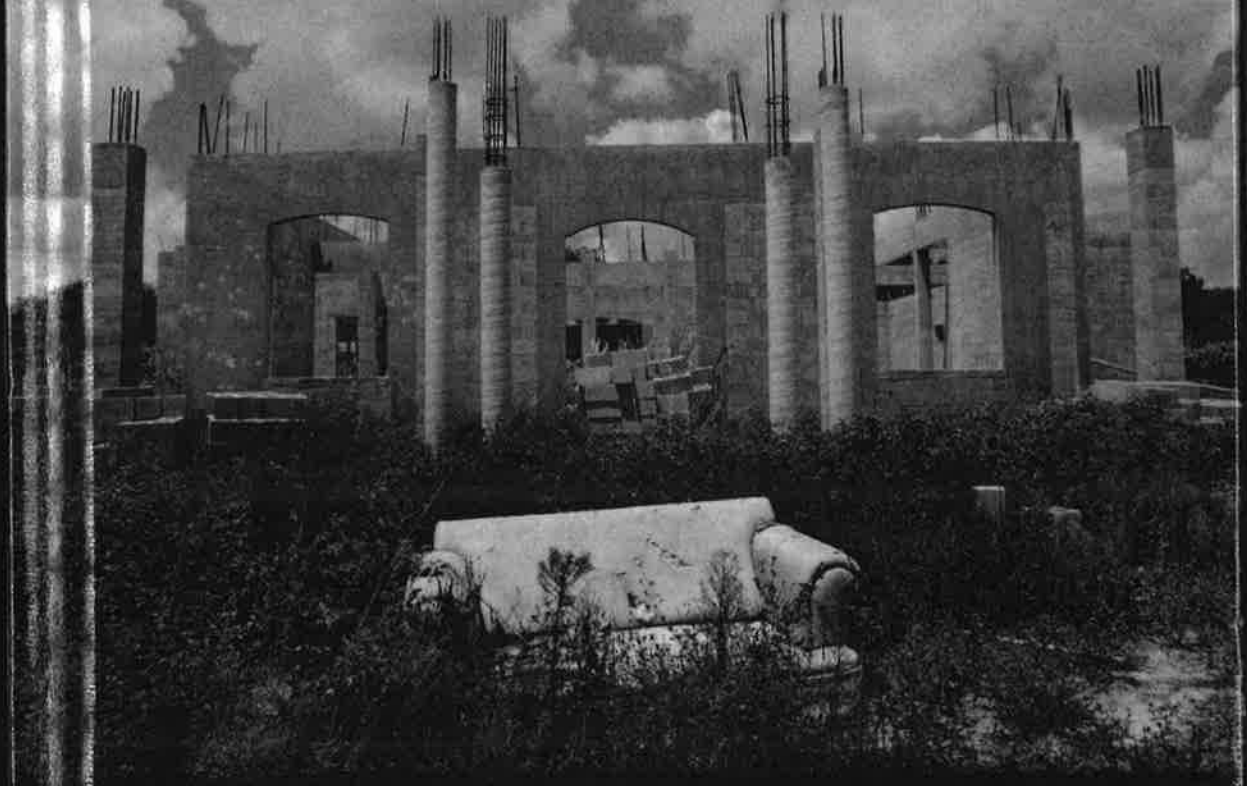
BUSINESS CYCLE ECONOMICS



UNDERSTANDING RECESSIONS AND DEPRESSIONS FROM BOOM TO BUST

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ONE

Why Study Business Cycles?

INTRODUCTION

Consistent with the popular conception of economics as the "dismal science," economists secretly long for recessions and depressions. Not in any real or concrete sense, for as a general rule economists are not sadists and do not enjoy seeing people suffer through the kinds of hardships experienced by countries that are going through an economic crisis. However, when it comes to the state of economic knowledge, nothing improves economists' understanding of how markets and macroeconomies work more than an economic downturn. The most obvious analogy is to an auto mechanic who learns his craft not by working on cars that are running well but by getting under the hood of autos that have broken down. Much the same can be said of economists. Recessions and depressions are essentially the only substitute that macroeconomists have for an experiment; when markets break down so completely, the underpinnings of what is actually driving the operations of fully functioning economies become more readily apparent. Economic contractions are an opportunity for economists to pop open the hood and take a look inside the engine of modern economic systems.

The best example of the learning opportunities afforded by economic crises is the Great Depression, an unprecedented economic downturn of such a massive scale that it turned the whole discipline of economics on its ear. The Great Depression played a crucial role in the development of macroeconomics as a separate field of study from microeconomics, and also in the development of Keynesian economics, the most fundamental

change in the way that economists think about the world since 1776 when Adam Smith published *The Wealth of Nations*. Keynesian economics in turn spawned some of the most radical developments in public policy since the Industrial Revolution and provided the theoretical foundation for the modern welfare state. It also provided the impetus for conservative critiques of the expanded role of government, from Friedrich Hayek to Milton Friedman. Of course, the global financial crisis that occurred in 2008 led many to wonder whether we were going to suffer through a second Great Depression and also whether time-tested policies to combat business cycles need to be rethought.

This book will provide in-depth analyses of the following three questions:

1. Why are economies subject to periods of negative output growth (recessions)?
2. How do you explain severe economic contractions (depressions)?
3. What government policies can be used to moderate and prevent business cycles, or is government policy the cause of, not the solution to, business cycles?

As mentioned above, many of the key developments in macroeconomic theory both before and after Keynes have centered on these questions. The big problem, unfortunately, is that after more than 200 years of debate there is still no general agreement about what causes recessions and depressions. There continue to be multiple competing models of business cycles used among economists. In fact, there is often a disconnect between the models used by academics and those used by private-sector economists. This debate over the root causes of business cycles continues to be a key question in the development of macroeconomic thought. The goal of this book is not to put an end to this debate by providing a definitive answer on why business cycles exist, because there is no single answer at this point and business cycles are complex enough that there never will be. Rather, this book aims to understand all of the competing theories and factors in the debate so that the reader understands the full context in which these debates take place.

For an example of how disagreements persist in macroeconomics, consider the United States' recession of 1990–1991. Some economists have argued that it was caused by an aggregate demand downturn resulting from a reduction in consumer confidence during the Gulf War or by a decrease in the money supply by the Federal Reserve. Others have argued

that it was caused by a decrease in aggregate supply brought about by an increase in the price of oil during the war or the delayed effects of tax increases and new government regulations adopted in the late 1980s. To this day, there is no single cause that is generally agreed upon among economists.

Another example of the discord among economists is evident in their handling of the East Asian crisis from 1997 to 1999, at that time the most significant international economic crisis since the Great Depression. Economists did not forecast the East Asian crisis. Most disturbingly, there was no agreement at the time among economists about which policies should be adopted to best deal with the crisis. In fact, the crisis occurred in countries that were previously thought to be model economies that were fundamentally sound.

Then, of course, there is the 2008 global financial crisis. Not only did most economists fail to see it coming, but many refused to believe their eyes as it happened. Once again, economists as a group had no clear and unified set of policies to deal with the downturn, although, in the end, influential policy makers who were well-versed in business cycle theory did piece together solutions (in a somewhat less than timely manner) that did contribute to the recovery. Clearly, there is still much work to be done before economists can come to any sort of consensus about the causes of recessions and depressions and provide clear prescriptions for how to deal with them once they begin.

Given the obvious difficulties inherent in this topic, in the past many people have asked: Why study business cycles if, in the long run, they all average out? This is a question that is only asked by someone who has not lived through a major economic contraction—very few of us today. Business cycles are extremely costly to a society, not just in terms of lost income but in terms of disrupted lives—higher suicide and homicide rates, higher poverty levels, and higher divorce rates amongst other measures of well-being—that have economic, social, and personal consequences that persist for a very long time. During the global financial crisis, the most vulnerable groups in American society—minorities, the poor, the less educated—were disproportionally impacted, worsening economic inequality. Economic uncertainty caused birth rates in the United States to drop to historic lows. Jobs lost during recessions led to a deterioration of labor skills that has had long-lasting effects on productivity and unemployment. Whole communities, from new suburbs in Florida to the entire city of Detroit, were devastated and, in some cases, have disappeared. Keynes's (1923) response to the question posed at the beginning of this paragraph is one of the classic retorts in all of economics. "Now 'in the

long run' this is probably true. . . . But this long run is a misleading guide to current affairs. In the long run we are all dead. Economists set themselves too easy, too useless a task if in tempestuous seasons they can only tell us that when the storm is long past the ocean is flat again."

OUTLINE OF THE BOOK

This book is divided into five sections.

Part I: The Facts of Business Cycles. Chapter 2 describes business cycle data both quantitatively and qualitatively. This chapter provides a summary discussion of the duration and depth of business cycles, both in the United States and internationally, with a focus on seven basic facts about business cycles. In addition, the behavior of the components of gross domestic product (GDP) over the business cycle is also described, including a discussion of how economists separate the cyclical components of data from trend. Finally, this chapter summarizes the cyclical behavior of other important macroeconomic time series variables, including whether each variable is a reliably leading, coincident, or lagging indicator of turning points in a business cycle.

Part II: Macroeconomic Theories of Business Cycles. The evolution of thought on the nature of business cycles also traces the evolution of a large part of modern macroeconomic theory. In order to comprehend macroeconomics as it is practiced today and where it is headed in the future, it is crucial to understand the theoretical ground already covered and the economic events that precipitated changes in the way that we view macroeconomic fluctuations.

Part II presents seven primary models: the classical model (Chapter 3), the Keynesian model (Chapter 4), Austrian economics (Chapter 5), the monetarist model (Chapter 6), the rational expectations model (Chapter 7), the real business cycle model (Chapter 8), and new Keynesian models (Chapter 9). For each of these models, the relevant chapter discusses (1) the historical context in which the model was developed, (2) the basic theory behind the model, which includes a description of how the model explains business cycles, (3) a discussion of the policy implications of the model, and (4) a look at whether existing empirical research supports the model's principle implications. Each of these models is discussed in a rigorous but nontechnical narrative with an emphasis on making the discussion accessible to the general reader or undergraduate student.

To briefly preview our discussions from this section: the study of modern business cycles began in the 1930s with Keynesian economics,

which focused on the macroeconomic effects of market failure. Before Keynes, early business cycle theories (including the classical model) failed to make a clear distinction between the behavior of individuals and the behavior of economies as a whole. However, these early theories did highlight many important characteristics of economic contractions. After a neoclassical resurgence during the 1970s and 1980s, business cycle research has returned to the study of market failure. However, the newest business cycle models have greatly improved upon the microeconomic explanations of why markets often do not work efficiently and the specific role that various forms of imperfect competition play in output fluctuations. While these new models are more intuitively appealing and are more consistent with the empirical data, they have not yet improved the ability of economists to forecast the future or to preemptively act in order to prevent recessions and depressions.

Every chapter in this book provides suggested readings that can be used to supplement this text. The purpose of these suggested readings is fourfold. First, they offer readers a chance to expose themselves to some of the seminal, but more accessible, research in the business cycle field. Second, they allow readers to explore the insights of groundbreaking economists in their own words in order to better understand the important contributions these authors made. Third, they give readers an idea about how economists talk to each other, as difficult as it may be to interpret these discussions at times. Finally, these readings give readers the benefit of working through a piece of research and all of its difficulties by themselves as opposed to having material presented to them in easily digestible ways. Each of these readings has been chosen because it is written at an appropriate level for an advanced undergraduate student and is either an important article in the business cycle field or is written by significant authors in the field who are providing an overview of an area of research.

Part III: Financial Instability and Forecasting. As evidenced by the 2008 global financial crisis and the ongoing Euro-zone debt crisis, financial crises continue to be one of the defining aspects of modern economics and are associated with the largest recessions and depressions. This part of the book focuses on explanations of business cycles that focus on the financial sector as either the cause or the propagating mechanism for economic volatility. Chapter 10 examines a number of models that emphasize financial market failures, fluctuating financial fundamentals, and changes in the supply of credit as the driving force behind business cycles. This chapter includes a review of the debt-deflation theory of Irving Fisher, the financial instability hypothesis of Hyman Minsky, the financial

accelerator model of Bernanke and Gertler, and a model of credit rationing developed by Stiglitz and Weiss.

Next, our attention in Chapter 11 turns to behavioral economics and its role in driving asset bubbles and banking crises. Behavioral economics refers to the use of psychological research to critically examine the economic decision making of individuals in order to determine the extent to which these decisions are "predictably irrational" and the economic implications when this is the case. This chapter weighs alternative theories about whether banking crises and asset bubbles are driven by beliefs or fundamentals. This chapter also examines the costs of banking crises and asset bubbles and the potential role of monetary policy in preemptively preventing, or at least minimizing, their impact.

