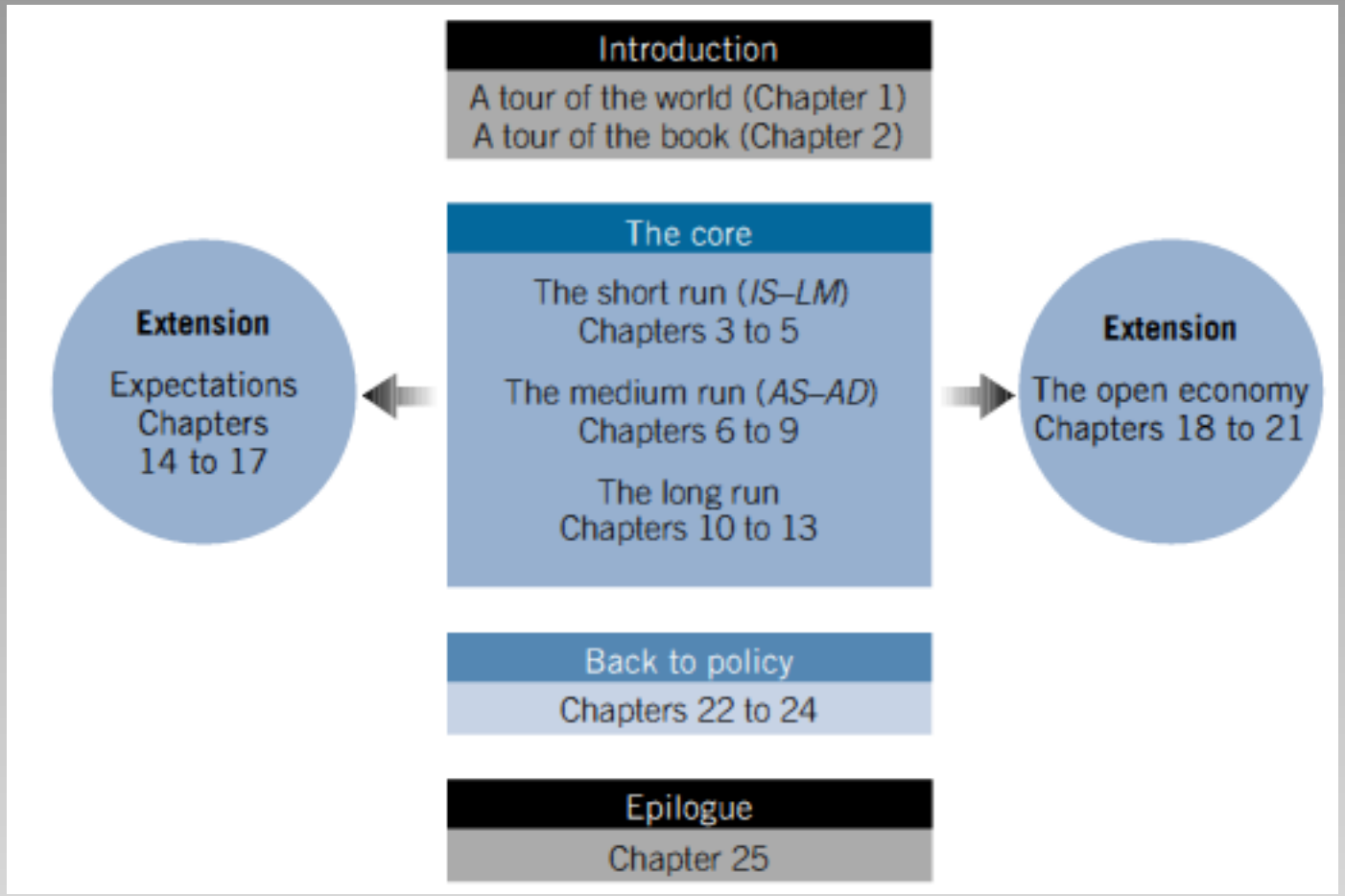
Chapter 2: A Tour of the Book & Key Macroeconomic variables



THE P-Q CATEGORY

- ✓ Macroeconomics deals with many variables, but two major variables are the **Price level** and **Real GDP**.
- ✓ **Price level** (**P**) is the weighted average of the prices of all goods and services.
- ✓ **Real GDP** (**Q**) is the value of the entire output produced annually within a country's borders, adjusted for price changes.

P and Q in Macroeconomics

- ✓**Gross Domestic Product (GDP).** P times Q.
- ✓**Unemployment.** Changes in unemployment are related to changes in Q.
- ✓**Inflation.** A rising P.
- ✓**Deflation.** A falling P (negative inflation).
- ✓**Disinflation.** A decrease in the inflation rate.
- ✓**Economic growth**. Related to increasing Q.
- ✓**Stagflation.** A rising P combined with rising unemployment.

