average Labour Productivity

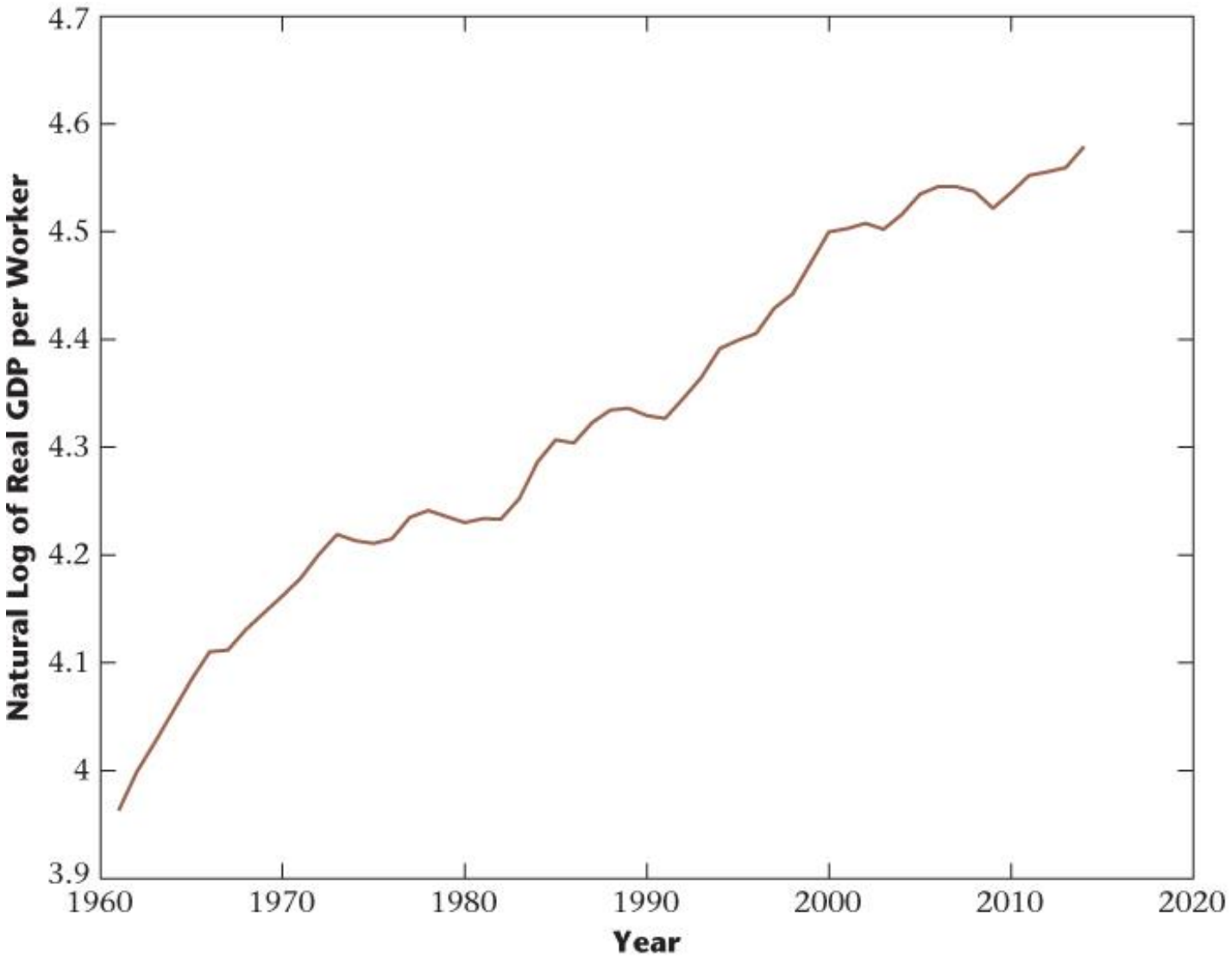


FIGURE 1.5

Natural Logarithm of Average Labour Productivity

Average labour productivity is the quantity of aggregate output produced per worker. Because the graph is of the log of average labour productivity, the slope of the graph is approximately the growth rate in average labour productivity. Productivity growth slowed from the early 1970s to the early 1980s, and later on, after 2000.

Source: Adapted from the Statistics Canada CANSIM database, Series v3860085, v2461119, v3822183, v1078498, Table 380-0064, and from the Statistics Canada publication *Historical Statistics of Canada*, Catalogue 11-516, 1983, Series D175–189. © Stephen D. Williamson.