This part of the book concludes with Chapter 12, which provides an overview of the four primary macroeconomic forecasting techniques—macroeconomic and market-based indicators, econometric models, structural models, and dynamic stochastic general equilibrium models—and their generally poor record in forecasting actual business cycles. Given the emphasis on beliefs and behavior in the discussions on financial crises, it is legitimate to question is whether reliable macroeconomic forecasting is ever possible. This chapter concludes with a discussion of this question, including a discussion of the nature of economic uncertainty and the extent to which macroeconomic behavior is inherently predictable (i.e., characterized by statistical uncertainty) or unpredictable (i.e., characterized by fundamental uncertainty).

Part IV: Business Cycles in the United States. The first chapter in this section, Chapter 13, deals with the Great Depression, primarily from the United States' standpoint but also its international ramifications. While many possible factors will be examined as potential causes of the Great Depression, the primary explanation in this chapter centers on four facts. First, all countries that experienced a depression were on the gold standard and maintained fixed exchange rates. Second, there were severe balance-of-payment inequities in place when the gold standard was restored after World War I. Third, asymmetries in the way the gold standard was administered made it unstable. Finally, a massive international deflation was the result of a strict adherence to the gold standard and naïve macroeconomic policy. This chapter explains in detail the theory behind why deflation is so costly, especially in terms of its effects on financial intermediation. It also compares this explanation with traditional Keynesian, Austrian, and monetarist explanations of the Great Depression.

Chapter 14 deals with postwar business cycles in the United States up through the mid-2000s. After a brief case study of each of these business

cycles is a discussion of how postwar business cycles differ from pre–Great Depression business cycles. The basic conclusion of this section is that while there have not been any dramatic changes, postwar business cycles have occurred less frequently and have been slightly shorter than prewar business cycles. Finally, this chapter discusses the reasons for this moderation, including various forms of structural change in the economy as well as the increased role of macroeconomic stabilization policy in mitigating (or magnifying) business cycles.

Part V: Modern International Recessions and Depressions. This section will investigate four recent international economic crises. First, the East Asian crisis is discussed in Chapter 15. After a brief description of other recent currency crises (Mexico in 1994, Latin America in the 1980s, and the European Monetary System in 1992), the East Asian crisis is compared to these previous crises. The critical difference is that the East Asian crisis was actually two distinct crises in that it was a currency crisis that occurred in conjunction with a banking crisis. The large devaluations that resulted from the currency crisis led to complete collapses of fragile banking systems throughout the region, resulting in capital flight, a massive reduction in financial intermediation, and a severe decline in economic activity. Chapter 15 describes this process is in detail. This chapter also investigates the culpability of foreign investors and the International Monetary Fund (IMF) in precipitating the crisis. Finally, recommendations for economic reform in East Asia are discussed and comparisons made between the Great Depression and the East Asian crisis.

Chapter 16 examines the decade-long recession in Japan that began in the early 1990s. The Japanese economy, including the nature of its inefficient markets and fragile banking system, is characterized. This is followed by an examination of the reasons for deflation in Japan and the failure behind macroeconomic stabilization to end this recession. This chapter concludes with a description of economic policy reforms that the Japanese have been reluctant to enact in order to fully recover from this extended recession.

The next chapter, Chapter 17, turns its attention to sovereign debt crisis, in particular the Euro-zone debt crisis. It examines the causes and consequences of sovereign debt crises and looks at the reasons behind their frequent occurrence in history. This is followed by a detailed look at the Euro-zone debt crisis that began in Ireland and Greece in 2009 before spreading through multiple southern European countries. An evaluation of the claims that a similar debt crisis is building in the United States completes the chapter.

The final case study in this section of the book is included in Chapter 18, which examines the 2008 global financial crisis. This crisis became the largest economic crisis to strike developed nations since the

Great Depression. This chapter examines the buildup to the crisis, which was primarily driven by three factors: (1) financial innovation in the form of securitized home mortgages and financial derivatives, (2) the trade and savings imbalances between China and the United States that fueled excessive debt and asset bubbles, and (3) a misunderstanding of the nature of financial risk within our increasingly globalized financial markets. These factors fueled a lending boom in the Unites States that set the stage for housing and bond bubbles and a banking crisis that had unexpectedly large consequences. Next, the timeline of the events precipitating the crisis in the United States are discussed, and the U.S. government's frequently chaotic and experimental policy responses to the crisis are examined. While macroeconomic policy was largely effective, it could not prevent a long-lasting recession and one of the slowest postrecession recoveries in U.S. history; some possible reasons for this will be evaluated. Many other countries outside of the United States were also severely impacted. While Europe was an obvious victim, the tiny economy of Iceland might have been the most severely impacted and is discussed here as an excellent case study of the dangers of modern unregulated global finance. This chapter concludes with some lessons learned and an evaluation of the reforms that have been implemented as a result of the crisis.

The main conclusion that can be gained from these international case studies is that the study of major international contractions is a somewhat different topic than the study of business cycles in general. There are three major distinctions between recessions and major contractions/depressions (apart from just their size). First, major contractions/depressions tend to be international in nature, not primarily isolated to just one country. Second, major contractions/depressions tend to involve the collapse of financial markets in general and the banking industry in particular. Third, major contractions/depressions almost always begin with some sort of macroeconomic policy mistake in the form of runaway monetary and fiscal policy, misaligned exchange rates, deregulation of financial markets, or all of the above. The Great Depression, the East Asian crisis, the Great Recession in Japan, the Euro-zone crisis, and the 2008 global financial crisis each followed this general pattern. Business cycle research has yet to develop a unified model that adequately incorporates each of these factors.

The final chapter, Chapter 19, is a brief conclusion in which the history of economic theory on business cycles is reviewed and the principle insights that have been gained from the study of business cycles are discussed. This is followed by a list of questions which economists are still struggling to provide answers to—questions that serve as signposts to guide future economic research on business cycles.

TWO

Describing Business Cycles

INTRODUCTION

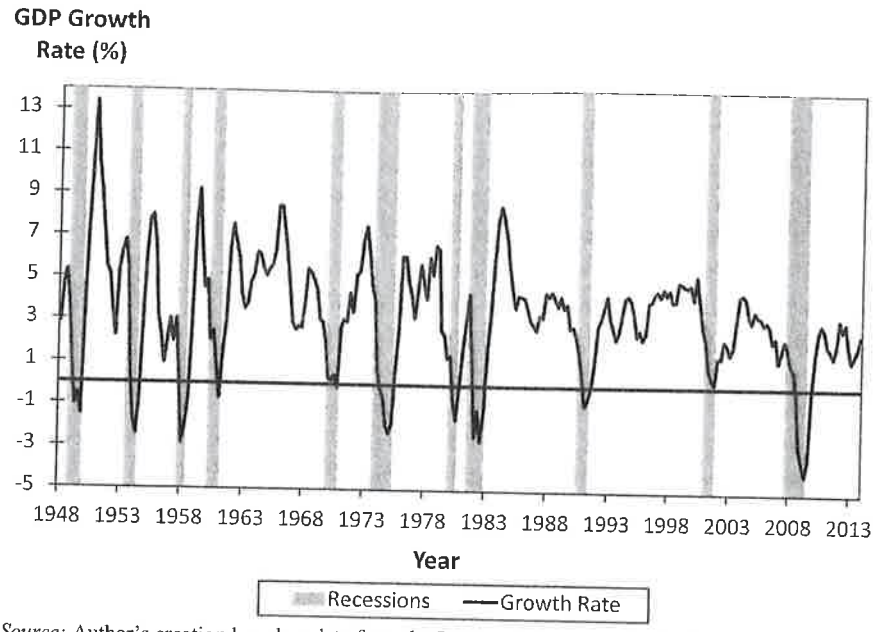
It is important to have a good grasp on the empirical regularities (and irregularities) of key macroeconomic variables that fluctuate as the economy contracts and expands. Understanding the data of business cycles will provide some basic empirical facts that we can then use to evaluate the competing theories that have attempted to provide explanations to the three primary questions posed in this book: (1) Why are economies subject to periods of negative output growth (recessions)? (2) How do you explain severe economic contractions (depressions)? (3) What government policies can be used to moderate and prevent business cycles, or is government policy the cause of, not the solution to, business cycles?

The first purpose of this chapter is to describe the quantitative aspects of business cycles, meaning the depth and duration of both individual and average economic contractions and expansions. The second purpose of this chapter is to describe the qualitative aspects of business cycles, meaning how different macroeconomic variables move in relation to each other during contractions and expansions. While the focus in this discussion is primarily on the United States, international business cycle data will also be examined.

BASIC DEFINITIONS

Economists from the Business Cycle Dating Committee of the National Bureau of Economic Research (NBER), the preeminent economic research organization in the United States, date the beginning and end of

Figure 2.1 Real GDP growth in the United States, recessions noted.



Source: Author's creation based on data from the Bureau of Economic Analysis available at https://www.bea.gov/national/xls/gdplev.xls, and the National Bureau of Economic Research available at http://www.nber.org/cycles.html.

economic contractions and expansions in the United States. To do this, the NBER needs a working definition of what constitutes a recession and an expansion. The NBER defines a *recession* as when "a significant decline in economic activity spreads across the economy and can last from a few months to more than a year." The *peak of an expansion* is the point in time at which the level of GDP reaches its maximum before it starts to decline. Thus, the peak of an expansion dates the beginning of a recession. Likewise, the *trough of a recession* is the point in time at which GDP falls to its lowest level before it begins to rise again, meaning that a trough dates the beginning of an expansion. Figure 2.1 graphs real GDP growth rates in the United States between 1948 and 2013, where the shaded areas denote the period of time during which the economy was in recession (i.e., the period between the peak and the trough of the business cycle).

Table 2.1 provides a complete list of business cycles (measured from peak to peak) in the United States since dating began in 1854. Looking at recent business cycle episodes, there have been 11 postwar recessions in the United States. The last recession was associated with the global

Table 2.1 Timing and depth of U.S. business cycles.

		Duration (in months) of			
Trough	Peak	Contraction	Expansion	Cycle (trough to trough)	Decline in GDP (peak to trough)
	12/1854	—	—	—	—
06/1857	12/1858	18	30	48	—
10/1860	06/1861	8	22	30	—
04/1865	12/1867	32	46	78	—
06/1869	12/1870	18	18	36	—
10/1873	03/1879	65	34	99	—
03/1882	05/1885	38	36	74	—
03/1887	04/1888	13	22	35	—
07/1890	05/1891	10	27	37	—
01/1893	06/1894	17	20	37	—
12/1895	06/1897	18	18	36	—
06/1899	12/1900	18	24	42	—
09/1902	08/1904	23	21	44	—
05/1907	06/1908	13	33	46	—
01/1910	01/1912	24	19	43	—
01/1913	12/1914	23	12	35	—
08/1918	03/1919	7	44	51	—
01/1920	07/1921	18	10	28	—
05/1923	07/1924	14	22	36	—
10/1926	11/1927	13	27	40	—
08/1929	03/1933	43	21	64	−26.7%
05/1937	06/1938	13	50	63	−18.2%
02/1945	10/1945	8	80	88	−12.7%
11/1948	10/1949	11	37	48	−1.7%
07/1953	05/1954	10	45	55	−2.6%
08/1957	04/1958	8	39	47	−3.7%
04/1960	02/1961	10	24	34	−1.6%
12/1969	11/1970	11	106	117	−0.6%
11/1973	03/1975	16	36	52	−3.2%
01/1980	07/1980	6	58	64	−2.2%
07/1981	11/1982	16	12	28	−2.7%
07/1990	03/1991	8	92	100	−1.4%
03/2001	11/2001	8	120	128	−0.3%
12/2007	6/2009	18	73	91	−5.1%

(*continued*)

Table 2.1 (continued)

Trough	Peak	Duration (in months) of Contraction	Expansion	Cycle (trough to trough)	Decline in GDP (peak to trough)
Averages					
1854–2001 (32 cycles)		17	38	55	
1854–1919 (16 cycles)		22	27	48	
1919–1945 (6 cycles)		18	35	53	–19.2%
1945–2009 (11 cycles)		11	58	69	–2.3%

Source: Adapted from National Bureau of Economic Research available at http://www.nber.org/cycles.html and the Bureau of Economic Analysis available at https://www.bea.gov/national/xls/gdplev.xls.

financial crisis, lasting from December 2007 until June 2009. Before this, the previous recession began in March 2001 and ended in November of that same year, making it one of the shortest recessions in American history. Preceding the 2001 recession, the United States experienced the longest expansion in its history. This expansion lasted more than 10 years, from March 1991 to April 2001.