Macroeconomic Measures - Prices

- ✓ **Price Index -** A measure of the price level.
- ✓ **Consumer Price Index (CPI) -** A widely cited index number for the price level; the weighted average of prices of a specific set of goods and services purchased by a typical household.

Measuring the Cost of Living

Inflation refers to a situation in which the economy's overall price level is rising.

The inflation rate is the percentage change in the price level from the previous period.

CPI (consumer price index) & GDP deflator are the proxies for inflation.

THE CONSUMER PRICE INDEX

The *consumer price index* (*CPI*) is a measure of the overall cost of the goods and services bought by a typical consumer.

It is used to monitor changes in the cost of living over time.

When the CPI rises, the typical family has to spend more rands to maintain the same standard of living.

Explain how the CPI is calculated.

The CPI is calculated as follows:

(1) define a market basket,

(2) determine how much it would cost to purchase the market basket in the current year and in the base year

(3) divide the Rand cost of purchasing the market basket in the current year by the Rand cost of purchasing the market basket in the base year, and

(4) multiply the result by 100.

How the Consumer Price Index Is Calculated

Calculating the Consumer Price Index and the Inflation Rate:

Example

Base Year is 2002 (so, CPI in 2002 is 100).

Basket of goods in 2002 costs R1,200.

The same basket in 2004 costs R1,236.

CPI = (R1,236/R1,200) $\times$ 100 = 103.

Prices increased 3 percent between 2002 and 2004.

How the Inflation Rate is Calculated

The Inflation Rate

The *inflation rate* is calculated as follows:

$$\text{Inflation Rate in Year 2} = \frac{\text{CPI in Year 2} - \text{CPI in Year 1}}{\text{CPI in Year 1}} \times 100$$

Similarly, if we use the GDP deflator

Problems in Measuring the Cost of Living

The CPI is an accurate measure of the selected goods that make up the typical bundle, but it is not a perfect measure of the cost of living.

(ie. the substitution bias or the introduction of new goods may cause the CPI to overstate the true cost of living).

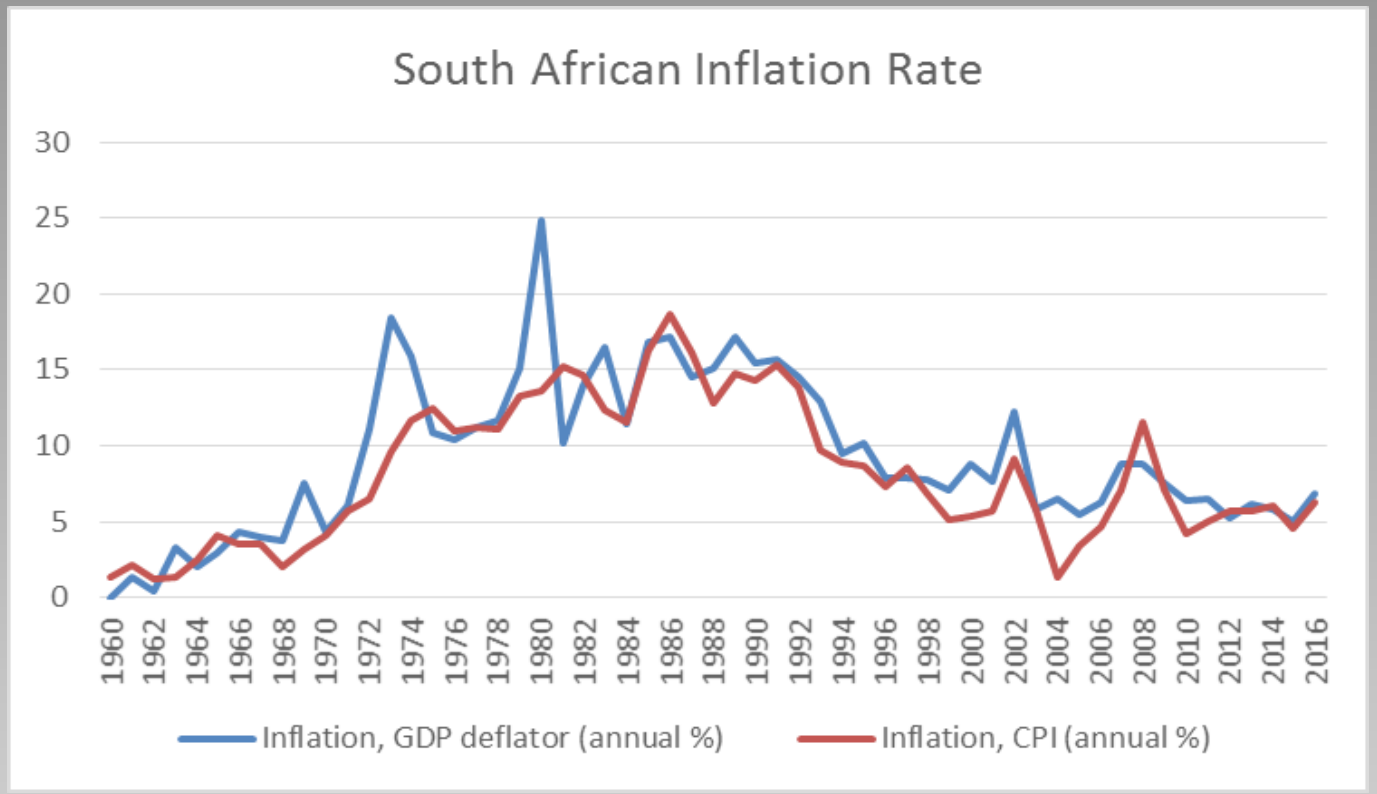
The GDP Deflator versus the Consumer Price Index