Pearson

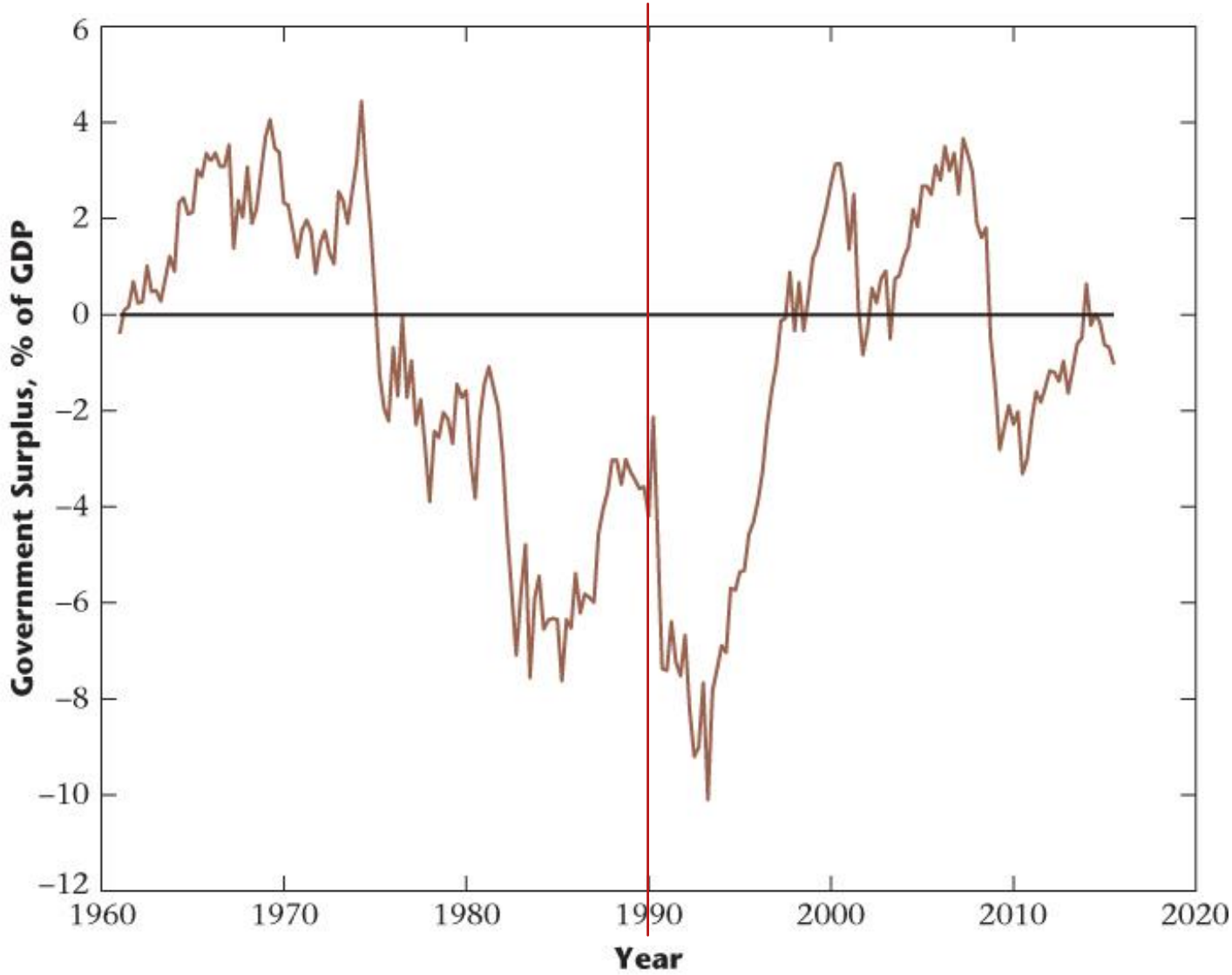
Figure 1.6
The Total Government Surplus in Canada, as a Percentage of GDP

FIGURE 1.6

The Total Government Surplus in Canada, as a Percentage of GDP

Of particular note is the trend decrease that occurs in the government surplus until the early 1990s, with the government surplus being negative for most of the period since the mid-1970s. The government surplus increases through most of the 1990s and becomes positive in the late 1990s. A deficit opens up in the 2008–2009 recession.

Source: Adapted from the Statistics Canada CANSIM database, Series v498316, v498086 and Table 380-0079. © Stephen D. Williamson.



