Chapter 1

The Financial and Monetary Regime

1.1 Introduction

This book is about a country's financial and monetary regime and the interaction between the regime and the economy. The financial and monetary regime is an important element of the economic and political environment in which we live and work, and some basic knowledge of it is necessary if one wants to consider oneself educated. In fact, anyone not familiar with the basic elements of the financial and monetary regime and its relationship to economic activity should consider him-/herself less than well informed, both as an individual and as a member of society. Lacking knowledge about its basic elements is not only dangerous to your economic health but dangerous to your ability to participate in the political process.

Knowledge of the financial and monetary regime will not guarantee economic success, but it will help you avoid mistakes that will surely limit your lifetime wealth. On a broader level, lacking knowledge about the basic elements of the financial and monetary regime renders you a low-information voter, or "useful idiot", easily manipulated by politicians on either side of the aisle. The term gained new life in late 2014 when it became widely known that one of the major consultants to the 2010 Affordable Care Act claimed, to a group of economists at a conference, that the public's lack of economic understanding and their basic "stupidity" about economics played an important role in enacting a major overhaul of and expanded role of government in the U.S. health system (Bierman, 2014).

This was a dark day for the role of an economist in public policy, but it offers an important lesson. Irrespective of one's view of the Act, the mindset that subterfuge is acceptable for major expansions in government should give everyone pause about government activism. Government, whether to the right or left, does not always have the best interest of the individual in mind and often relies on uninformed voters to pass complex legislation and pursue policies that may not be in the best interests of the country. At a minimum, understanding the basic elements

of the financial and monetary regime will help you manage your wealth and render you a more informed observer of important public policy debates that greatly influence your life and reduce your reliance on "talking heads", who dominate the news media and who, unfortunately, haven't a clue about most of the contents of this book.

1.2 A Country's Financial and Monetary Regime

Every country has a financial and monetary regime consisting of diverse private and public institutions and markets, and in most cases the basic components of the financial and monetary regime and their responsibilities are country-invariant. That is, while the institutional details differ from country to country, determined by their political structure, industrial policy, culture and history, the differences pale in comparison to the similarities of their respective financial and monetary regimes.

In the most general sense, a country's financial and monetary regime consists of three components: the *financial system*; *government financial regulation and supervision*; and the *central bank and central bank policy*.

The *financial system* consists of financial institutions and markets. Banks and insurance companies are examples of financial institutions that obtain funds by offering deposits, insurance policies, retirement programs to the public, and then lend those funds. Financial markets deal in money and capital market instruments such as commercial paper, government bonds, corporate bonds and equities. The financial system has five basic functions in the economy: first, institutionalize the savings-investment process; second, provide for an efficient transfer of funds from lenders to borrowers; third, provide flexibility in response to the changing requirements of different stages of economic growth; fourth, provide stability in the transfer of funds from lenders to borrowers; and, fifth, provide a platform for the conduct of central bank policy that ensures a wide and effective distribution of the impact of central bank policy.

Government regulation and supervision of the financial system are designed to ensure the safety and soundness of the financial system, ensure that the financial system is transparent and ensure that the financial system provides a wide range of financial services to the public. Government regulation and supervision, however, often adopt additional objectives, such as using the financial system as an instrument of industrial policy to support specific sectors of the economy or as an instrument of social policy, ranging from policies to eliminate perceived discrimination based on race, gender, etc. to using the financial system to reduce income inequality by subsidizing credit to specific sectors of the economy, such as housing for low- to moderate-income households.

The *central bank* is a special government institution that conducts *central bank policy* designed to influence money, credit, interest rates and the overall level of

economic activity. Central banks also provide a national payments system by establishing check-clearing facilities, wire transfer facilities and currency. It is one of the most powerful economic institutions in any country. Central banks can also play a role as a financial regulatory and supervisory authority; however, this varies from country to country. The Federal Reserve System, the U.S. central bank, plays a major role in financial regulation and supervision while other central banks, such as the Bank of Japan, play a much smaller role.