The NBER's definition of what constitutes a recession has been criticized along a number of lines. One problem with this definition is that a lag exists between getting data and making decisions. Output must be falling for at least "a few months" before the NBER will declare a recession. In practice, the economy has typically been in a recession for at least six months before it has been officially recognized as one by the NBER. For example, the recession that began in the United States in December 2007 was actually not recognized as such by the NBER until December 2008, a full year after it began. This recognition lag might delay a policy response until it is too late to be effective.

Another criticism of this definition is that it ignores *growth recessions*, or periods of positive but below-average growth. The problem here is that a period of growth that is below *trend*, or the long-run average GDP growth rate, is generally regarded as a recession by the public but not technically considered a recession by economists. For example, economists timed the end of the global financial crisis as occurring in June 2009, but the vast majority of the public considered the United States to be in recession until well into 2012 because real GDP growth, while positive, was weaker than trend.

Despite these criticisms, these definitions of recessions, peaks, and troughs are the ones that economists have chosen to work with. Lags in getting and interpreting data are impossible to avoid given the difficulties

in collecting economic data. Defining a growth recession is more difficult than defining a recession using the NBER's definition. This is because the definition of a growth recession relies on measuring growth relative to its trend, and measuring trend output growth is imprecise if the trend is not constant over time (as we will discuss in more detail in a moment). As a result, the NBER's definitions of recessions, expansions, troughs, and peaks will be the working definitions used throughout this book.

There is no formal definition of a depression, although an old joke is that a recession is when your neighbor loses their job, a depression is when you lose yours. An informal definition is an economic contraction in which output falls by more than 10 percent. During the era for which we have reliable economic data, the only depression that has occurred in the United States was the Great Depression of the 1930s.

A few additional definitions are extremely useful in characterizing the qualitative relationships between macroeconomic variables over the business cycle. Economists are always looking for macroeconomic variables that can help predict the peaks and troughs of business cycles. A *leading indicator* is a variable that peaks (troughs) before GDP peaks (troughs). For obvious reasons, economists closely watch leading indicators when trying to forecast business cycles. A *lagging indicator* is a variable that peaks (troughs) after GDP peaks (troughs). A *coincident indicator* is one that peaks or troughs at the same time as GDP.

One final set of definitions is extremely useful. A variable is referred to as *procyclical* if its deviations from trend have a positive correlation with deviations in GDP trend; in other words, when GDP is below trend, a procyclical variable is also below trend and vice versa. Some obvious examples of variables that are procyclical are consumption, investment, and employment. A variable is *countercyclical* if deviations in the variable from its trend are negatively correlated with deviations of GDP from trend. Unemployment is an obvious example of a variable that is consistently countercyclical and rises above its trend when GDP falls below its trend. An *acyclical* variable is one that has no consistent correlation with changes in GDP from trend.

DETRENDING: SEPARATING CYCLE FROM TREND

Identifying short-run cyclical movements in macroeconomic variables is problematic because most macroeconomic data is subject to changes along a trend over time. For example, real per-capita GDP growth in the United States has averaged slightly less than 2 percent a year over the last 150 years. As a result, we cannot attribute all changes in GDP to the business cycle. In essence, economists measure short-run behavior as a

residual: It is the movements in the actual data that are not related to trend behavior. To calculate the cyclical component of macroeconomic data, the movements consistent with trend behavior must be subtracted out of the data we collect. Doing this is referred to as *detrending* the data. Using detrended data is crucial when trying to identify cyclical behavior, for example when determining whether a variable is procyclical or countercyclical, as discussed above.

Identifying the trend behavior within macroeconomic variables is the first and most important step in detrending and deriving cyclical economic data. Two simple methods of detrending data are commonly used in macroeconomics:

(1) Assuming that trend is constant. By assuming that a variable has a constant trend, we are not assuming that the trend is necessarily linear. For example, consider the following example where the trend in GDP follows an exponential process:

$$\overline{Y}_t = a(1 + \overline{g})^t \tag{2.1}$$

where $\overline{Y}_t$ is the trend level of GDP at time t, $\overline{g}$ is the constant growth rate of GDP, and a is a constant. While trend GDP is growing at a constant rate, notice that the level of trend GDP is growing exponentially over time. Note that while the level of trend GDP is not linear, taking the natural log of trend GDP in this equation is linear. As a result, economists will often refer to the specification in equation (2.1) as being "linear in logs." Equation (2.1) is generally consistent with GDP's actual behavior, as illustrated in Figure 2.2.

After calculating the average periodic growth rate for GDP over time ($\overline{g}$) (which in the United States is equal to .036632, or approximately 3.67 percent), we can then use equation (2.1) to estimate trend GDP, or $\overline{Y}_t$. The cyclical component of GDP is then determined by calculating the difference between actual GDP and trend GDP, that is, $Y_t - \overline{Y}_t$.

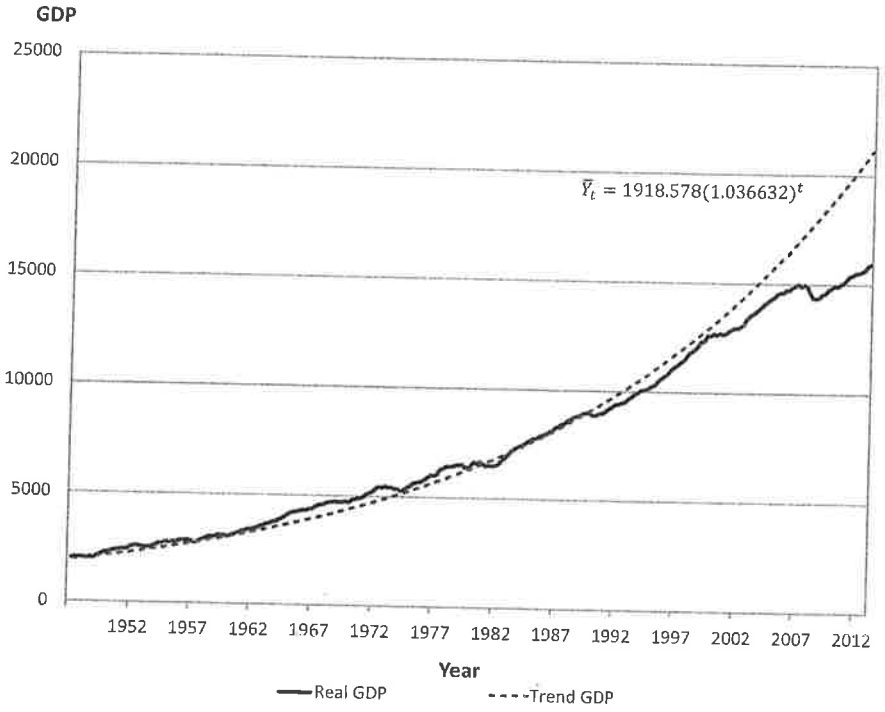
(2) *Assuming that trend follows a moving average.* By assuming a moving average trend, trend is not necessarily restricted to being constant but can vary over time. When using moving averages, economists typically assume that they are centered around the period in question. For example, the centered five-year moving average trend of GDP in 2012 would be calculated as

$$\overline{Y}_{12} = \frac{(Y_{10} + Y_{11} + Y_{12} + Y_{13} + Y_{14})}{5} \tag{2.2}$$

There are two problems with using moving average trends. First, when using a centered moving average you cannot calculate trend for the most recent data because you are missing future observations. For example, you cannot calculate GDP trend in 2014 using the method in equation (2.2) until 2016 because you will not have the data available. Typically, economists will estimate these missing observations for future years, often by using a constant growth rate derived from previous years.

The second problem with using moving averages is that they are sensitive to the number of periods over which the moving average is calculated. Trend measured by a 5-year moving average will be much more variable than trend measured by a 10-year moving average. This will, in turn, make the cyclical movements in GDP less variable for a 5-year moving average. This is a crucial problem because there is often no clear choice for how long moving average calculations should be. One standard assumption when dealing with GDP data is to use a 30-quarter moving average when

Figure 2.2 Real GDP against an exponential trend.



calculating trend GDP because, as can be seen in Table 2.1, 30 quarters is the average length of a business cycle (measured from trough to trough).

It is important to note that putting macroeconomic data measured over time into percentage changes is not a method of detrending the data. Transforming GDP into percentage changes involves subtracting this period's observation from last period's observation, known as *first-differencing* the data, then dividing by the previous value; that is,

$$\%\Delta Y_t = \frac{(Y_t - Y_{t-1})}{Y_{t-1}} \tag{2.3}$$

Note that when using this method, the percentage change in GDP will not fluctuate around zero; it will fluctuate around the positive trend growth rate of GDP, as in Figure 2.1. As a result, transforming the data into growth rates is a method of making a variable *stationary*, meaning that it will fluctuate around a steady trend. When used by itself, however, it is not a method of detrending data. To calculate the detrended growth rate, one would have to take the current growth rate of GDP and subtract out the trend growth rate of GDP calculated via one of the two methods (constant trend or moving average) discussed above.

SEVEN BASIC BUSINESS CYCLE FACTS

What general properties and relationships can be gathered from studying business cycle data? Seven basic facts are crucial to understanding the fundamental properties of business cycles in the United States and internationally.

1. *Business cycles are not cyclical.* The term *business cycle* is really a misnomer because it implies that recessions and expansions follow a regular, predictable pattern. They do not. In fact, business cycles vary considerably in size and duration over time. Refer to Table 2.1. The shortest recession in United States history was in 1980–1981 (though it was a very sharp recession) and lasted only 6 months. It was followed by the shortest expansion, which lasted only 12 months. The longest modern recession lasted 43 months between 1933 and 1937, while the longest expansion ended in 2001 and lasted 121 months, or more than 10 years. In between these shortest and longest recessions and expansions there is a wide variety of business cycle lengths. Clearly, the length of the previous

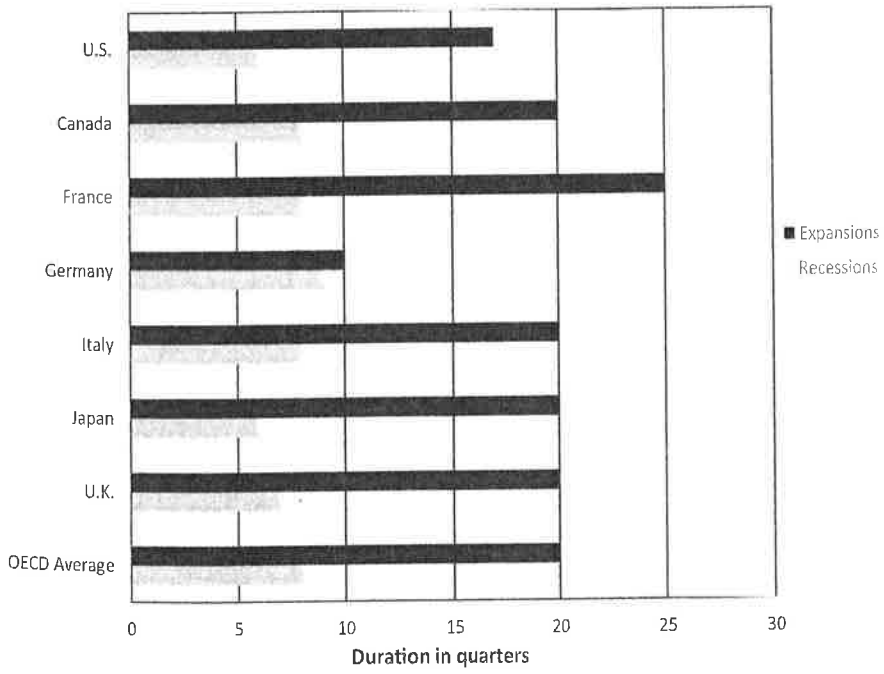
business cycle is not a reliable indicator of the length of the next business cycle.

In addition, the size of the decline in GDP associated with postwar business cycles has also varied greatly, from a fall of nearly 27 percent during the Great Depression to a fall of only 0.3 percent during the 2001 recession.

2. *Business cycles are not symmetrical.* In the United States, expansions average 39 months in length while recessions average only 18 months. Thus, expansions are about twice as long as recessions on average. However, output changes tend to be much bigger during recessions than they are during expansions.