Pearson

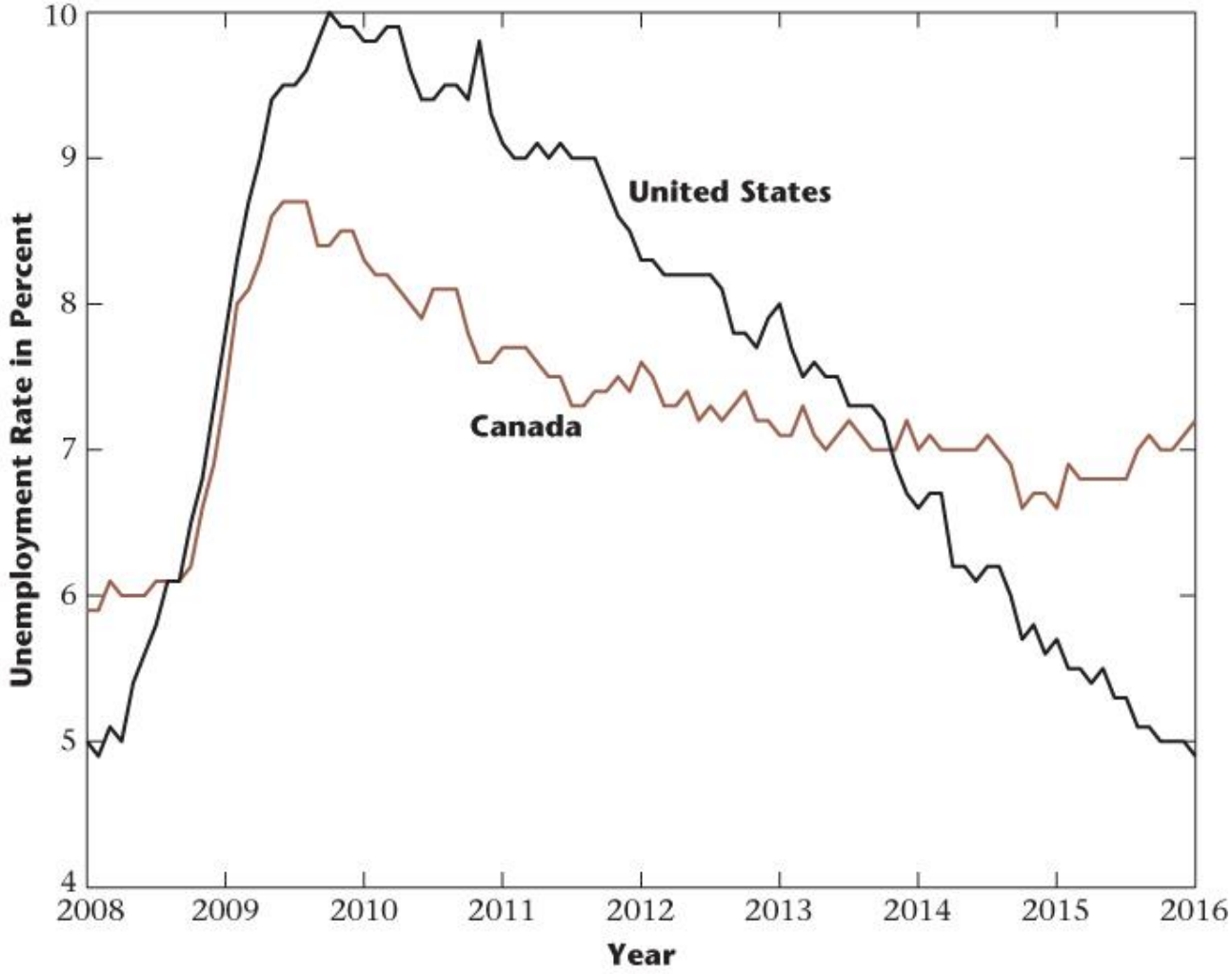
Figure 1.7
Unemployment Rates in Canada and the United States after the Beginning of 2008

FIGURE 1.7

Unemployment Rates in Canada and the United States after the Beginning of 2008

The unemployment rate rose much more in the United States than in Canada in the recent recession. Then, after the recession ended, the unemployment rate fell more quickly in the United States than in Canada.

Source: Adapted from Statistics Canada CANSIM database, Series v2062815. U.S. source: Bureau of Labor Statistics.
© Stephen D. Williamson.