At this point, the discussion of the financial and monetary regime is general and meant only to introduce the reader to the concept of a country's financial and monetary regime. The detail will come later. However, the important point to grasp, at this introductory stage, is that every country has a financial and monetary regime; the financial and monetary regime plays an important role in the economy; and, while the institutional details differ from country to country, the basic design and responsibilities are more important than the differences that one might expect.

At this introductory stage, there are four topics to help understand the relationship between the financial and monetary regime and economic activity. First, the placement of the financial and monetary regime in overall economic activity; second, the measures of economic activity that are important indicators of economic welfare for the country; third, the channels through which the financial and monetary regime influences economic activity; and, fourth, the role of the financial and monetary regime in the most significant periods of economic and financial distress in the history of the United States, along with two examples drawn from world history.

1.3 The Real and Financial Sectors of the Economy

How does the financial and monetary regime in general fit into an economist's concept of the economy? Economists conceptualize the economy as consisting of two sectors: the real sector and the financial sector. The real sector focuses on the "real" aspects of economic activity, which manifest themselves in the form of domestic output of goods and services, foreign output of goods and services, consumption, saving, investment, government spending and taxes, employment, productivity, etc. In a general sense, the real sector focuses on a country's output of goods and services, resources that are used to produce the goods and services and the prices the goods and services sell for in the market. The price level at which the goods and services are sold and purchased is not a real variable but a variable that permits us to distinguish between the nominal and real values of many variables in the real sector; for example, we use the price level to distinguish between nominal or money wages and real wages, between nominal output and real output, etc.

In contrast, the financial sector focuses on financial assets and liabilities, lending and borrowing, credit, money and interest rates. The financial sector is no less

"real" than the real sector but, in the most general sense, focuses on the financial aspect of real activity; that is, instead of focusing on saving and investment, the financial sector focuses on lending and borrowing. Instead of focusing on spending and employment, it focuses on the financial resources used to support spending and employment, such as credit and money. The price level plays a role in the financial sector, as it does in the real sector, by distinguishing between nominal and real values of financial variables; for example, nominal and real credit flows, nominal and real money supply, nominal and real interest rates, etc.

One cannot have one sector without the other. The two sectors are closely interrelated and changes in one sector influence the other, as illustrated by first considering how the real sector influences the financial sector:

$$\text{Real Sector} > \text{Financial Sector} \tag{1.1}$$

Assume a given interest rate determined in the financial sector. At this interest rate, the real sector determines the level of output, spending, employment, etc. As part of this process, the real sector determines saving, which, in turn, influences the supply of loanable funds in the financial sector, and spending influences the demand for loanable funds in the financial sector. The real sector thus influences the financial sector (Expression 1.1), but, in turn, the financial sector then feeds back onto the real sector:

$$\text{Financial Sector} > \text{Real Sector} \tag{1.2}$$

The supply of and demand for loanable funds influence the interest rate we started with in the real sector and change the interest rate. The changed interest rate feeds back onto the real sector by influencing output, spending, employment, prices, etc. in the real sector (Expression 1.2). The influence on the real sector then influences the supply of and demand for loanable funds in the financial sector, which in turn changes the interest rate and feeds back onto the real sector (Expression 1.2), which in turn influences the financial sector (Expression 1.1), which in turn influences the real sector (Expression 1.2), and so on.

The country's financial and monetary regime is thus part of the financial sector in the broad sense, which in turn influences the real sector, and so on; thus, the financial and monetary regime is an integral part of the overall economy.

1.4 Measuring Economic Performance

An important premise in this book is that a significant malfunction in the country's financial and monetary regime has an adverse impact on economic activity, and, as such, it is important to be familiar with how economic activity is measured. A country's economic performance can be measured in a variety of ways; however, five variables, most of which are drawn from the real sector, provide a good overview of how well an economy is performing over both the short and long run.