The *GDP deflator* reflects the prices of all goods and services *produced domestically*, whereas...

...the *consumer price index* reflects the prices of all goods and services *bought by consumers* (*these goods can include imported goods*).

Another price index is the *producer price index*, which measures the cost of a basket of goods and services bought by firms rather than consumers.

South African Inflation rate
(source: World Bank)



Gross Domestic Product (GDP)

The total market value of all final goods and services produced annually within a country's borders.

GDP and GNP

Gross domestic product (GDP)

- measures the output produced by factors of production located in the domestic economy

Gross national product (GNP)

- measures the output produced by domestic citizens (domestically or abroad)

GNP = GDP + **net income from abroad**

Macroeconomic Measures - Income

- **Nominal Income -** The current-dollar amount of a person's income.
- **Real Income -** Nominal income adjusted for price changes.

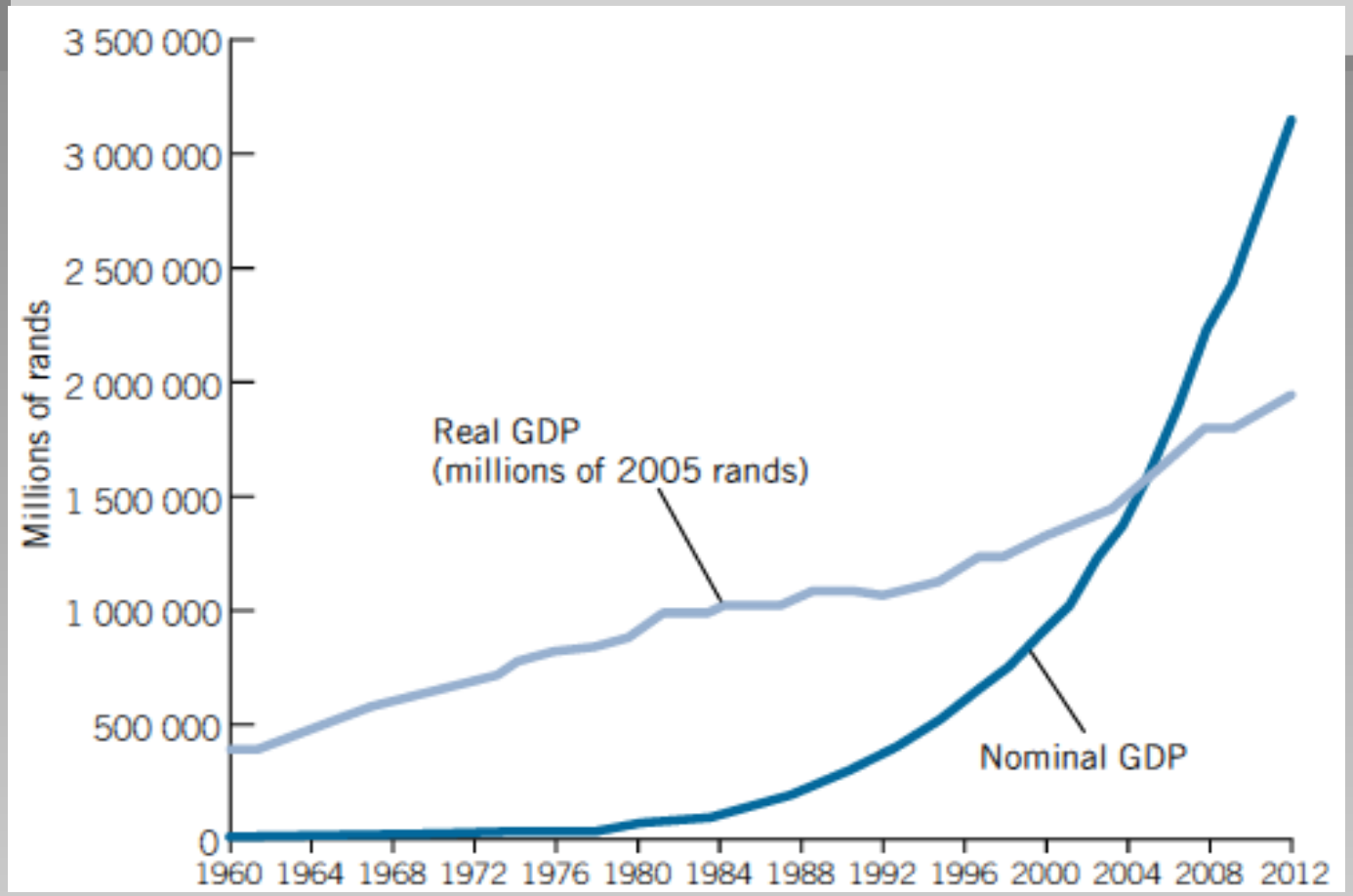
$$\text{Real income} = \left(\frac{\text{Nominal income}}{\text{CPI}} \right) \times 100$$