Pearson

Figure 1.8
Inflation and Money Growth

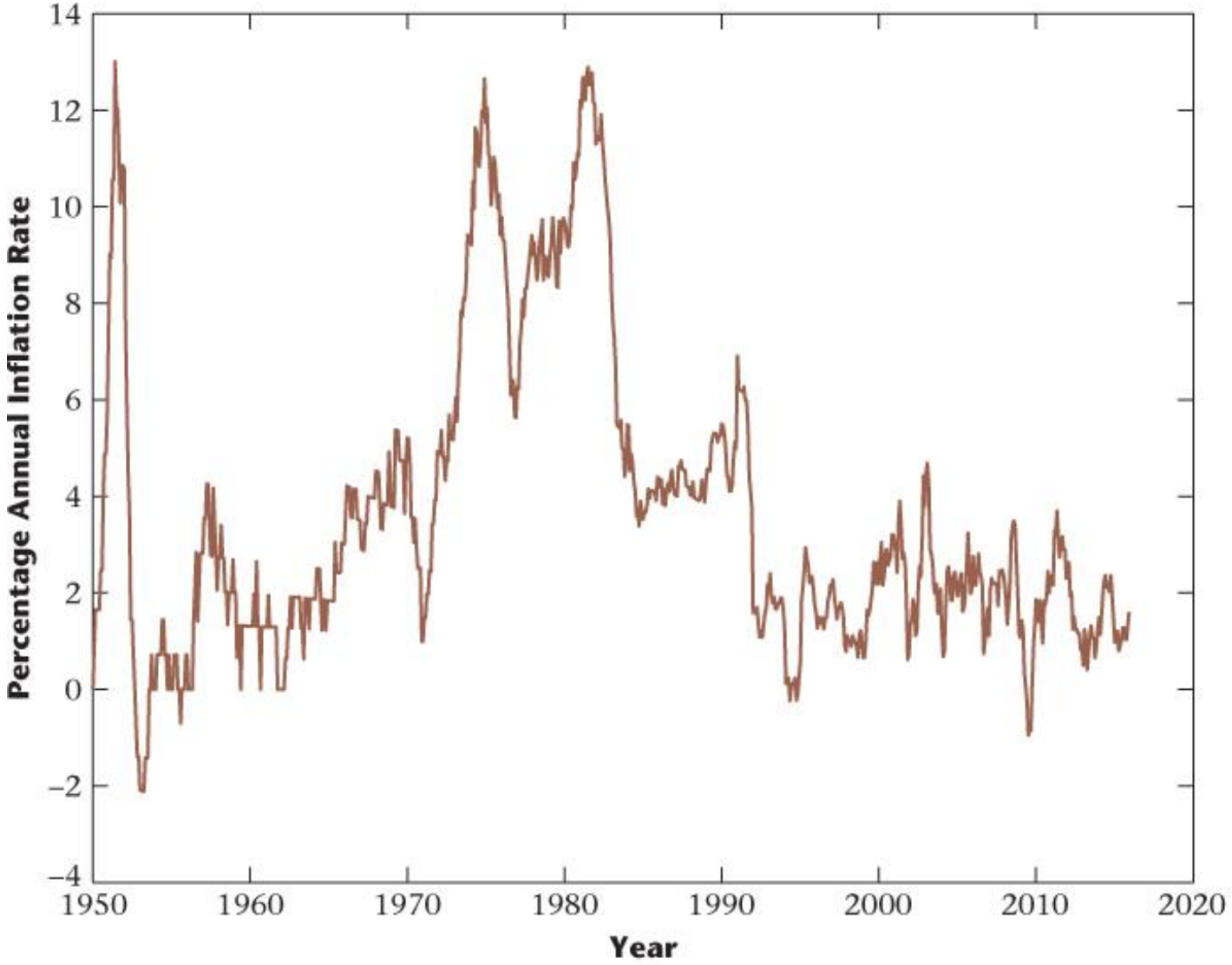


FIGURE 1.8

Inflation and Money Growth

The high inflation of the 1970s was brought down by the policies of the Bank of Canada, particularly inflation targeting, which was introduced in 1990.

Source: Adapted from the Statistics Canada CANSIM database, Series v41690973. © Stephen D. Williamson.

Pearson

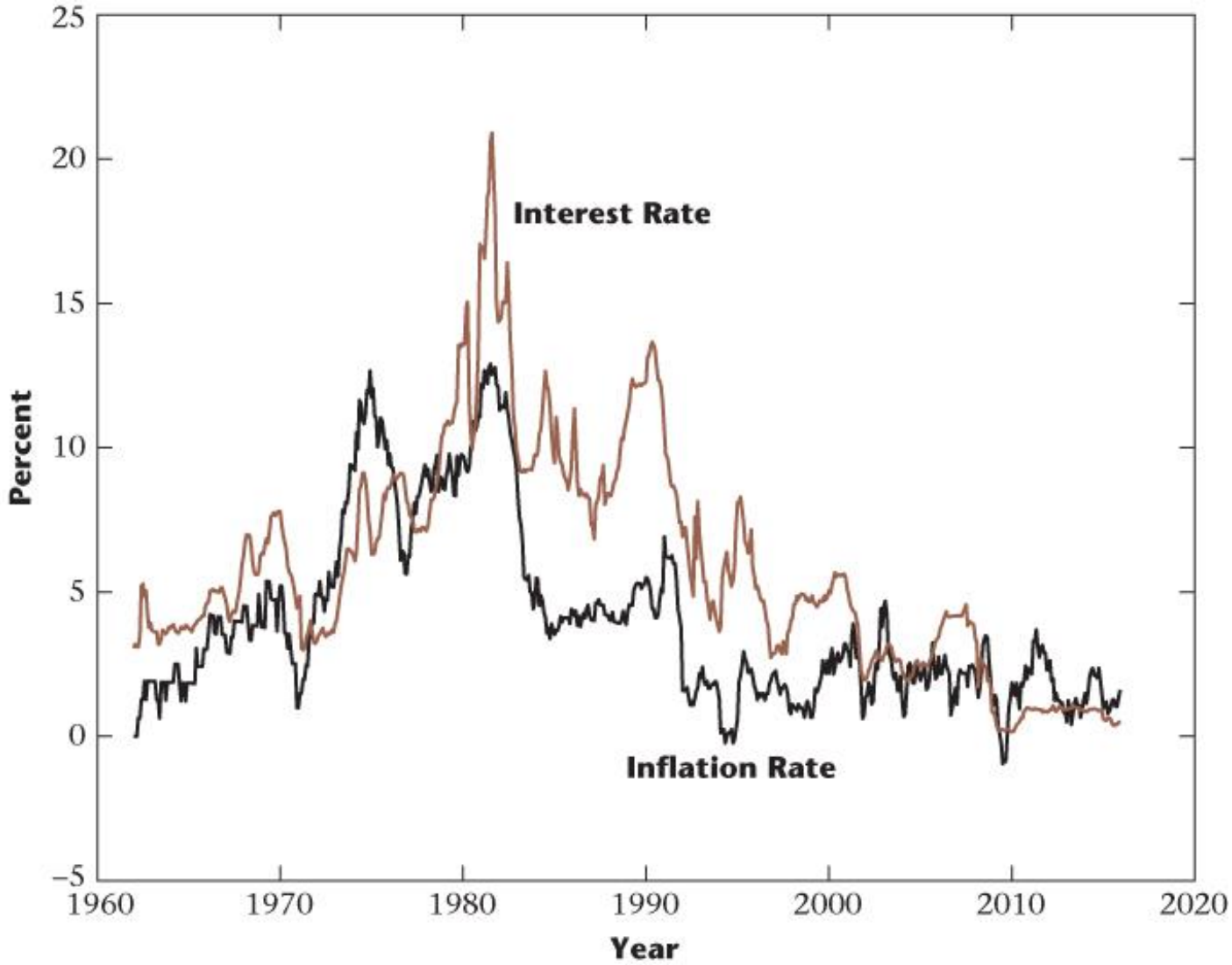
Figure 1.9
The Nominal Interest Rate and the Inflation Rate

FIGURE 1.9

The Nominal Interest Rate and the Inflation Rate

Macroeconomic theory tells us that the nominal interest rate and the inflation rate are positively related. In the figure, the nominal interest rate, which is the three-month Treasury bill rate (a short-term interest rate on federal government securities) tends to track the ups and downs in the inflation rate.