These are: actual real gross domestic product, or real GDP; potential real GDP; the unemployment rate; the natural unemployment rate; and the price level. The price level itself is not a real variable but is an important indicator of economic activity and permits us to distinguish between nominal and real values of economic variables where appropriate. Variables that measure the financial sector, such as interest rates, money, credit, etc., are also important, but ultimately it's the overall level of economic performance represented by these five variables that determines the wealth and growth of the nation.

Actual and potential real GDP: Real GDP is the final output of goods and services produced in the country over a period of time, holding prices constant. Real GDP is measured by the spending on final output measured by consumer spending (C), investment spending (I), government spending (G) and net foreign spending [exports of goods and services (X) minus imports of goods and services (M)]:

$$\text{Real GDP} = C + I + G + (X - M) \tag{1.3}$$

Nominal or market GDP is the final output of goods and services valued at current or market prices and related to real GDP by the following:

$$\text{Real GDP} = (\text{Nominal GDP/Price Index}) \tag{1.4}$$

where the price index is divided by 100 to convert it from a percent to a real number.

While real GDP is what the economy actually produced over a given period of time, the economy's potential real GDP is the level of real output an economy is capable of producing over a period of time utilizing its resources with its given structure and technology. Potential GDP is also referred to as the level of output the economy produces at "full employment"; however, full employment does not mean zero unemployment, because even at "full employment" there is a non-zero level of unemployment determined by the structure of the economy, referred to as natural unemployment.

There is nothing special or desirable about potential GDP in that it can be high or low depending on the country's structure, resource base and technology. Potential GDP is simply a base to measure actual economic performance against its potential, but there is nothing optimal about potential output. An economy might have inefficiencies that limit a country's potential output. Consider the former command economies of China and the Soviet Union that collapsed in the latter part of the twentieth century. Despite resources and access to technology, the inherent inefficiency of these command economies limited their potential levels compared to the West; that is, the government-controlled structure limited the country's potential output at a given level of resources and technology. This is a major reason why these economies collapsed and/or had so much "deadweight loss" they shifted to more open markets and less government planning.

The difference between real and potential GDP indicates whether the economy is operating above or below its potential or natural output path. The GDP gap is