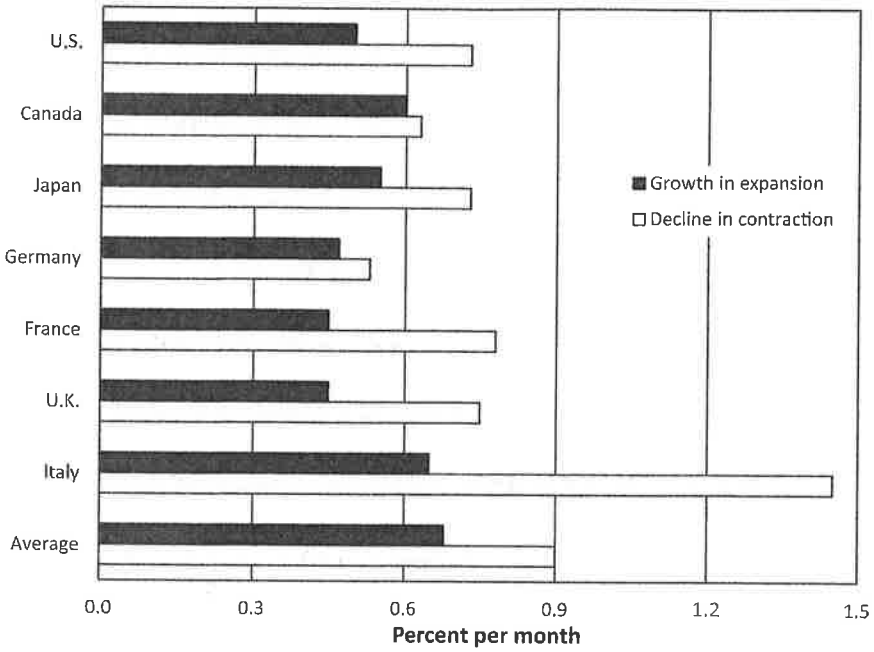
These same asymmetries between recessions and expansions hold internationally as well. Figure 2.3 and Figure 2.4 provide some summary data of business cycles across a small subset of developed countries. Looking at Figure 2.3, notice that across all of these countries expansions last considerably longer than recessions. There is a great deal of similarity across these countries in terms of the length of their

Figure 2.3 Average duration of expansions and recessions.



Source: Author's creation based on data available in Chauvet and Yu (2006).

Figure 2.4 Monthly percentage changes in industrial production during business cycles.



Source: Author's creation based on data available in Artis et al. (1997).

recessions, but slightly more variation in terms of the length of expansions. Figure 2.4 presents percentage increases and decreases in industrial production across countries. Recessions tend to be characterized by larger changes in output than expansions. Thus, as a general rule across countries, recessions tend to be shorter but with sharper changes in GDP, while expansions tend to be longer but with more gradual changes in GDP.

3. *Business cycles have changed over time.* Newer and better historical data has given economists a clearer picture of historical business cycles in the United States, and this better data suggests that postwar recessions have moderated, particularly in regards to their length. A quick glance at the data averages reported at the bottom of Table 2.1 suggests that recessions are about half the length they were in the prewar period, while expansions have gotten significantly longer. This means that recessions have been less frequent than they were in previous eras, although this result has been largely driven by two long expansions in the 1980s and 1990s. In addition, the

declines in output associated with postwar recessions appear to have been smaller. The moderation of business cycles, and an examination of its causes, will be discussed in more detail in Chapter 14 on postwar business cycles in the United States.

4. *The Great Depression and the World War II expansion dominate all other recessions and expansions.* GDP fell by nearly 27 percent in 1929–1933, while unemployment rose to a peak of 25 percent in 1933. The fluctuations of the 1930s and 1940s dwarf the next largest recession, the global financial crisis of 2008, in which GDP declined by 5.1 percent and unemployment rose to 10 percent. Likewise, the expansion that began in 1938 and continued throughout World War II was unparalleled, with GDP rising by 64 percent between 1941 and 1944. The explanation for this large expansion obviously had a lot to do with the huge increases in government purchases and the massive mobilization of resources that took place during the war. The explanation for the Great Depression is less apparent. Obviously, something unprecedented happened during the late 1920s and 1930s that must be explained in order to have a plausible theory of what causes recessions and depressions. The Great Depression will be discussed throughout this book and will be most closely examined in Chapter 13.
5. *The components of GDP exhibit behaviors much different than GDP itself.* The components of GDP are consumption, investment, government purchases, and net exports. Investment, durable consumption, and net exports are highly volatile and change more than output over the business cycle, while nondurable consumption and government purchases are more stable and change less than output over the business cycle.

   Table 2.2 presents the components of GDP and their contribution to both average GDP growth and to changes in GDP during recessions. Consumption includes both nondurables (like food and clothing), durables (like appliances and automobiles), and services. Both nondurables and services contribute less to falls in GDP than they do to the level of GDP, meaning that they are considerably more stable than GDP as a whole and, in fact, are only mildly procyclical. Durables, however, are significantly more volatile than GDP as a whole, strongly procyclical, and a coincident indicator of peaks and troughs in GDP.

   Investment as a whole is consistently procyclical, a leading indicator of changes in GDP, and about 3.5 times more volatile

Table 2.2 Behavior of the components of GDP.

Component of GDP	(%) Average share in GDP	(%) Average share of fall in GDP during recessions
Consumption		
Durables	8.9	14.6
Nondurables	20.6	9.7
Services	35.2	10.9
Investment		
New residential	4.7	10.5
Fixed nonresidential	10.7	21
Changes in inventories	0.6	44.8
Net exports	−1	−12.7
Government purchases	20.2	1.3

Source: Author's creation based on data from the Bureau of Economic Analysis available at https://www.bea.gov/itable/index.cfm.

than GDP. Investment includes new residential construction, fixed nonresidential investment (investments made by firms), and changes in inventories. Looking at Table 2.2, we see that each of the components of investment is considerably more volatile than its share of GDP, together accounting for more than 75 percent of the changes in GDP during recessions. Especially important are inventories, which account for less than 1 percent of GDP but more than 40 percent of the changes in GDP during recessions. Inventories are also a leading indicator of business cycle turning points. Investment clearly plays a crucial role in initiating and propagating business cycles. As a result, investment has also played an integral part in many of the theories of business cycle behavior.

Government purchases include government acquisitions of goods and services but ignore transfer payment programs such as social security and welfare. Government purchases are mildly countercyclical in the United States and not very volatile.

Finally, net exports are the difference between exports and imports. Net exports are actually a negative share of GDP because the United States has consistently run trade deficits since the mid-1980s. Net exports are slightly countercyclical, meaning that net exports tend to rise during recessions and offset some of the falls in output. This is in part because exchange rates tend to fall during

a recession, decreasing the price of exports and increasing the price of imports. However, net exports, while volatile, are not a reliable indicator of peaks and troughs in GDP.

6. *Business cycles are associated with big changes in the labor market.* Unemployment is strongly countercyclical, and changes in employment are much larger during recessions than the changes in other inputs into production. Over the long run, increases in the capital stock account for roughly one-third of trend per capita GDP growth while increases in productivity account for the other two-thirds. Changes in employment account for little of the increases in trend per capita GDP (this makes sense if employment and the population grow at roughly the same rate, which they do). However, during business cycles (times when output is growing at a rate different than trend), the story is exactly the opposite. The capital stock changes very little over business cycles because it is largely fixed in the short run, meaning it contributes little to changes in output over the business cycle. Changes in employment, on the other hand, account for two-thirds of the cyclical changes in per capita GDP while changes in productivity account for one-third of cyclical changes. In other words, during recessions and expansions, changes in employment appear to be driving a very large share of the changes in output. This seems to suggest that any plausible theory of business cycles has to give a prominent role to the cyclical behavior of the labor market.
7. *Business cycles are larger and more frequent in poorer countries than richer countries.* The variability of output in poor countries is more than twice what it is in rich countries. According to Uribe (2013), this higher volatility is driven by the fact that consumption and net exports are more volatile in poor countries, but also by the fact that in poor countries government purchases are acyclical. In rich countries, however, government spending is countercyclical because of its use in stabilization policy. The ability to increase government spending during downturns is an option that many poorer countries do not have because they have limited access to debt markets.

Table 2.3 presents business cycle data for 12 countries in the Organization for Economic Co-operation and Development (OECD), which are developed countries, and 12 Latin American countries, which are poorer and emerging-market economies. While the length of recessions between the two groups are similar, notice that

Table 2.3 Business cycles in Latin America and OECD countries.

	Duration of contraction	Duration of expansion	(%) Decline in GDP
Latin America	3.5 quarters	16 quarters	−6.2
OECD	3.6 quarters	23.8 quarters	−2.2

Source: Author's creation based on data available in Calderón and Fuentes (2010).

expansions are roughly eight quarters longer in rich countries. This implies that recessions occur less frequently in rich countries. In addition, as mentioned before, the sizes of the contractions in GDP associated with recessions are nearly three times larger in Latin America than in OECD countries. Overall, these facts indicate that a much more volatile macroeconomic environment exists in poorer countries relative to richer countries.

THE CYCLICAL BEHAVIOR OF OTHER IMPORTANT MACROECONOMIC VARIABLES

As mentioned earlier, economists are always looking for clues to help them forecast the future and to help them evaluate competing models of business cycle behavior. A few of the most closely followed macroeconomic variables are briefly described here. The cyclical behaviors of these variables are summarized in Table 2.4.

Labor Market Variables

A worker is classified as being unemployed in the United States if he or she is currently without work and has been actively looking for work during the previous four weeks. Total unemployment is strongly countercyclical and is a lagging indicator of both peaks and troughs. Total unemployment lags peaks in output because when the economy first slows down, some workers are still finding jobs (even as new layoffs may be increasing) so that unemployment lags peaks. When the economy begins to improve, the last inputs to be re-added by firms are more workers, so unemployment also lags troughs. The lagging nature of unemployment has been particularly pronounced after the last two recessions in the United States, hence the widely recognized phenomena of a "jobless recovery."

Economists also closely follow two other variables related to unemployment. The first is the duration of unemployment, or the average

Table 2.4 Cyclical behaviors of key macroeconomic variables.

Variable	Direction	Timing
Expenditures		
Consumption	Procyclical	Coincident
Investment	Procyclical	Leading
Government purchases	Countercyclical in rich countries; acyclical in poor ones	–
Net exports	Countercyclical	Lagging
Labor market variables		
Total unemployment	Countercyclical	Lagging
Duration of unemployment	Countercyclical	Lagging
Initial unemployment claims	Countercyclical	Leading
Real wages	Inconsistent	Inconsistent
Money supply and inflation		
Money (M1) supply	Procyclical	Leading
GDP deflator inflation	Procyclical	Lagging
Consumer Price Index (CPI) inflation	Procyclical	Coincident
Financial variables		
Short-term interest rates	Procyclical	Lagging
Long-term interest rates	Procyclical	Lagging
Stock prices	Procyclical	Leading
Corporate profits	Procyclical	Leading
Capacity and productivity		
Capacity utilization	Procyclical	Leads peak, lags troughs
Productivity	Procyclical	Leading
Expectations		
Consumer Confidence Index	Procyclical	Leading

period of unemployment for those who are currently unemployed. This is countercyclical and a lagging indicator of peaks and troughs. The second is initial unemployment claims, which are the number of new claims for unemployment insurance. Initial unemployment claims are more sensitive to changes in the business cycle than total unemployment. Unlike total unemployment, which lags peaks and troughs because of lags in the hiring process, initial unemployment claims are a leading indicator because firms anticipate changes in economic conditions and increase layoffs before production falls and decrease layoffs before conditions improve.

Real wages do not behave consistently over business cycles, although changes in the real wage do consistently lag behind peaks and troughs in GDP. During the recessions of the 1970s, real wages were procyclical. During the Great Depression, real wages were countercyclical. If measured over the entire length of United States data that is available, however, real wages are mildly procyclical. Real wages also fail to consistently lag or lead business cycle turning points.

As mentioned in fact (6) earlier in this chapter, the volatility of unemployment indicates that the labor market plays a critical role in business cycles. As a result, the behavior of real wages is an integral component of many of the theories that will be examined in this book. Differences in how each of these models views the labor market provide a useful criterion by which to compare and contrast alternate explanations of business cycles. This puzzle regarding the inconsistent behavior of real wages is one that will be referred to repeatedly throughout our discussions.

Money Supply and Inflation

M1 is the most commonly used definition of the money supply, which includes currency and checkable deposits. M1 is strongly procyclical and a leading indicator of peaks and troughs in the business cycle. Federal Reserve policy largely, but not completely, determines the level of M1. The critical issue is this: Do changes in the money supply lead to changes in output, or do changes in output cause the money supply to change in ways that the Fed cannot control? These questions will be an important topic for later discussion.