Source: Adapted from the Statistics Canada CANSIM database, Series v122531, v41690973.



Pearson

Figure 1.10
Real Interest Rate

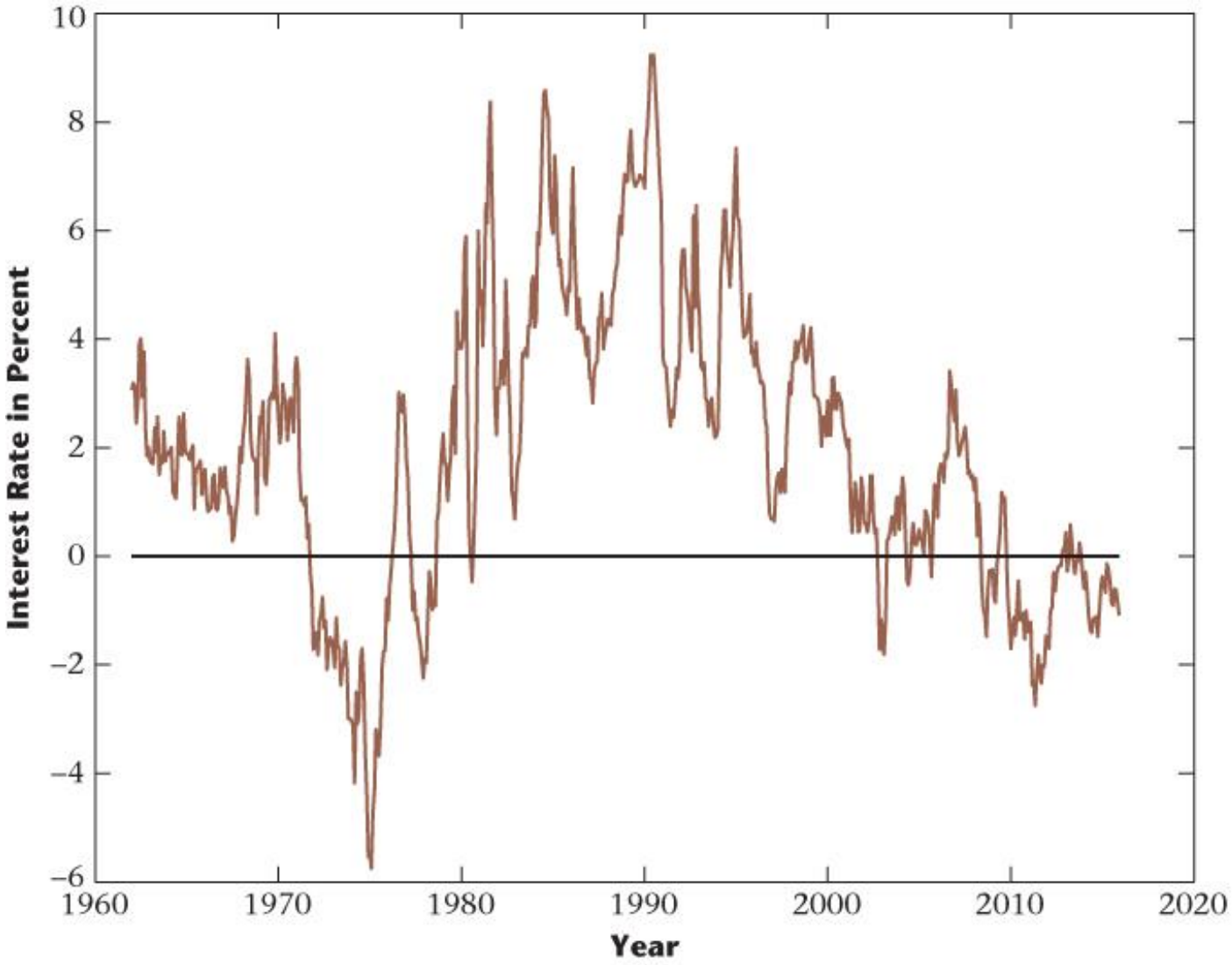


FIGURE 1.10

Real Interest Rate

The figure shows a measure of the real interest rate, which here is the short-term nominal interest rate minus the actual rate of inflation. Monetary policy can have a short-run effect on the real interest rate; for example, the high real interest rates in the 1980s are often attributed to tight monetary policy. Monetary policy has been quite accommodative since the last recession, with low or negative real rates.

Source: Adapted from the Statistics Canada CANSIM database, Series v122531, v41690973.