Real vs Nominal GDP: Example

(Choose a base year, here 2000 is the base year)

Year	Quantity of Cars	Price of cars	Nominal GDP	Real GDP (in 2000 dollars)
1999	**10**	**$20,000**	**$200,000**	**$240,000**
2000	**12**	**$24,000**	**$288,000**	**$288,000**
2001	**13**	**$26,000**	**$338,000**	**$312,000**

2.1 Aggregate output



Source: SARB *Quarterly bulletin*, S108 and S109

Figure 2.1 Nominal and real South African GDP, 1960–2012

What's Not Included in GDP

- ✓ Certain non-market goods and services performed at home by family members.
- ✓ Sales of used goods
- ✓ Financial transactions such as trading of stocks and bonds
- ✓ Government transfer payments such as social security
- ✓ Value of Leisure time, clean environment
- ✓ Underground activities

GDP AND ECONOMIC WELL-BEING

GDP is the best single measure of the economic well-being of a society.

GDP per person tells us the income and expenditure of the average person in the economy.

Higher GDP per person usually indicates a higher standard of living (BUT what about income distribution?).

GDP is not a perfect measure of the happiness or quality of life, however.

Ways to Compute GDP - Production Approach

- ✓ Output – intermediate consumption* + taxes on products – subsidies on products

*Goods that are inputs for the production of final goods.

- major drawback of this method is the difficulty to differentiate between intermediate and final goods.

Ways to Compute GDP Income and Value –added Approaches

- ✓ Income Approach – add the sum of all incomes earned (wages, interest, rents, and profits) in producing goods and services
- ✓ Value-added Approach – add the value added at each stage of production of all goods and services

GDP - Expenditure Approach
4 Sectors

Household Sector - Consumption

Business Sector - Investment

Government Sector – Government Purchases

Foreign Sector – Net Exports

$$GDP = C + I + G + (X - M)$$

Consumption

The sum of household spending on:

- ✓ **Durable goods** (goods that are expected to last for more than three years, such as refrigerators, ovens, or cars.)
- ✓ **Nondurable goods** (goods that are not expected to last for more than three years, such as food.)
- ✓ **Services** (intangible items such as lawn care, car repair, and entertainment.)

Investment

The sum of all purchases of:

- ✓ Newly produced capital goods - Business purchases of capital goods, such as machinery and factories
- ✓ Changes in business inventories - Changes in the stock of unsold goods.
- ✓ Purchases of new residential housing

Government Purchases

Includes:

Federal, state, and local government purchases of goods and services and gross investment in highways, bridges, and so on.

Excludes:

Government transfer payments to persons that are not made in return for goods and services currently supplied.