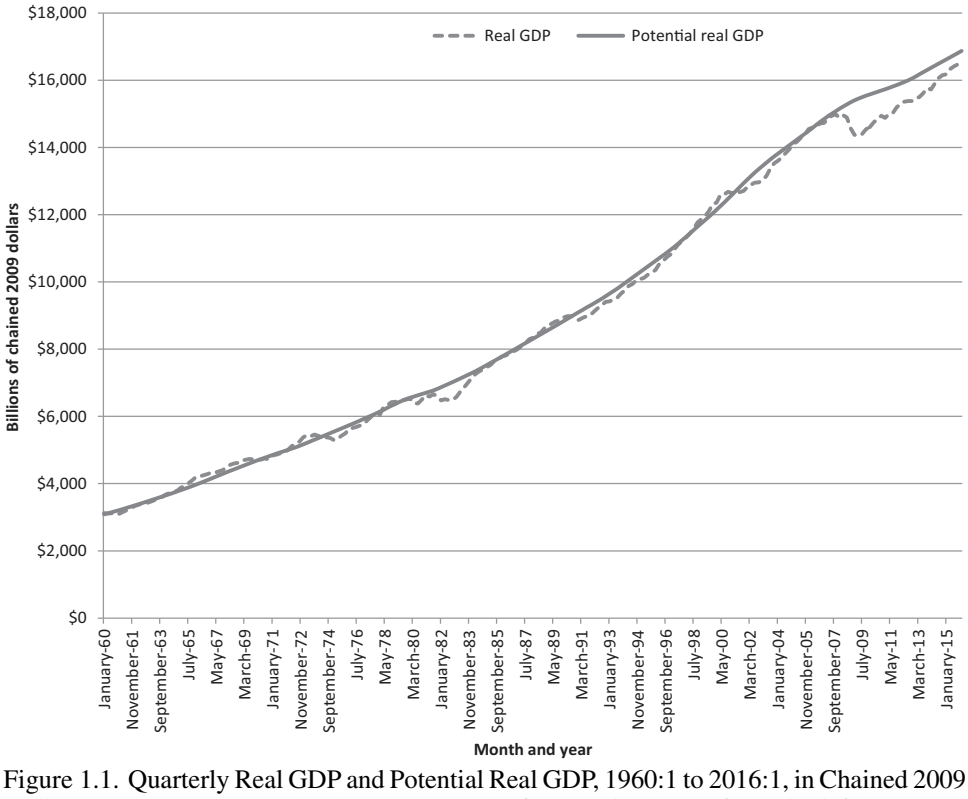

Figure 1.1. Quarterly Real GDP and Potential Real GDP, 1960:1 to 2016:1, in Chained 2009 Dollars. *Source:* FRED, Federal Reserve Bank of St. Louis (https://fred.stlouisfed.org).

the difference between actual real GDP and potential GDP expressed as a ratio of potential GDP:

$$\text{GDP Gap} = (\text{Real GDP} - \text{Potential GDP})/\text{Potential GDP} \tag{1.5}$$

The GDP gap is often expressed in percentage terms by multiplying Expression 1.5 by 100.

Figure 1.1 illustrates U.S. quarterly real GDP and potential GDP from the first quarter of 1960 (1960:1) to the first quarter of 2016 (2016:1), and, while the U.S. economy has grown over time, actual GDP has moved above and below its potential. These swings in economic activity are more apparent in the GDP gap, illustrated in Figure 1.2. The GDP gap exhibits definite cyclical movements, which are called business fluctuations or cycles. To highlight the business cycle movements, Figure 1.2 highlights periods of recession and expansion established by the National Bureau of Economic Research (NBER). The shaded areas in Figure 1.2 are recessions and the non-shaded areas, by definition, are periods of expansion in the U.S. economy. Notice how the GDP gap is negative during recession periods and positive during expansion periods.