Pearson

Figure 1.11
Exports and Imports of Goods and Services for Canada, as Percentages of GDP

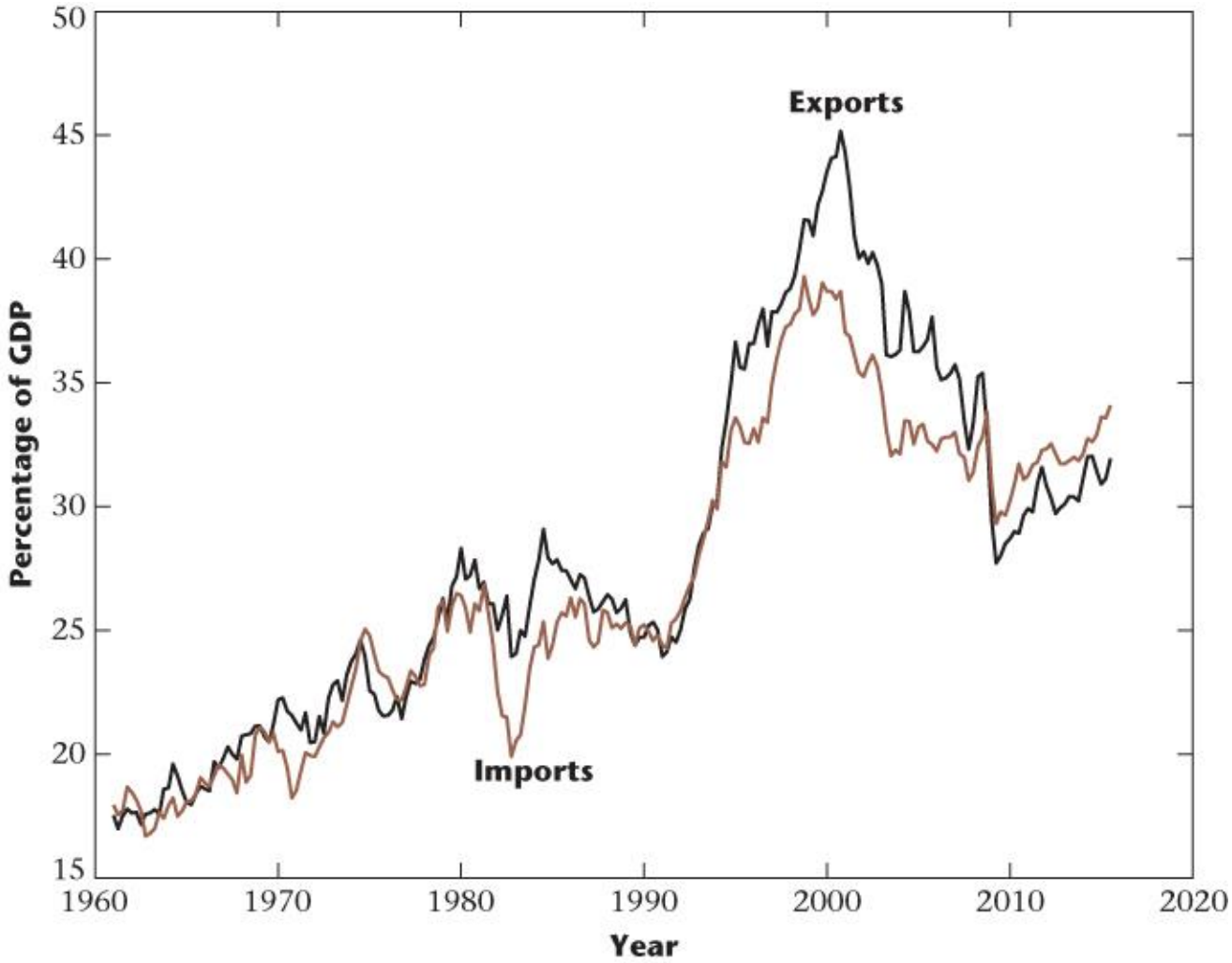
FIGURE 1.11

Exports and Imports of Goods and Services for Canada, as Percentages of GDP

The increase in both imports and exports reflects a general increase in world trade, though exports and imports both fell from 2000 to 2015.

Source: Adapted from the Statistics Canada CANSIM database, Series Tables 380-0002 and 380-0064.

© Stephen D. Williamson.