There are two commonly used measures of inflation. The GDP deflator measures changes in the price of all goods produced within U.S. borders and included in GDP. Inflation as measured by the GDP deflator is weakly procyclical, only falling during 6 of the 11 postwar recessions. It lags peaks and troughs primarily because it includes investment goods and government purchases, the prices of which are slow to respond to changes in economic conditions.

The consumer price index (CPI) measures changes in the prices of consumer goods. Like the GDP deflator, it is only mildly procyclical, falling during 7 of the 11 postwar recessions. Unlike the GDP deflator, changes in the CPI are roughly coincident with business cycle turning points because consumer prices are more sensitive to changes in prevalent market conditions.

It is important to note that while both measures of inflation have been mildly procyclical on average, they have exhibited periods of

countercyclical behavior as well. The variability of the cyclical behavior of inflation is a puzzle that economists need to explain.

Financial Variables

Both short-term and long-term interest rates are procyclical. However, there are a myriad of interest rates that can be tracked, and some are more reliable predictors of business cycles than others. One of the most reliable is the three-month Treasury Bill rate, which has fallen during 10 of the 11 postwar recessions. Even though many long-term interest rates are less reliable indicators of business cycles than short-term rates, they probably have a more direct effect on investment decisions and economic activity. In general, short-term and long-term interest rates are lagging indicators of business cycle turning points because inflation is a key determinant of the level of interest rates, which tends to lag business cycle fluctuations.

Stock prices are one of the most visible and closely followed macroeconomic series. Stock prices are procyclical and a leading economic indicator of peaks and troughs. The same holds true for corporate profits. The problem with using the stock market to predict business cycles is that stock prices are much more volatile than GDP. Stock prices cannot be relied on exclusively when forecasting because of the high probability of false signals.

Capacity and Productivity

Capacity utilization is the employment rate of capital. For obvious reasons, capacity utilization is procyclical. Its downturns tend to lead peaks because firms typically purchase large amounts of capital during expansions, and this capital typically comes online before a downturn, reducing capacity utilization. On the other hand, capacity utilization lags troughs because firms first reduce inventories and delay new investment projects for as long as possible during downturns.

Increasing productivity, which is measured as output per worker hour, is the primary way that economies improve the standards of living of their citizens over the long run. However, in the short run, the relationship between GDP and productivity is much less clear. Productivity is procyclical, falling during 10 of the 11 postwar recessions, and it is a leading indicator of peaks and troughs in the business cycle. However, the reasons why this holds remain unclear. Do new technologies drive expansions and technological inefficiencies drive recessions? Or could it simply be that firms ask their employees and their capital to work harder during

expansions because firms are pushing their capacity constraints, and then allow their workers and capital some slack during recessions because these same constraints are less pressing?

Expectations

The most popular measure of the public's expectations of future economic conditions is the Consumer Confidence Index, which is based on household survey data collected by the University of Michigan's Survey Research Center. The index is generated based on household responses to questions regarding (1) the family's economic prospects over the next 12 months; (2) the United States' economic prospects over the next 12 months; and (3) the United States' economic prospects over the next five years. This Consumer Confidence Index is strongly procyclical and a leading economic indicator. However, it is much more volatile than GDP, meaning the Consumer Confidence Index often provides false signals of business cycle turning points.

Expectations play a key role in many of the explanations of business cycles discussed later in the book because of their importance in influencing investment and consumption decisions. As a result, measures of consumer confidence are very closely watched by economic forecasters.

CONCLUSIONS

The empirics of business cycles have not been completely covered in this chapter, but in reality, this is impossible to do. New theories often provide economists with new ideas about things to look for in their economic data. Albert Einstein makes this interaction between theory and empirics quite clear in the following quote: "It is quite wrong to try founding a theory on observable magnitudes alone. . . . It is the theory which decides what we can observe" (Heisenberg 1971).

The goal for economists interested in why business cycles occur and what can be done about them is straightforward: find a theory that fits the empirical facts of business cycles as they are understood. While this goal is clear, how to achieve this goal has not been. A number of different models have been developed over the past 250 years to explain the nature and causes of recessions and depressions. Many of these models generate predictions that are consistent with much (though never all) of this economic data. How do we evaluate these competing models? Is a model's ability to match economic data the only measure of its worth? Or do things like logical structure and consistency with microeconomic theory matter

just as much? These are just some of the many questions that will be dealt with when the macroeconomic theory of business cycles is reviewed in the next part of this book.

SUGGESTED READING

National Economic Trends, *International Economic Trends*, and *Monetary Trends*: These publications are made available by the St. Louis Federal Reserve. They contain a wide variety of current macroeconomic data as well as economic analysis of the current state of the economy. They are available at http://research.stlouisfed.org/publications/.

THREE

Early Business Cycle Theories

INTRODUCTION

Before the Great Depression, a number of economic theories existed that elucidated the thinking of early economists about the causes of economic fluctuations. In examining these theories in this chapter, we will take the first step in evaluating just how much progress has been made in our understanding of recessions and depressions. These early theories are simple, to the point that they are somewhat naïve about the way that macroeconomics works. They each focus on a single explanation of what causes business cycles. They also focus on microeconomic phenomena and fail to explain how markets can fail at the aggregate level. However, these simple models are interesting not only for what they cannot explain about business cycles but also because of the things they identify as the key factors that drive recessions and depressions. Many of these early models provided the original insights that were then more fully developed in future, more comprehensive business cycle models.

While many theories are introduced in this chapter, the classical model is the most important of these early theories and is the primary focus of discussion. The classical model attempts to explain macroeconomic business cycles using microeconomic principles. Its clear, simple insights into the causes of business cycles are still the basis of widely held beliefs among many modern economists. However, the classical model of business cycles has also been the focus of generations of critiques and a starting point from which most modern theories have deviated. As a result, the

classical model serves as a useful base model for comparing different modern models of business cycles.

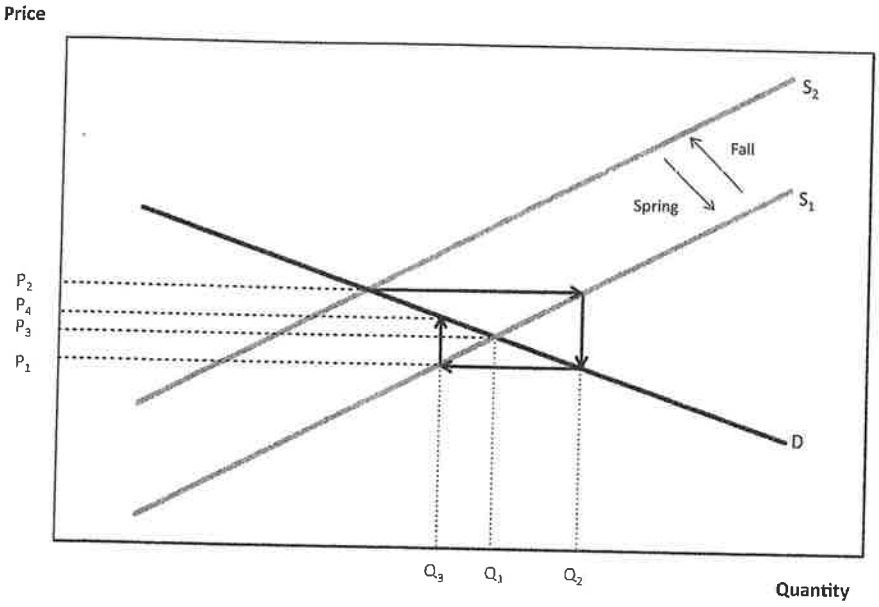
EARLY AGRICULTURAL THEORIES

During times when agriculture was a much more important industry than it is today, economists focused on the cyclical nature of agricultural production to explain recessions and expansions. One of the earliest of these models is the sunspot theory developed by W. S. Jevons (1884). His theory proposed that low sunspot activity on the surface of the sun was bad for plant growth and agricultural output (which is questionable botany as well as questionable economics). As a result, Jevons believed that the cyclical behavior of economies closely followed the cyclical behavior of sunspot activity. Jevons presented historical evidence that business cycles lasted approximately 10.43 years from peak to peak, while sunspot cycles lasted 10.45 years. In his mind, this correlation proved his theory. However, new evidence was later presented that sunspot cycles in fact lasted 11 years. Jevons tried to salvage his theory by saying that because his theory was so well known by farmers, if farmers expected sunspot activity to change then they would change their behavior accordingly, breaking the link between actual sunspot activity and economic activity. While the sunspot theory is today discredited, Jevon's hypothesis that expectations can be self-fulfilling, meaning that falling expectations can lead to falling output without any real changes in the economy, anticipates later macroeconomic theories that focus on the importance of expectations and how these expectations might affect behavior.

Another influential agricultural theory was the cobweb theory, first presented by Ezekial (1938). This theory attempted to explain how shocks to supply and demand could lead to cyclical fluctuations in prices and output. There are two critical assumptions in the cobweb theory. First, goods are perishable so that farmers have to accept the current price and cannot store their output until the next period. Second, the amount farmers plant in the spring is based on what the price was last fall. This means that expectations are backward looking, not forward looking.

Figure 3.1 presents the results of a temporary negative supply shock, in which supply falls from S_1 to S_2 in the fall but returns to S_1 before the spring planting. In the spring, farmers make their planting decisions based on the higher price that existed in the previous fall, P_2, continuing until the upcoming fall. However, because supply has returned to its previous level, farmers find that they have planted too much based on their assumption

Figure 3.1 Supply and demand in the cobweb theory after a temporary fall in supply.



that the price would still be P_2, resulting in excess supply. In order to sell all of the crops that are available in the fall, Q_2, farmers must reduce their price to P_3 in order to clear the market. Next spring, farmers plant based on a price of P_3 and produce an amount equal to Q_3 to sell in the fall. Of course, now there is a shortage of crops because P_3 is below the equilibrium price. As a result, price rises to P_4 in order to clear the market. In the third spring, farmers plant based on the belief that the price will continue to be P_4, and the process continues. Notice that prices and quantities will eventually converge towards the equilibrium price and quantity, but this process takes a long period of time. In addition, this process is very costly because of the instability created as the market cycles between excess supply and excess demand.

The cobweb theory is not a useful explanation of the behavior of modern markets because of the two questionable assumptions on which it is based. First, most goods in modern economies, even agricultural goods, can be stored. If goods can be stored, producers do not necessarily have to accept the current price, which would smooth cyclical movements in prices and quantities. More importantly, producers are not nearly as

naïve as the cobweb theory assumes. Do individuals really form their expectations of the future based only on what has happened in the past? Or are they forward looking, attempting to anticipate future market conditions? If producers are forward looking, equilibrium will be restored much more quickly. Once again the cobweb theory underscores the important role of expectations in business cycles, which plays an important role in all modern macroeconomic theories.

Malthus (1798) developed one of the best-known, and most infamous, models of economic cycles. Malthus observed that in an agricultural society such as the one that existed in Great Britain during the late 1700s, capital was primarily land, and land in an island country is fixed in quantity. In addition, given that agricultural production techniques had largely remained the same over the previous century, Malthus assumed that technological knowledge would also be constant in the future. As a result, Malthus believed that as the population in Britain rose, diminishing returns would quickly set in as the capital-to-labor ratio fell. Over time this would lead to chronic underproduction, falling standards of living, and eventually mass poverty and starvation. However, starvation does have its benefits; namely, that the capital-to-labor ratio would rise, increasing per capita income. As income rose, standards of living and general health would improve. Healthy people have more babies, and the whole process would begin again.

Of course, the problem with Malthus's analysis is that capital and technology are not fixed. Malthus never understood that an industrial revolution was taking place at the time he was writing. As a result, he did not anticipate improvements in technology and the invention of new forms of capital that have taken place over the last 200 years. Through this omission, however, Malthus's model highlighted the importance of technological change (or the lack of it) not only in stabilizing economic growth but also in potentially driving business cycles. This later possibility is the basis of real business cycle models, which are discussed in Chapter 8.

EARLY MONETARY THEORIES

Before the Great Depression, most economies in the world were on the gold standard. The gold standard was an international monetary system that required the amount of paper currency in circulation within each country to be backed by a fixed amount of gold. As a result, a country's gold holdings would place an upper limit on the quantity of money supplied within that country. One of the important implications of the gold standard was that the money supply of a country would fluctuate with its

trade balance. A country that was running a trade deficit would experience gold outflows, which would eventually necessitate lowering the money supply. On the other hand, a country that was running a trade surplus would see its gold holdings rise and its money supply increase.