Net Exports

Exports (X) - Total foreign spending on domestic (S.A.) goods

Less

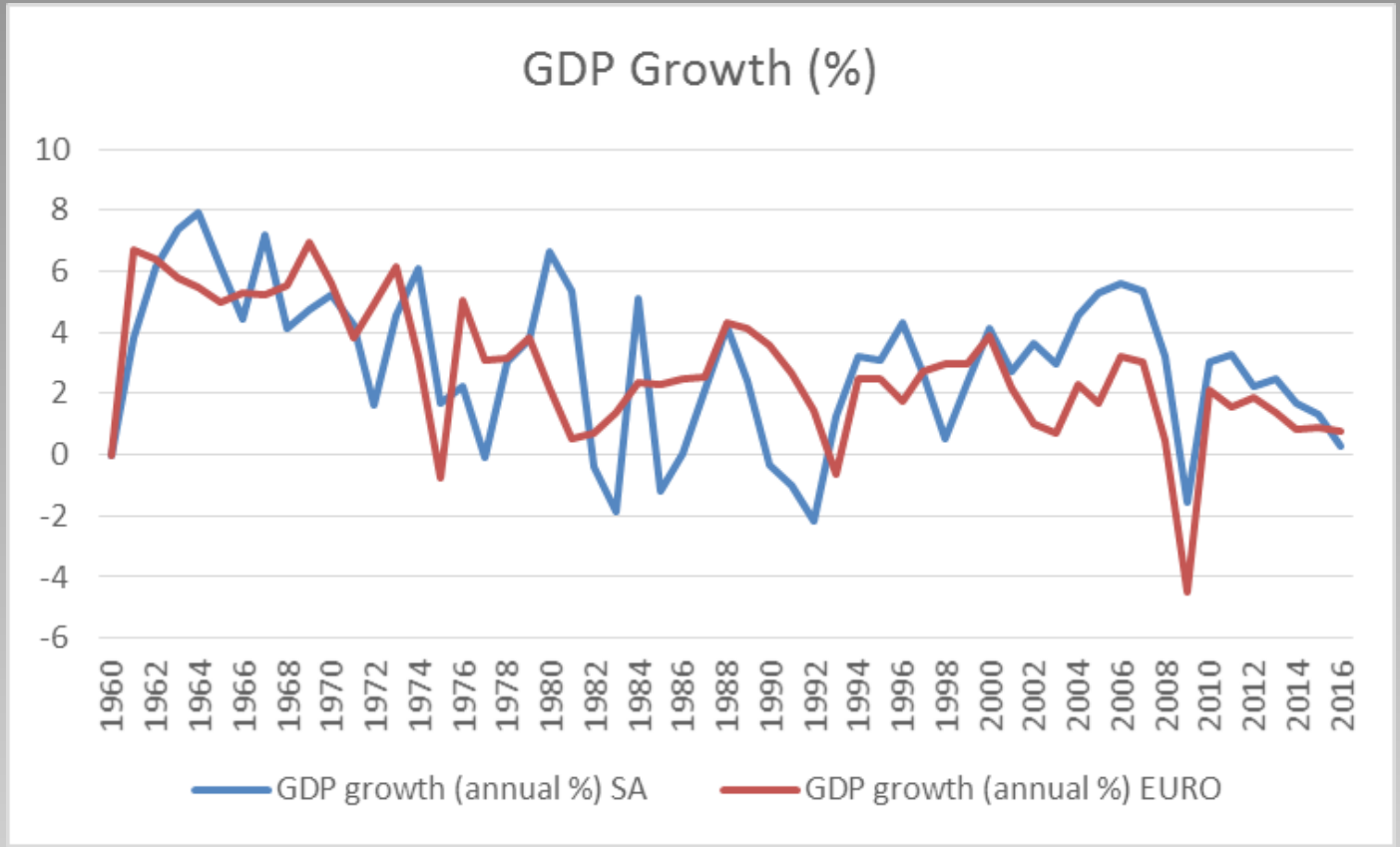
Imports (M) - Total domestic (S.A.) spending on foreign goods

Economic Growth

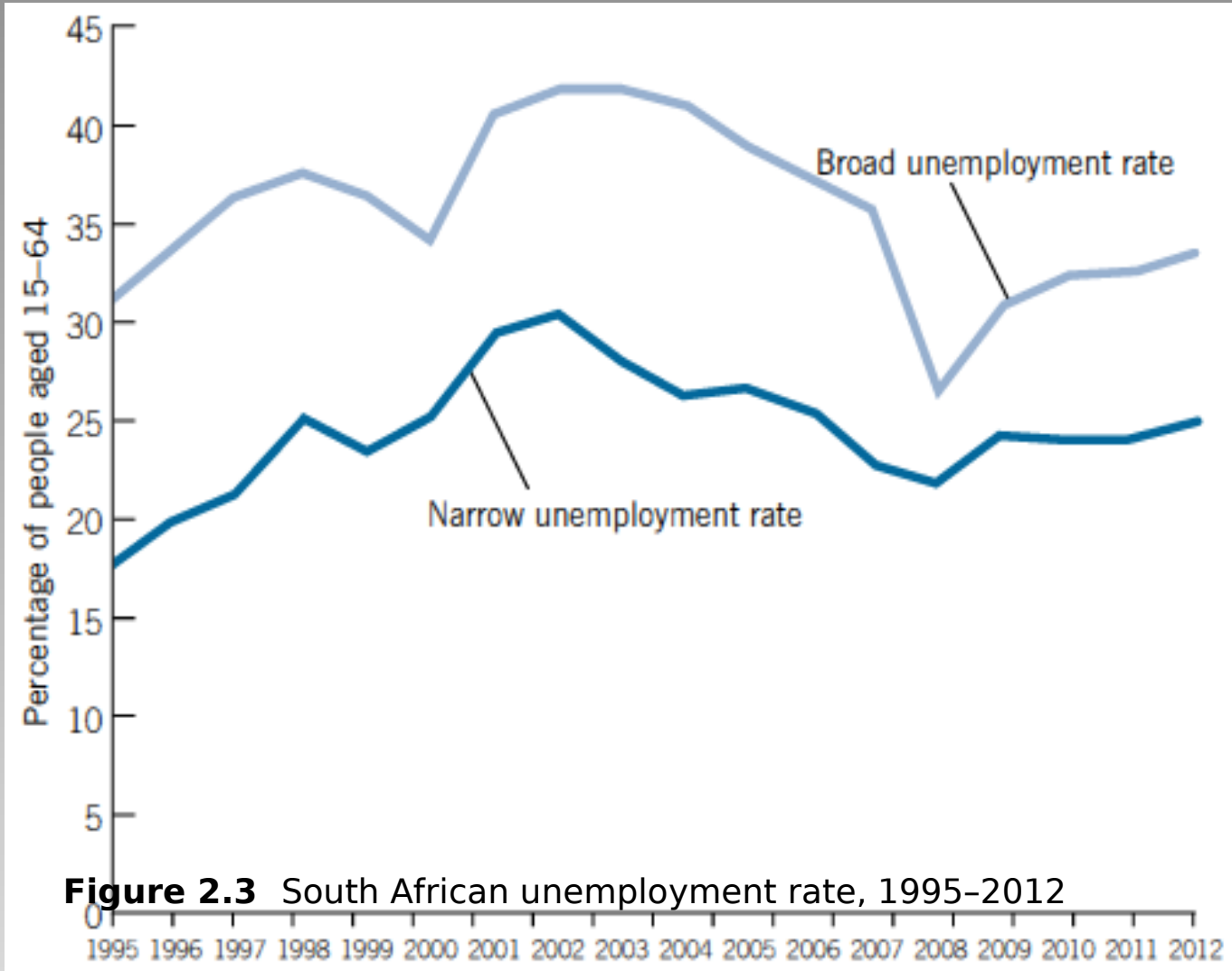
Economic Growth is measured by increases in Real GDP.