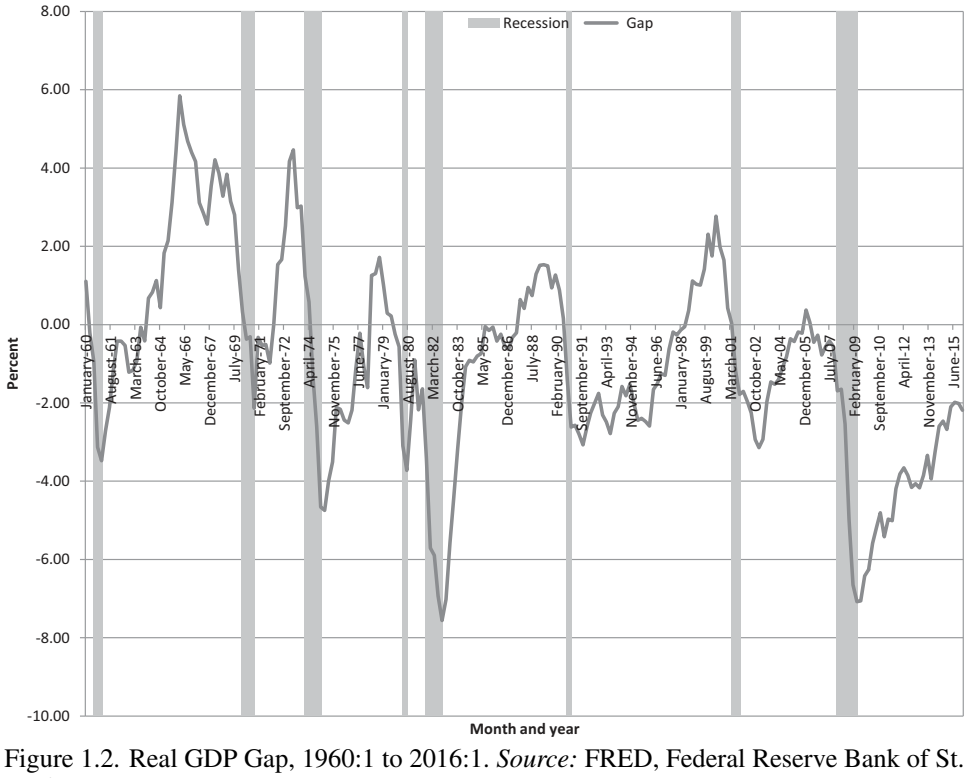

Figure 1.2. Real GDP Gap, 1960:1 to 2016:1. *Source:* FRED, Federal Reserve Bank of St. Louis.

Actual and natural unemployment rate: There are several measures of the unemployment rate. The most frequently used is the civilian unemployment rate, defined as

$$UR = ((LF - E)/LF)^*100 = (NE/LF)^*100 \quad (1.6)$$

where UR is the unemployment rate and LF is the labor force, defined as the sum of those employed (E) and not employed (NE). NE are those in the labor force not working but actively seeking employment. This measure of the unemployment rate is the most frequently cited in the news media; however, it does not accurately measure unemployment at any point in time. Some individuals become discouraged and cease looking for work during periods of labor market distress in an economic decline and, hence, are not included in LF; that is, a reduction in the LF and NE by the same amount lowers the measured unemployment rate and provides an inaccurate picture of the unemployment situation. Consider a case where there are 100 individuals in the labor force (LF = 100) and 90 are working (E = 90) and ten are not employed but actively looking for work (NE = 10). The unemployment rate, UR, is 10 percent; however, if five of the ten job seekers become discouraged and are no longer actively looking for work, NE = 5, E = 90 and LF = 95. The calculated unemployment rate is now 5.3 percent! The same phenomenon can occur in