Hawtrey (1913) hypothesized that fluctuations in the money supply caused by changes in the trade balance were the cause of business cycles. A country that was running a trade surplus would see its money supply increase. This increased the supply of credit within an economy, increasing investment and output. However, higher output would increase the demand for imports and reduce the trade balance. Eventually, the country would begin to run a trade deficit and see its money supply contract, and the whole cyclical process would take place again in reverse. Hawtrey's model of monetary business cycles is one in which business cycles are *endogenous*, or internally self-generating. Business cycles are not the result of external, or *exogenous*, shocks to the economy. Hawtrey's solution to preventing these cyclical fluctuations was simple: Abandon the gold standard for *fiat money*, or money that is not backed by a commodity so that its supply could be stabilized.

The obvious problem with Hawtrey's theory is that business cycles have not ended since modern economies have adopted fiat money. However, by being one of the first to propose that changes in the money supply and credit drive cyclical fluctuations, Hawtrey laid the groundwork for modern, more fully developed business cycle models in which monetary policy plays a critical role, such as the Keynesian model (Chapter 4), Austrian economics (Chapter 5), and particularly the monetarist model (Chapter 6).

UNDERCONSUMPTION AND MARXIST THEORIES

Underconsumptionist economists such as Hobson (1922) worried that growth in the production of goods within an economy would outpace the growth rate of consumption. Without adequate aggregate demand to absorb these goods, the resulting chronic overproduction would threaten future economic prosperity and create business cycles.

Why would consumption growth be unable to keep pace with production growth? Hobson's underconsumption model focused on the fact that households save a larger share of their income as their income rises. As aggregate income in a country increases over time, the average propensity to consume (consumption divided by income) falls and the gap between aggregate income and total consumption increases. For a while, this gap can be filled with higher levels of investment. However, over time, this

increased investment will only aggravate the excess supply of goods and reduce the average propensity to consume even further. Increasingly large excess supplies of goods will eventually necessitate cuts in production and a decrease in aggregate income. This recession leads to a rise in the average propensity to consume, eventually causing the problem of excess supply to disappear—for a while. Ultimately, though, higher aggregate income will lead to a lower average propensity to consume, and the whole process will start all over again. Thus, like early monetary theories, business cycles are endogenous in underconsumption models and not initiated by external shocks.

Marxist theories of business cycles share many similarities with the underconsumptionist viewpoint. Marx theorized that excess capital accumulation over time would reduce the profitability of businesses, leading to periodic business failures and economic contractions. Other Marxists blamed the falling purchasing power of workers that results from the inequality inevitably created by capitalism. As the purchasing power of most of the population falls relative to the size of aggregate output, persistent and destabilizing excess supply will occur.

There were a number of policy solutions offered by the underconsumptionists aimed at preventing the average propensity to consume from falling over time. One was to redistribute income from the rich to the poor who have higher propensities to consume. Another was to increase the amount of government purchases within an economy, which would increase the average propensity to consume for the public and private sectors as a whole. These underconsumption theories were very influential in the development of Keynesian economics (Chapter 4), which also focuses on aggregate demand shortfalls as the primary cause of business cycles. The fiscal policy solutions proposed by underconsumptionists are developed more fully in the Keynesian model, leading to a more complete theory of the proper role of government in stabilizing business cycles.

PROFIT MARGIN THEORIES

A *profit margin* is simply the price minus the average cost of the good. Mitchell (1927) argued that profit margins are strongly procyclical in imperfectly competitive markets because costs fall during expansions. This happens for a number of reasons. First, firms are able to reduce their inventories, reducing costs. Second, input cartels tend to fall apart during recessions, so the beginning of expansions should be characterized by lower input prices. Finally, larger output means that *economies of scale*

can be exploited. Economies of scale refer to conditions when the average cost of production falls as the quantity of the good produced rises. Economies of scale tend to exist in industries with large fixed costs because higher production allows these fixed costs to be spread out over more units, reducing average cost.

Procyclical movements in the profit margin feed expansions and magnify contractions. During good times, rising profit margins increase expected profits and encourage firms to undertake investment projects. However, these projects do not immediately increase the capital stock and capacity. In the meantime, as the economy approaches full capacity, costs begin to rise and profit margins begin to fall. Falling profit margins reduce expected profits and reduce a firm's likelihood of undertaking new investment projects, eventually turning an expansion into a contraction. Once again, expectations play an important role in this model, as they do in all modern business cycle theories. In addition, profit margin theories recognize that markets are not perfectly competitive and that imperfect competition plays an important role in explaining business cycles. This later becomes a crucial component of Keynesian (Chapter 4) and new Keynesian (Chapter 9) economics.

EARLY INVESTMENT THEORIES

For as long as economists have known about fluctuations in aggregate economic activity, economists have also intuitively understood that investment is extremely volatile and an important source of economic instability. Investment volatility played an important, but secondary, role in many of the early theories already discussed. In other early theories, investment plays a more central role. Early investment theories of business cycles fall into roughly three categories. Some of these models, such as those of Hawtrey (discussed previously) and Wicksell (1936), focused on unstable fluctuations in the money supply, which creates changes in investment. In Wicksell's model, changes in the money supply push interest rates either above or below the level required for savings to equal investment. As a result, investment and output fluctuate with changes in the supply of money and bank credit.

A second category of early investment theories, also developed by Wicksell, focused on the overinvestment that results from the investment booms and busts that follow the development of new technologies. This theme is later re-examined in more detail by long-wave theories of business cycles, which are discussed in the next section.

Finally, other early investment theories focus on spending multipliers associated with investment, such as that of Clark (1917). Often referred to as accelerator models, these models center on the possibility that higher investment increases aggregate output, which in turn increases spending, which in turn leads to additional increases in investment and output. Thus, small initial changes in investment can lead to large changes in aggregate output. While these models do not explain why investment would initially change, they do explain why changes in investment could be multiplied into very large changes in output. The possibility of spending multipliers associated not only with investment but also with exogenous changes in consumption and government purchases were later to become crucial components of the Keynesian model.

THE CLASSICAL MODEL

The cornerstone concepts of the classical model were laid out in the first book to treat economics as a distinct field of study, Adam Smith's (1776) *The Wealth of Nations*. The model was further refined by many of the founding fathers of economics such as David Ricardo, Jean-Baptiste Say, and John Stuart Mill. The classical model is the most fully developed and influential of the early business cycle theories.

THE ASSUMPTIONS OF THE CLASSICAL MODEL

The classical model is founded upon three crucial assumptions.

1. *Perfect competition exists in all markets.* This means that all firms and consumers are price takers, wages and prices are perfectly flexible, perfect information exists about economic conditions, and markets always clear so that excess demand or excess supply cannot persist.
2. *Real values, not nominal values, are used when making decisions.* In other words, money illusion does not exist, and agents adjust all nominal variables by changes in the price level before they act.
3. *The economy is composed of representative agents, or individuals that all have the same preferences and act alike in every way.* When combined with the assumption of perfect competition, the assumption of representational agents means that macroeconomic behavior becomes a simple summation of average microeconomic behavior. In other words, the classical model does not make any real distinction between macroeconomic and microeconomic behavior.

Output Determination and the Labor Market in the Classical Model

In the classical model, capital and labor are combined using a production function to produce aggregate output. Let Y denote real aggregate output, L denote total labor employed, and K denote the total capital stock. The production function can then be written in the following form:

$$Y = F(L, K) \tag{3.1}$$

This production function is in *Cobb–Douglas* form. It is easy to show that this production function exhibits both *constant returns to scale*, meaning that doubling both capital and labor will double output. However, each individual input is also subject to *diminishing marginal returns*. Diminishing marginal returns refers to the property that if the quantity of one of the inputs in production is fixed, the additional units of output that are produced by increasing the other input will get smaller as the quantity of that input rises. In other words, the *marginal product of labor*, the change in output from a change in labor, falls as the quantity of labor rises. Diminishing marginal returns is one of the cornerstone concepts in economics because it implies that a firm's ability to increase output is limited unless it can increase all of the inputs to production.

Diminishing marginal returns play an important role in the classical labor market. The equilibrium real wage (denoted as $\frac{W}{P}$) in the classical model is determined by the supply and demand for labor. The demand for labor is determined by firms, who hire labor until the marginal benefit of an additional unit of labor, or the marginal product, is equal to the marginal cost of an additional unit of labor, or the real wage. Diminishing returns imply that the marginal product of labor falls as the quantity of labor rises. As a result, firms will only hire more workers (and accept a lower marginal product) at a lower real wage, meaning that the demand curve for labor must slope downward.

Regarding labor supply, changes in the real wage have two effects. The first is the substitution effect, in which a higher real wage induces more workers to enter the workforce or work longer hours. The second is the wealth effect, in which a higher real wage increases wealth and reduces the incentives to work. The classical model assumes that the substitution effect of an increase in the real wage is larger than the wealth effect so that a higher real wage increases labor supply and the labor supply curve is upward sloping.

In equilibrium, real wages adjust in the classical model so that the quantity demanded of labor equals the quantity supplied. Notice that only the

things that affect the quantity of labor, the quantity of capital, or the production function (i.e., things that shift the labor supply or labor demand curves) will affect the level of aggregate output. Thus, changes in output in the classical model must be driven by changes in these three factors, each of which influence the aggregate supply of goods produced within an economy.

Factors that influence the quantity of labor. Immigration and population growth are two obvious determinants of the quantity of labor supplied within an economy. Public policy is also an important influence on labor supply and labor demand because it can play a role in shaping individuals' incentives to work. For example, income taxes on workers reduce the supply of labor, while taxes on payrolls reduce the demand for labor. Likewise, government regulations that place costly restrictions or requirements on firms (such as health and safety requirements) can also reduce labor demand and the quantity of labor.

Factors that influence the quantity of capital. Anything that encourages firms to invest in capital will increase aggregate output, while anything that discourages investment will decrease aggregate output. Once again, tax policy and government regulations play an important role in shaping the incentives to invest. Public policy also plays a critical role in determining how much households save. Tax policies that favor consumption as opposed to saving (such as an income-based tax system instead of a consumption-based tax system) will reduce the total amount of savings and the quantity of funds that are available for investment, reducing the quantity of capital. Finally, the discovery of natural resources will increase aggregate output, while wars or natural disasters that destroy capital will obviously reduce aggregate output.

Factors that influence technology. New technologies change the production function a firm uses, allowing firms to produce more output using the same amount of capital and labor. In addition, new technologies provide firms with incentives to hire more labor and more capital. Anything that improves the incentives to produce and invest in new technologies will eventually increase output growth. For example, the provision of tax incentives and funding for research and development projects, the granting of patent protection, and the provision of educational opportunities are all examples of public policies that can encourage new innovation. However, negative shocks to technology are also possible. For example, during the Organization

of Petroleum Exporting Countries (OPEC) oil embargos of the 1970s, higher oil prices made oil-intensive equipment and many oil-intensive technologies too expensive to use, significantly reducing productivity and aggregate output.

Aggregate Demand and Aggregate Supply in the Classical Model

The things that determine real output in the classical model—labor, capital, and technology—are all factors that affect aggregate supply. Nominal variables, such as the price level, have no effect on these inputs and play no role in determining the level of real output, Y. As a result, there is no relationship between the price level and aggregate output on the supply-side of the classical model, meaning that aggregate supply is a vertical line. The position of the aggregate supply curve is determined by a country's stock of labor, capital, and technology.

What about aggregate demand in the classical model? The classical theory of aggregate demand is based on the quantity theory of money demand originally developed by the philosopher David Hume in the mid-1700s. In the quantity theory, people hold money because money is needed in order to conduct transactions. This implies the following quantity theory equation:

$$MV = PY \tag{3.2}$$

P denotes the aggregate price level, so that PY is equal to nominal aggregate expenditure (or nominal aggregate output). M denotes the money supply, and V denotes the velocity of money, or the number of times a unit of money changes hands over a period of time. The intuition behind this equation is straightforward. If money is needed when conducting all trades, then in order for the level of nominal expenditure (PY) to increase either the supply of money (M) or the velocity of money (V) has to increase as well in order to support this higher volume of trade.

The quantity theory is not only a theory of money demand but also a theory of aggregate demand because it states that on the demand side of an economy a negative relationship exists between the price level and the level of real output. The intuition behind this downward sloping aggregate demand curve is as follows: Holding money and velocity constant, a higher price level reduces the real value of money holdings, which in turn reduces real spending and output.