$$\text{Percentage change in Real GDP} = \left(\frac{\text{Real GDP}_{\text{later year}} - \text{Real GDP}_{\text{earlier year}}}{\text{Real GDP}_{\text{earlier year}}} \right) \times 100$$

GDP Growth (%)
Source: World Bank



The unemployment rate=number of unemployed/labour force



Source: Statistics South Africa, *Labour force survey* and *Quarterly labour force survey*

Figure 2.3 South African unemployment rate, 1995–2012

Okun's law: The relation between output growth and the change in unemployment:
High output growth --->decrease in unemployment rate

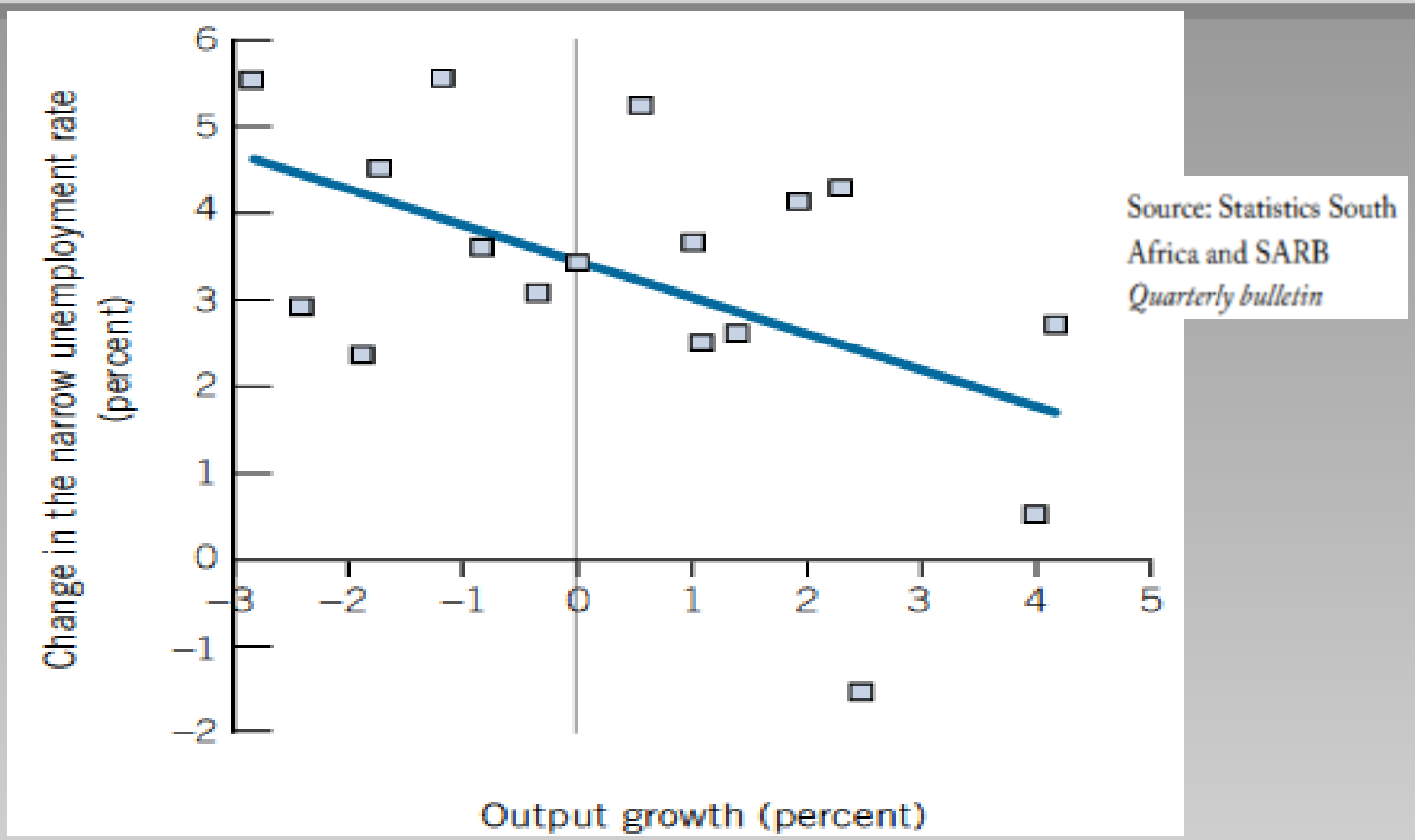
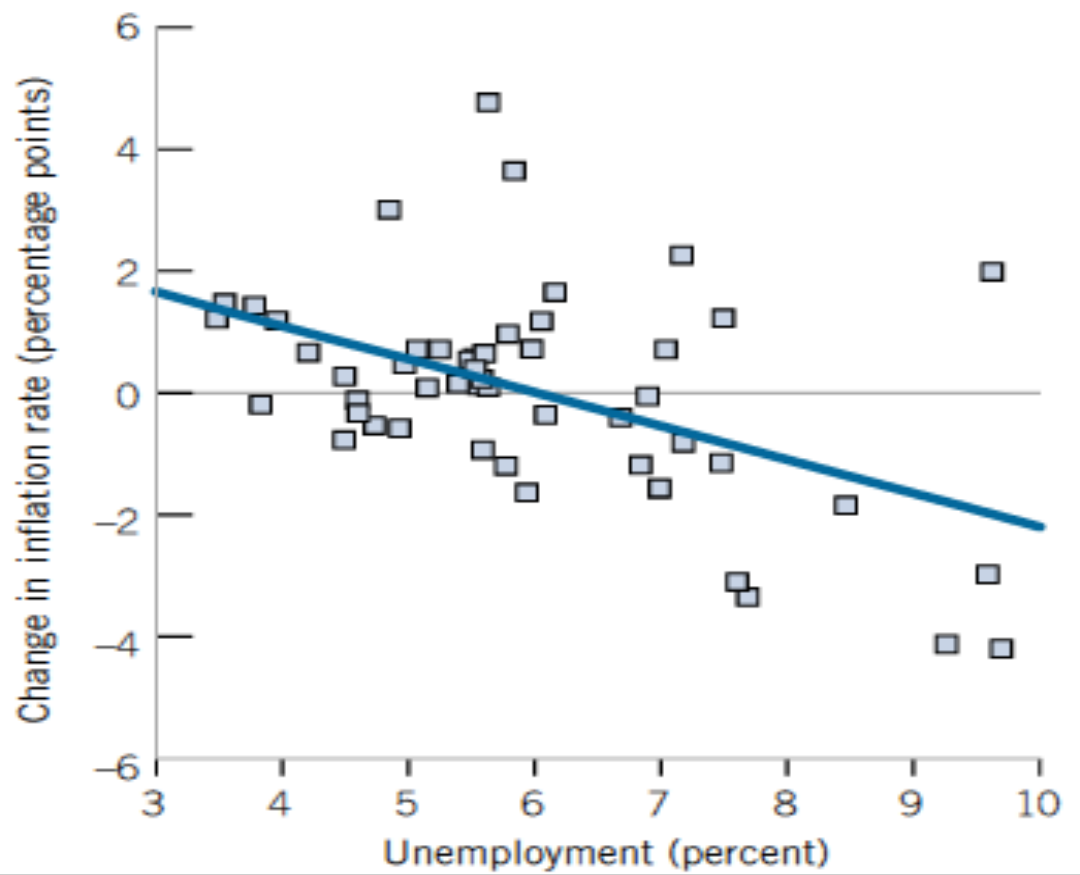


Figure 2.5 Changes in the narrow unemployment rate versus output growth in South Africa, 1995-2012