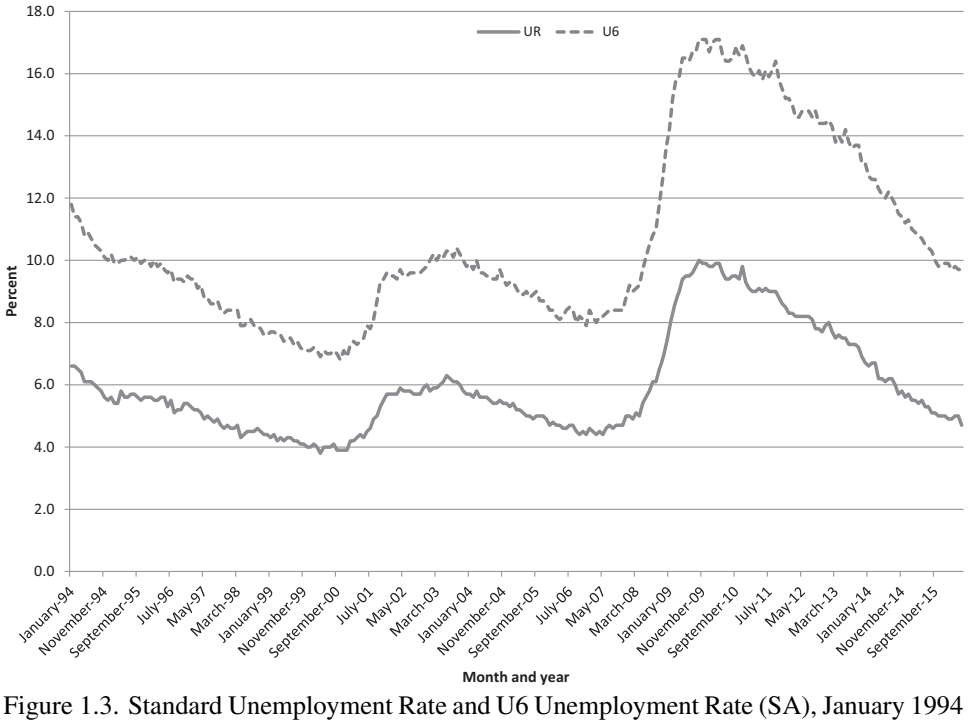

Figure 1.3. Standard Unemployment Rate and U6 Unemployment Rate (SA), January 1994 to May 2016. *Source:* FRED, Federal Reserve Bank of St. Louis.

the opposite direction during the early stages of an economic expansion, as individuals who had been on the sidelines start looking for work, increasing the size of LF so that, at a given E, UR increases.

Aside from discouraged workers, the UR does not accurately measure unemployment, because of the presence of marginal workers and those working part-time who desire to work full-time. Marginal workers are not included in the labor force but, unlike discouraged workers, have looked for a job in the past 12 months. There are workers working part-time who are defined as employed because they worked the threshold of 30 hours per week but would like to work full-time. During contractions the number of marginal and part-time workers who want to work more increases, and during expansions it decreases.

A measure of the broader and more accurate unemployment rate has been published since 1994 and is referred to as the U6 unemployment rate (the standard civilian unemployment rate is referred to as U3). The U6 unemployment rate incorporates discouraged workers, marginal workers and part-time workers who want to work more. Figure 1.3 illustrates the standard unemployment rate, UR, and the U6 unemployment rate from January 1994 through May 2016. On average, U6 exceeds UR by 4.7 percentage points.

Related to the unemployment rate, and similar in concept to potential real GDP, is the natural unemployment rate. The natural unemployment rate is the unemployment rate an economy will operate at when the GDP gap is zero or what amounts to