Pearson

Figure 1.12
Current Account Surplus for Canada, 1961–2015

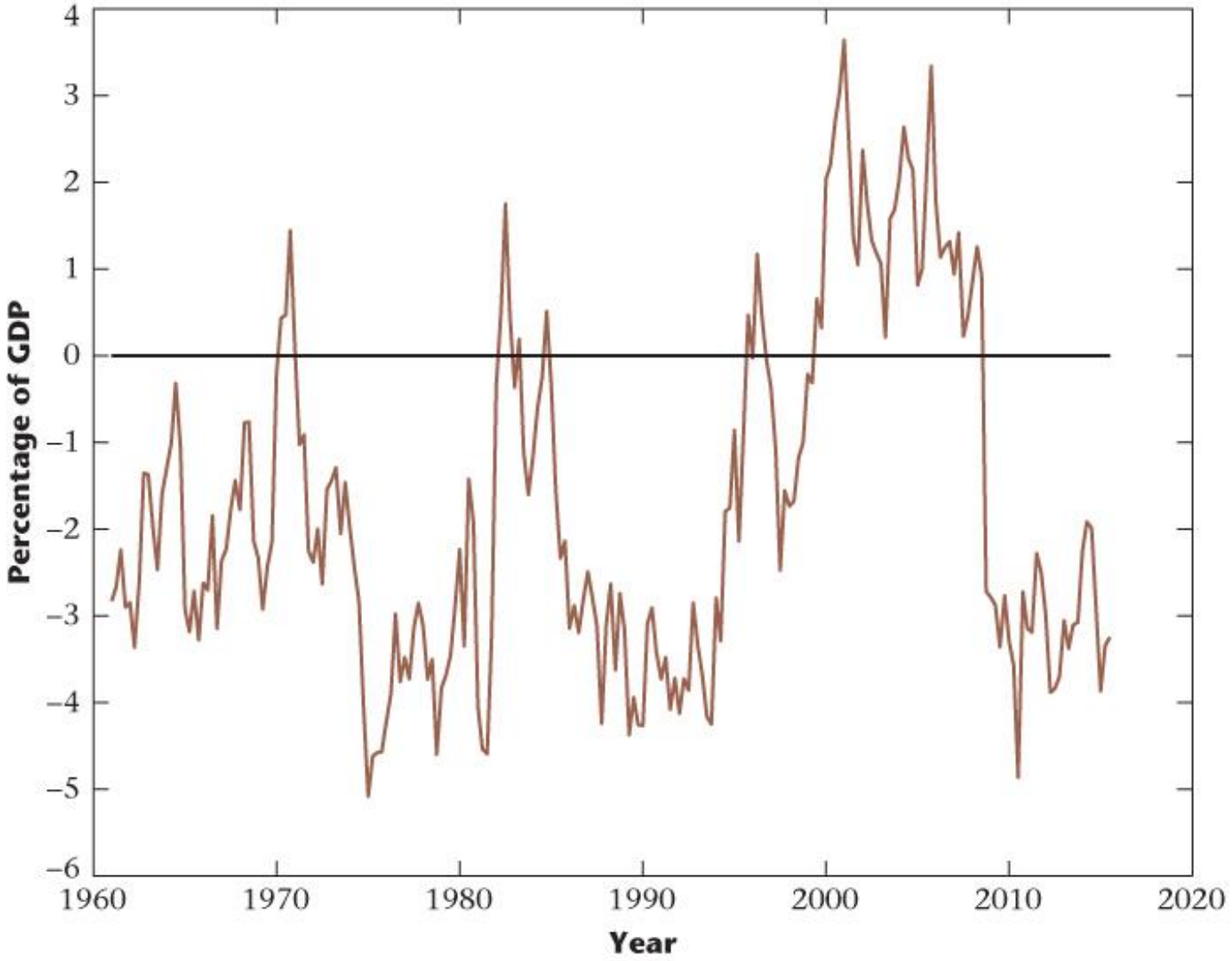


FIGURE 1.12

Current Account Surplus for Canada, 1961–2015

The figure shows the current account surplus for Canada from 1961 to 2015, which is exports of goods and services minus imports of goods and services plus net factor payments from foreigners, here plotted as a percentage of GDP. Canada ran a current account deficit for much of this period, but began to run a surplus in the late 1990s, with a deficit opening up in the 2008–2009 recession.

Source: Adapted from the Statistics Canada CANSIM database, Series v114421, and Table 376-0105.