When these aggregate demand and aggregate supply curves are considered together, two important implications of the classical model become evident. First, the role of aggregate demand in the classical model is only to determine the price level. Aggregate demand has no influence on real aggregate output. It is aggregate supply in the classical model that determines aggregate income and, as a result, aggregate expenditure within an economy. This classical principle that supply creates its own demand is often referred to as *Say's Law*.

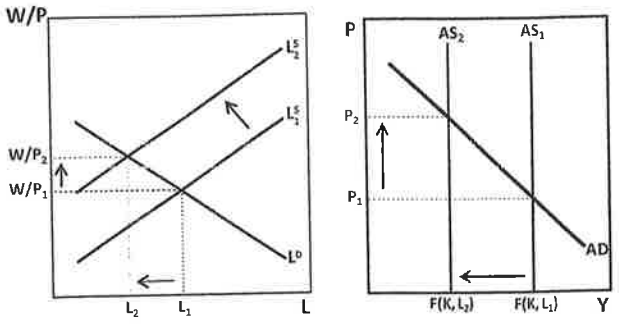
Second, given that aggregate demand only influences the price level, changes in the money supply, which shift the position of the aggregate demand curve, only affect the price level. The classical principle that changes in the money supply only affect nominal variables (the price level, nominal wages, nominal output) but not real variables (real output, unemployment, labor, capital, technology) is often referred to as *money neutrality*. Thus, changes in the money supply cannot influence the things that really matters in the classical model. The strength of the quantity theory of aggregate demand is that it provides a simple and accurate explanation for the close correlation that exists between average money growth and average inflation across all countries over long periods of time. Sustained money growth, and nothing else, drives sustained inflation.

Business Cycles in the Classical Model

Business cycles do not exist in the classical model, at least not in the traditional sense of temporary deviations of output from a long-term trend. All changes in output in the classical model are permanent and are caused by changes in aggregate supply. As a result, when output falls because of a decrease in aggregate supply, it will not return to its previous level unless something else changes to increase aggregate supply.

So what drives changes in aggregate supply, particularly decreases in aggregate supply that cause economic contractions? Classical economists focused on one primary culprit—government policy, particularly tax policy and government regulation. For example, consider the imposition of a tax on labor income, such as the payroll tax adopted in the United States. Figure 3.2 graphs the effects of this tax, which reduces the labor supply curve, reduces the quantity of labor and increases the real wage. It also shifts the aggregate supply curve to the left, decreasing aggregate output. As another example, Figure 3.3 graphs the effects of a tax on savings (or investment). This tax reduces the capital stock, which lowers the marginal product of labor and shifts the labor demand curve downward. Because of

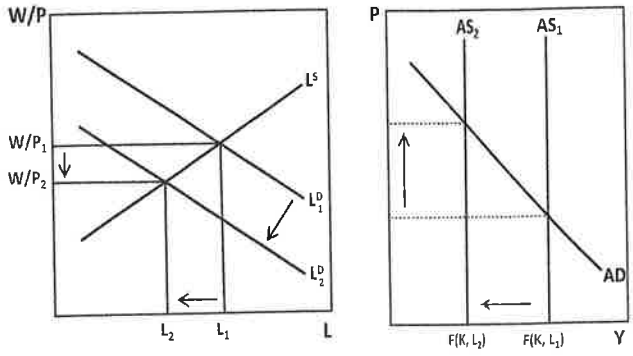
Figure 3.2 Impact of a tax on labor income on the labor market and aggregate demand and supply.



these falls in labor and capital, aggregate supply shifts to the left and aggregate output decreases.

Markets are perfectly competitive in the classical model, and if left alone they will work efficiently and maximize output and welfare. As a result, the role of government in the classical model is essentially a negative one. Anything the government does outside of the basic responsibilities of protecting property rights, providing for national defense, breaking up monopolies, and providing public education will lower efficiency and output. There is no positive role for the government to actively stabilize or manage an economy at the macroeconomic level. Even monetary policy in the classical model is irrelevant to real activity, and its

Figure 3.3 Impact of a tax on savings (or investment) on the labor market and aggregate demand and supply.



excessive use will only lead to inflation. Hence, the governing philosophy advocated by the proponents of the classical model is one of *laissez faire*, or "hands off." This governing philosophy dominated economic policy debates in the United States and much of Europe during most of the late 1700s and 1800s.

The classical model has framed the debate on business cycles for most of the last 230 years because of its simple and intuitive explanation of the way that the economic world works. Throughout most of its history, however, even when it was the dominant business cycle theory, the classical model has come under heavy criticism for a number of reasons. First, the irrelevance of aggregate demand is troubling to many economists. Is it true that things such as monetary policy or exogenous changes in consumption have no direct effect on real output? Second, the assumption of perfect competition has also been questioned. Are prices and wages really perfectly flexible? Do firms and households really have perfect information about existing conditions in the economy? Another important implication of perfect competition is that financial systems play essentially no role in propagating business cycles; financial systems simply rise and fall in response to changes in the general economy. Finally, the assertion that recessions are driven by falls in aggregate supply seem implausible to many, especially following the events of the Great Depression. It became increasingly difficult to argue during the 1930s that Say's Law was plausible when excess supplies of goods existed throughout the world and unemployment in the United States stood at 25 percent.

CONCLUSIONS

The Great Depression completely changed the study of macroeconomics in general and business cycles in particular. The Great Depression focused the attention of economists on both the costs of output fluctuations and on the inadequacies of their existing theories. However, the more modern business cycle theories that were developed subsequently, such as the Keynesian model that is discussed in the next chapter, looked to these earlier models as a starting point of inquiry. By identifying many of the critical components of business cycles—such as changes in technology, expectations, investment volatility, spending multipliers, the money supply, public policy, the incentives to work and invest, and imperfect competition—these early theories laid the foundation on which much of modern macroeconomic theory has been built.

SUGGESTED READINGS

Grand Pursuit: The Story of Economic Genius, Sylvia Nasar (2011): A narrative account of the historical dramas that surrounded and influenced the thinking of many of the great economists discussed in this chapter as well as in later chapters.

The Worldly Philosophers, Robert Heilbroner (1986): A lively and readable discussion of the lives and ideas of the most influential early economists, with chapters on Smith, Malthus, Mills, Schumpeter, and Keynes.

THE HISTORY *of* BUSINESS DEPRESSIONS

BY

OTTO C. LIGHTNER

A Vivid Portrayal of Periods of Economic Adversity
from the Beginning of Commerce
to the Present Time

BURT FRANKLIN
NEW YORK

had more to do with the Revolution than has ever been recorded in history.

The Colonists had outlived the barter days of their early history. They demanded a medium of money exchange outside of the English specie, distribution of which was controlled from the other side of the water. There is no doubt but that the English government aided in bringing about the depressed economic conditions because of the spirit of revolt that was growing in America. England naturally did not want the Colonies to build up a monetary system of their own. It might later be used to finance a revolution; therefore the decree against the issue of colonial paper money. Students of economic history agree that the plan on which this paper money was issued was financially sound in principle, which fact cemented some of the more conservative element with the radicals. When the war broke out the Colonists had been through a long period of depression. They had no accumulation of wealth to fall back on and no system of money of their own with which to finance the conflict. The Continental Congress was only an emergency body with little authority and no compelling power, yet at the beginning of hostilities this congress authorized the first issue of paper money to an amount equivalent to two million pounds. A total of $241,552,780 of this paper money was issued. As the amount was so enormous for those times, and greatly in excess of the actual needs of the people, the different states failed to support their credit and the bills began early and rapidly to depreciate. The Continental paper dollar fell to the value of two or three cents in silver, and at that time an expression synonymous of utter worthlessness, "Not worth a continental" was started—an expression that we still hear to this day.

Thus did our colonial ancestors experience these cycles of business in their repeating monotony, the same as we of the Twentieth Century.

CHAPTER VI

CRISES, PANICS AND DEPRESSIONS DEFINED

In our national history there has been twenty-one major business depressions. In addition, there have been nuerous local disturbances or temporary setbacks that might be classed as minor depressions. Those described in this book, however, are the ones which carried business below the normal line as shown by official statistics. Various writers, sometimes for a particluar end, have ascribed certain depressions to certain years, but the unfailing truth of statistics does not bear them out. Some claim that we had business depressions in such years as 1867, 1882 and 1900, but the most authoritative statistics show them to be normal years.

Our eagerness to make progress, and our constantly increasing population, make it sometimes appear that we are having depression when in reality statistics show that we are only standing still. When we are passing through normal times we do not seem to know it; our mind wants to tell us that we are in one state or another, either boom or depression. When times are not actually booming, we think they are depressed. Such is the American spirit.

We probably have the most severe depressions in this country because of our inane desire to make money rapidly, or in the language of the street, "to get rich quick." Therefore we take long chances, emboldened by examples which we see on every hand. We live in the only country in the world where a person can make a million over night, so to speak. A large element of our business people believe that liberality pays and that we can make money by spending money. A foreigner who visited us said we are a great people because "we spend more accidentally than we do on purpose." Our individualism leads to recklessness. Then

when some untoward incident happens the bubble bursts and we are called to account by the natural order. It can be seen, however, that we are getting over our individualism to some extent. Our government is becoming more paternal, and we lean more and more on our neighbor and co-operate more extensively with our competitor. The gambling element in our business is being routed to some extent. We demand greater stability in business, and with this movement we are eliminating many panics and making depressions less violent and destructive. The ambition of the average American is in the direction of money. Money brings him power. A generation back the spectacular American would risk his last dollar on the chance to win big stakes, and when he failed he carried many others with him. In recent years there have been some changes in this procedure because the rest of us do not care to be pulled down by the gambler, and his tactics are being disclosed and discounted.

The best definition of what we call a commercial cycle is given by Lord Overstone: "A state of quiescence; improvement; growing confidence; prosperity; excitement; overtrading; convulsions; pressure; stagnation; distress; ending again in quiescence."

The progress of the world and the advancement of civilization has gone forward in rising and receding waves. The world has been afflicted with economic convulsions at periods the same as it has been with war and pestilence. The phenomenon of national or world depression may be likened to the "blues" which come over most individuals. The great writer, Defoe, in 1728 said: "The prosperity of a nation rises and falls just as trade is supported or decayed."

A panic is a sudden outbreak or fit of hysteria in financial circles. It is a frantic effort to get hold of money either by withdrawing deposits or selling securities for fear of loss.

A crisis is a brief period of acute strain and may be either financial or commercial; financially, because of a

stringency in the money market and commercially, because of uncertainty from various underlying causes.

A depression is a state of lowered vitality of more or less lengthy duration in financial or commercial circles or both. Usually depression is brought about as a result of panic or crisis, although that rule is not invariable. A panic breaks suddenly, although it may have been smouldering for a long while, only waiting for a match to touch it off. A crisis is the peak of a multiplicity of troubles which have come to a head. If a crisis is not promptly and properly met, it will break out in panic, but with the proper application it will pass off without affecting the industrial structure to any great extent. Crises occur, as a rule, at the height of periods of great activity and speculation. They usually mark the close of such periods and the coming of depressions.

The literal definition of the word "depression" is: state of dullness or inactivity; a protracted season when business falls below normal. A depression is a decrease in the rate of production in wealth, both by lack of power to buy by one class and unwillingness to buy by another class.

Sometimes we recover from depression quicker when it is accompanied by a panic, because when the financial structure is threatened all the resources available to the Government are thrown into the breach and the currency is placed where it will do the most good and bring quicker relief. Where no panic accompanies depression it is often allowed to wear itself out, which is a long and painful process. Business depressions are not necessarily the outgrowth of panics or money stringency, although with few exceptions they have followed that phenomenon. In the short depression of 1914, as a recent instance, there was neither panic nor money stringency, but purely an uncertainty which prevailed on account of the outbreak of the European war. A crisis often marks the culmination or turning point from expansion to liquidation and accompanying depression. It is the result of the use or abuse of capital

leading to exhaustion of funds. Webster describes crisis in this manner: "The point of time when it is decided whether any affair or course of action must go on or be modified or terminate; a state in which a decisive change one way or the other is impending; specifically, a time of difficulty, danger and suspense in commerce or finance."

An essayist on the subject says: "Unless new resources are placed in the breach crisis will lead to panic. In 1907 the United States Treasury was too late in coming to the rescue of the New York banks, which caused a panic. The crisis of that year occurred several months before the panic broke in October."

A crisis is something we will always have, but with proper legal and economic safeguards provided, the danger can be avoided through the same process as the signal system on a railroad. We should have reached a station now where we can safeguard against panics by being prepared for such crises as unlooked for conditions might bring about. While there can be crises without panic, there can be neither crises nor panics without depression, either local or general.