Phillips curve: The relation between unemployment and inflation:
Low unemployment rate ---> increase in inflation rate

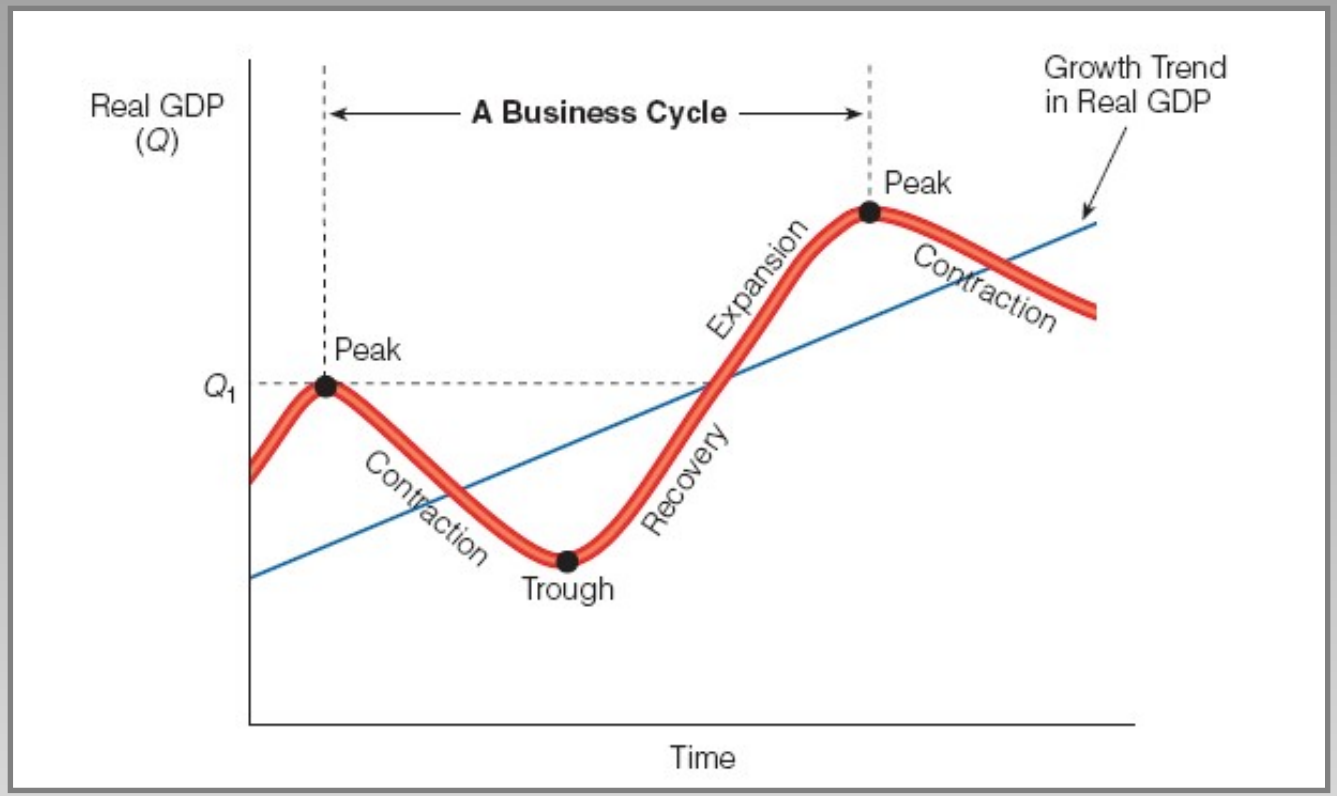


Source: Sources: Series UNRATE, GDPDEF, CPI-AUSCL: *Federal reserve economic database* (*FRED*) http://research.stlouisfed.org/fred2/

Figure 2.6 Changes in the inflation rate versus the unemployment rate in the United States, 1960-2010

Business Cycle

Recurrent swings (up and down) in Real GDP.



Business Cycle

The business cycle is not a regular, predictable, or repeating the cycle.

Though its phases can be defined, its timing is random and, to a large degree, unpredictable.

The ups may be marked by indicators like high growth and low unemployment while the downs are generally defined by low or stagnant growth and high unemployment.

THE PHASES of A BUSINESS CYCLE

Peak: The upper turning point of a business cycle and the point after which expansion turns into contraction.

Contraction: A slowdown in the pace of economic activity defined by low or stagnant growth, high unemployment, and declining prices. It is the period from peak to trough.

Trough: The lowest turning point of a business cycle after which a contraction turns into a recovery.

Recovery: the expansion phase after a trough and until the economy reaches the level of economy activity of the previous peak.

Expansion: A speedup in the pace of economic activity defined by high growth, low unemployment, and increasing prices. The period marked from the recovery point (that corresponds to the previous peak) until the next peak.