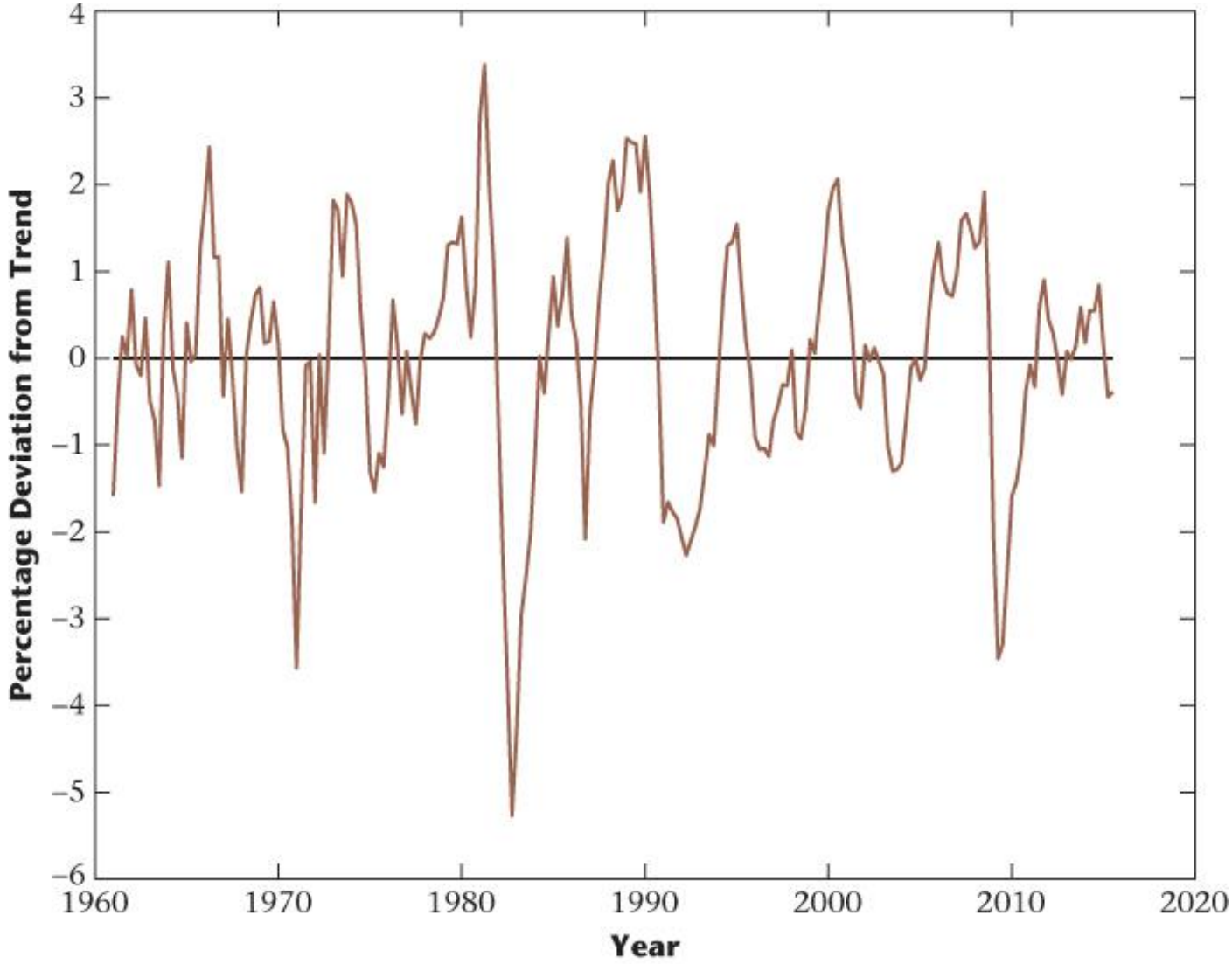
Pearson

Figure 1.13
Percentage Deviation From Trend in Real GDP

FIGURE 1.13

Percentage Deviation from Trend in Real GDP

Source: Adapted from the Statistics Canada CANSIM database, Tables 380-0002 and 380-0064.



Pearson

Figure 1.14
Real GDP in Canada and the United States, 2008–2015

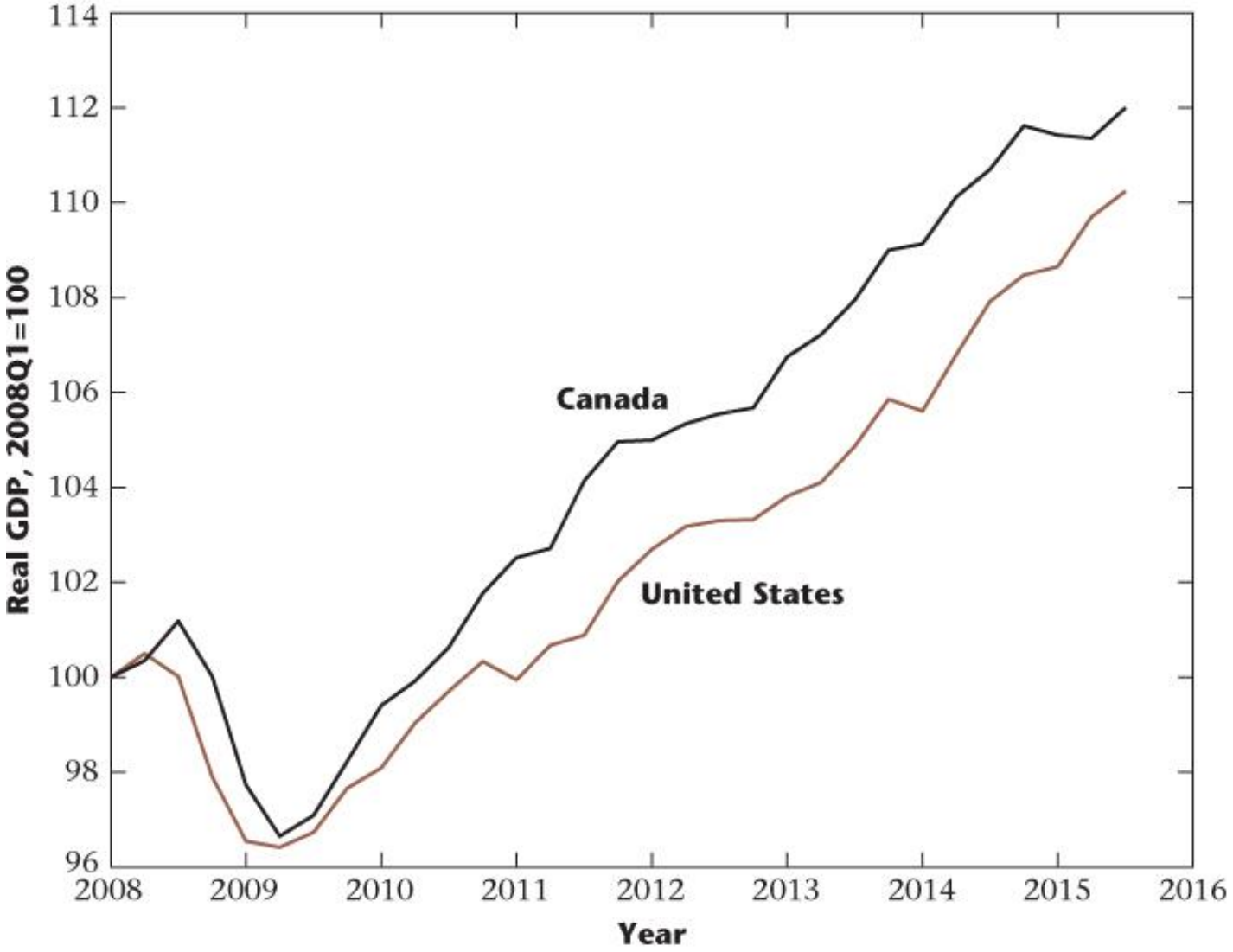


FIGURE 1.14

Real GDP in Canada and the United States, 2008–2015

Source: Adapted from the Statistics Canada CANSIM database, Table 380-0064. U.S. source: Bureau of Economic Analysis.

Pearson