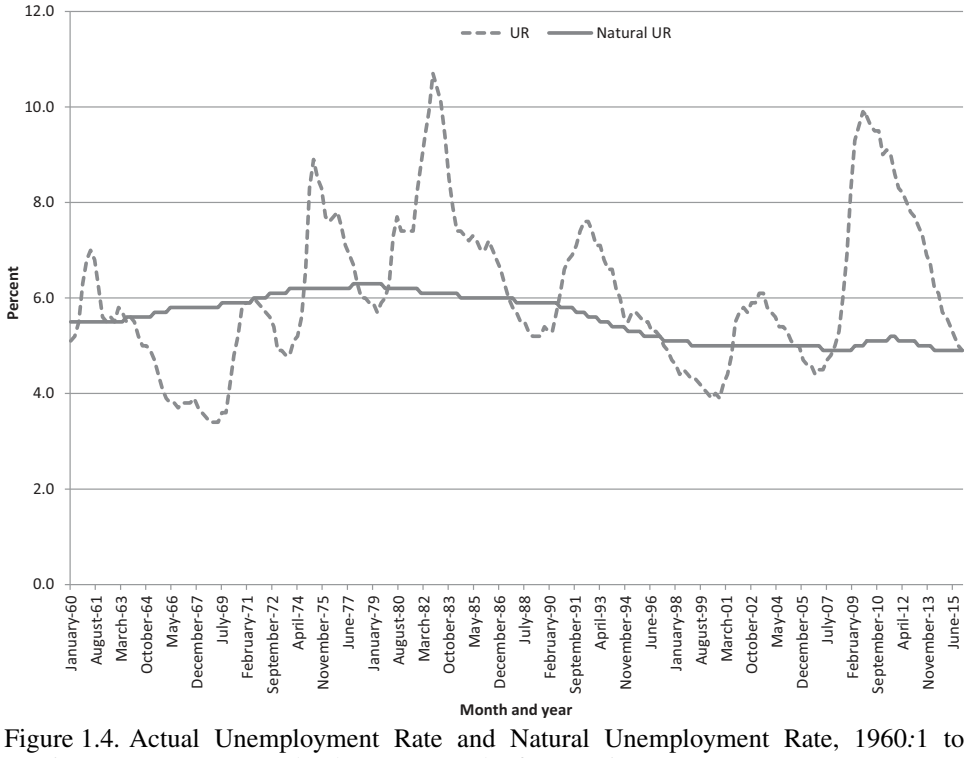

Figure 1.4. Actual Unemployment Rate and Natural Unemployment Rate, 1960:1 to 2016:1. *Source:* FRED, Federal Reserve Bank of St. Louis.

the same thing, when the economy is growing along its potential or natural growth path. Like potential output, the natural unemployment rate is determined by technology and the structure of the economy, and, like potential output, it is a base to determine relative employment. The more efficient the economy and the more technological progress the lower the natural unemployment rate, and the less efficient and the smaller the degree of technological progress the higher the natural unemployment rate.

Another way to think of the natural unemployment rate is to consider three types of unemployment: cyclical, frictional and structural. Cyclical unemployment is due to the swings in the economy and represented by the movement of the measured unemployment rate around the natural unemployment rate. Frictional unemployment is related to the time it takes to move from one position to another. The length of the job search process is influenced by the structure of the economy. Structural unemployment is determined by the structure of the economy, the economy's resource base and technology. The natural unemployment rate can be considered as the sum of frictional and structural unemployment. There are also other ways to define natural unemployment; however, the one used here is reasonable.

Figure 1.4 illustrates the relationship between the actual unemployment rate, UR, and the natural unemployment rate from 1960 to early 2016 on a quarterly basis.

Okun's law: There is an important relationship between actual/potential real GDP and actual/natural unemployment, since the differences with each represent departures from long-run or potential performance levels of the economy. Okun's law, named after an economic advisor to President Kennedy in the 1960s, is a useful expression of the relationship:

$$\text{GDP Gap} = -\beta(\text{Actual Unemployment Rate} - \text{Natural Unemployment Rate}) \tag{1.7}$$

where β is a coefficient that defines the magnitude of the relationship between the two sides of Expression 1.7. The left-hand side of Expression 1.7 is the gap between actual and potential real GDP while the right-hand side is referred to as the employment gap between the actual and natural unemployment rate.

Economists have attempted to estimate the coefficient, and there is some debate as to whether the simple relationship in Expression 1.7 is even capable of estimation; however, these issues are not important for the purposes of this discussion. Okun's law is useful for understanding a country's economic performance in terms of the human cost measured by unemployment caused by departures of actual GDP from its potential; the importance of structural and technology aspects of the economy; the importance of the structure of the financial and monetary regime; and for understanding central bank policy.

Holding the coefficient β constant, there are three possible relationships between the four variables according to Okun's law:

Actual GDP	>	Potential GDP (Positive Gap), then Actual Unemployment Rate < Natural Unemployment Rate
Actual GDP	<	Potential GDP (Negative Gap), then Actual Unemployment Rate > Natural Unemployment Rate
Actual GDP	=	Potential GDP (Zero Gap), then Actual Unemployment Rate = Natural Unemployment Rate

The price level: There are four important measures of the price level. The consumer price index (CPI) represents prices paid for goods and services by the urban household. The producer price index (PPI) represents prices of commodities used in the production process. The GDP deflator is the price index used to convert nominal GDP to real GDP (Expression 1.4). The personal consumption expenditure price index (PCE) is similar to the CPI but a somewhat broader measure of consumer prices used by the Federal Reserve. Of the four measures of the price level, the PCE is the least utilized; however, since it is used by the Federal Reserve, the PCE needs to be included as a measure of the price level.

A price index is a method of measuring the average behavior of a number of prices of items weighted by the importance of the item over time with reference to a base period; that is, the base year is set to 100 and the index is calculated