Panics do not necessarily bring general depression. We have had many panics that have passed away without affecting more than the financial centers, and these only temporarily. Some of them never got on the first page of the newspapers. As to whether or not a panic will lead to depression depends upon whether its force has broken the credit structure. If the prosperity phase of the cycle has not run its course, and inflation has not reached its height, a panic will have little effect on business in general. If, however, it happens at a time when inflation and speculation have run rampant, and the elasticity of credit has reached its limit, then depression will result because there are no resources at hand to stem the evil effects.

The depressions of 1837, 1857, 1869, 1873, 1893 and 1907 started with panics. Such depressions as 1809, 1819, 1847, 1914, 1920 were not accompanied by panics, although they set in following crises.

From medical science we learn that anything that stimulates the heart will bring an indirect reaction. The same may be said of our economic life.

Bagehot expresses it well: "At intervals . . . the blind capital of a country is particularly large and craving; it seeks for some one to devour it, and there is 'plethora;' it finds some one, and there is 'speculation'; it is devoured, and there is panic."

Panics, crises and depressions are often interlocked. Back of the entire structure of business, however, is money, and some details of money panics and crises here are given when they are directly responsible for the depression of the period. Only those panics directly bearing on trade depressions are recorded here. England has had no panic since 1866, although she has had a number of severe and protracted industrial depressions. Not even the Baring failure of 1890 caused a panic.

Men writing of their day unanimously say that the people were in much better condition to withstand the shock of the depression about which they wrote than were those of previous times. This shows that as the decades go by we have at least made some progress in softening the blow, spreading the periods of frequency and preparing resources to withstand the strain. Depressions run their course in all countries. France particularly suffered from depressions at the end of the Eighteenth and beginning of the Nineteenth Centuries. Had we not declared our independence when we did, it is doubtful whether we would have received any help from France. After her war with England, which was raging during our revolutionary period, France's finances were in such a condition as a result of a terrific depression that it is a practical certainty she would have been unable to render us any help whatever.

All writers agree that the most severe depressions occur in countries whose business is highly developed, and this is obviously true because there is more money in circulation, more commodities and securities changing hands and, there-

fore, more possibility for wide fluctuation. In the older countries, such as France, Germany and Italy, depressions have been less violent than in America, which was new and on a more speculative basis. For one hundred and fifty years previous to 1844 England experienced the most desperate panics. Her money then was placed on a sound basis and the government practically took control of the Bank of England. They have not suspended specie payment since that time.

In the world-wide depression of 1920 Japan was the only important country that experienced an actual old-fashioned panic. This was no doubt because of the fact that her financial system lacked a sound basis and her inflation was so extraordinary that a panic was inevitable when the turn came. A country in a state of rapid development is more exposed to fluctuations than an older country whose values have become stabilized over a long period of years.

Consular reports, as filed with the Department of Commerce in Washington, reveal business depressions in every country at different times, or at the same time. Business depressions usually follow the accumulation of idle capital in the banks in the form of deposits, the swelling of the cash reserves, and the reduction of commercial loans.

Newton believed that the voluntary actions of men en masse are subject to the Law of Action and Reaction. Says a contemporary: "We look upon a mob as the last thing which would work in accordance with scientific law, but psychologists tell us that the mob is one of the best illustrations of Newton's Law of Action and Reaction."

There is more in that than one would credit on first thought. Men's minds follow the spirit of the times, but what creates that spirit often requires deep study to ascertain. We know that we have the phenomena of political uprisings, racial upheavals, the rise and passing of social fads or fashions. These pass away and oftentimes look foolish to us afterward. The phenomenon of the business cycle affects our minds in the same way. When a spirit of pros-

perity prevails, people's minds run in that direction and they are entirely over-sanguine. Then the tide turns, they lose confidence, and all people talk about is disaster. We saw a perfect example of this in 1920. There was no panic, no untoward incident, but a variety of small local conditions that started men talking hard times. Early in 1920 the highest peak had been reached; buyers were determined that they would not pay the exorbitant prices asked. It therefore was to their interest to talk hard times and predict depression so as to bear the market. This may not have been a major cause of the depression, but it all had its psychological effect and spread rapidly, and actual conditions followed the thoughts that were in the minds of the people.

Waves have come over the United States that historians now look back upon and find almost inexplicable. They simply must be attributed to a state of mind, a mania that existed at the time. Admittedly, if we have these periodical social phenomena, there may be something to the claim that we can have economic phenomena as a result of a peculiar state of mind. We can readily see where theorists have some foundation to stand on when they point out that nature is in itself a succession of waves. The tides of the ocean have never been explained; epidemics appear and reappear; religions take hold of people and die out. Who can explain the Salem witchcraft, if it was not purely a craze that temporarily affected the minds of the people? How can we account for the waves of resentment that swept our country in its early years, at one time against the Quakers, again against the Baptists, still later the Anti-Masonic outbreaks, the "Know-Nothings," the Ku-Klux Klan, or Anti-Catholic movements? Such phemomena have swept through our history from time to time; they could not be explained at the time and have never been explained since. But business and financial panics are not altogether the result of fear or a state of mind. There are deep underlying conditions which must be met by real action.

It has been a practice since the days of the Mississippi Bubble to legislate against business depression, and from time to time legislation has helped. Hard times will almost invariably turn a poltical party out of power. Statesmen have repeatedly promised on the stump relief from distress, and after getting into office have taken the stand that economic conditions could not be changed by legislation.

In times past economists have gone to a great deal of trouble in writing books and articles on the causes of depression, and many were quite sure that they had found the seat of all the trouble. Today, causes they attributed are entirely removed and yet we still have depressions. A century and a quarter ago Adam Smith insisted that the production and importation and exportation of corn was the one controlling barometer of business. He said, "the money price of corn regulates that of all other home-made commodities."

In my opinion, Ricardo, himself a successful business man, wrote far better on economic questions than Adam Smith, whose admittedly classic works are the bible of theoretical economists.

History indicates that we have a general depression on an average of every nine or ten years, some more severe than others. Sandwiched in between, about every five years, there has been a minor depression or temporary setback. Statistics prove that business has never remained below normal for more than three years, and, on an average, only a year and a half. While production is shown not to remain below normal for more than this average, it may remain at normal for three or four years, after which time great upward strides are made and a boom usually sets in.

Our panics have usually occurred in the Fall of the year when finances are ordinarily strained on account of crop-moving demands. The crises of 1837, 1847, 1857, 1873, 1890 and 1907 all occurred in the Fall. The minor crises nearly all occurred in the Spring, breaking out in March and May. It stands to reason that there is no accurate regularity as to the time of arrival of depressions, because if

that were true safeguards could be taken that would to some extent eliminate depressions.

One of the most interesting stories bearing on this subject is that told by a Chicago real estate man, which gives the history of a quarter acre of land in the heart of Chicago. The story tells of its original value at $20.00 in 1830, when Chicago had a couple of hundred people, and how it rose and declined through the vicissitudes of boom and panic, each succeeding wave of good times carrying it higher and making it more valuable, reaching a value of $1,250,000 in the nineties and probably two or three times that today.

One early European writer referred to *America as a backward country*, giving his opinion that backward countries which produce raw material largely for export felt depressions far more than manufacturing countries. He said: "The specialization impressed upon a backward country by commerce with advanced industrial countries, confining it to growing cotton or wheat or sheep or wine, exaggerates the irregularity imposed by nature upon its productivity, by making it subservient to the fluctuating demands of distant and wholly incalculable markets."

There is no one outstanding cause of depressions, unless it be speculation, and all crises can hardly be laid to the door of this evil. We have had depressions caused by war, currency inflation, political changes, and many other causes. One panic, that of 1857, was caused largely by too much gold. This will probably be a revelation to the average citizen, because in our day we have heard so much of lack of money as a cause of depressions. The discovery of gold in California in 1848 flooded the country with great quantities of gold until it became cheap. This gold reached the East in such abundance that it brought about a development far beyond the needs of the country at the time. These new enterprises, together with needless numbers of new banks, could not pay dividends, with the result that confidence was undermined and panic ensued. However, this is the only depression on record caused by too much gold. In practically all

of the others the question of too little gold entered, unless an exception might be made in the depression of 1920, when we had so much gold that the exchange rate was decidedly against us, causing us great loss of foreign trade. Periods of abundant gold have their handicaps the same as periods of lack of gold have theirs.

In classifying our depressions five can be attributed to financial panics, and these are the worst in our history. These were in 1819, 1837, 1857, 1893 and 1907. They brought the most far-reaching effects because confidence in the financial system itself was shaken. When people lose confidence in the value of the currency that is handed them in payment for labor or commodities, it takes a long time to recover. In each of these periods a new system of money had to be adopted and the old financial system reorganized.

Herbert Hoover recently said there had been fourteen depressions since the Civil War. No doubt, included in that number were some minor crises that were largely confined to Manhattan Island. The old idea that Wall Street is a barometer of the business of the country has long been exploded and, to a large extent, its manipulations have but little effect on the balance of the country.

The history of our nation has not been the steady triumphal march so often depicted, but an irregular growth interspersed with periods of depression in length equal to those of prosperity.

CHAPTER VII.

THE DEPRESSION OF 1785-89

Following the Revolutionary War, the country went through an experience similar to that following the late World War. For the three years 1782, 1783 and 1784, following peace, conditions were fairly prosperous because of the reaction from the strain, the jubilant feeling of victory, and as a result of war demands and the comparatively abundant specie left in the country by the British and French armies. But this was not to last long. The brief period of over-trading led to the depression of 1785 to 1789. The specie quickly left the country for payment of imported goods, and industry and commerce were hampered by the absence of a good monetary system.

They also suffered severely from the falling prices and the loss of the markets that were now more than adequately supplied, as regards many articles, by importations from Europe, mainly from England. Not only did peace in England and other European countries affect our exports adversely, but what wealth we had was soon spent in supplying our urgent needs from those countries.

American merchants had become embarrassed and were unable to pay for the goods they had bought on credit. The position of both producers and traders in the United States was made much worse by the closing of the British West Indies to American shipping. In 1785 the panic came. The monetary situation was deplorable, not only because the coin had been exported to pay for imported goods, but also from the fact that the Confederation had no authority to coin money and to establish a uniform system of currency.

Politically and economically that was the gravest crisis in American history. Both the government and the people were bankrupt. There was no money to pay the ministers to

CHAPTER XXVIII

CAUSES OF DEPRESSIONS

Theoretical Causes.—In the early part of the Eighteenth Century British merchants and financiers spent much time worrying over their relative cash basis as compared with other countries, and sometimes studied that matter so intensely that they lost all sense of the real proportion of things, and thought that the nation was being ruined because the importation of gold and silver was hindered or stopped. Wise old Joshua Gee, who wrote (1730) "The Trade and Navigation of Great Britain Considered," ended his book with this paragraph: "The trade of a Nation is of Mighty Consequence, and a thing that ought to be seriously weighed, because the Happiness or Misfortunes of so many Millions depend upon it. A Little Mistake in the Beginning of an Undertaking may swell to a very great one. A Nation may gain vast Riches by Trade and Commerce, or for want of due Regard and Attention may be drained of them. I am the more willing to mention this because I am afraid the present Circumstances of ours carries out more Riches than it brings home. As there is cause to apprehend this, surely it ought to be look'd into; and the more, since if there be a wound, there are Remedies proposed, which, if rightly applied, will make our Commerce flourish and the Nation happy." He had studied the trade for the year 1723, and had found that he could trace the export of more than a hundred and seventy tons of silver and about eleven tons of gold. In another place he says, "yet so Mistaken are many people, that they cannot see the Difference between having a vast treasure of Gold and Silver in the Kingdom, and the Mint employed in coining money, the only true token of Treasure and Riches, and having it carried away; but they say Money is a Commodity like other Things, and think themselves never the poorer for what the Nation daily exports."

Investigation of trade cycles and causes of depression bring on an interesting study. In late years it has been demonstrated, notably in 1901, 1905 and other instances, that Wall Street can have a regular old-fashioned panic and the rest of the country go on unaffected to any degree. Such might be called "financial hysteria" and be confined to the "Street." On the other hand, we may have business depression, such as came in 1914, resulting from uncertainty due to the outbreak of the European war. At that time Wall Street prospered by making foreign loans at usurious rates, while the business of the rest of the country was stagnant. Wall Street panics are usually brought about by the selling of securities by holders who feel that the peak has been reached, particularly when some untoward instance happens which might look like a setback was ahead. A large number of sellers appearing at the same time naturally causes the market to recede. A few days of sharp drops causes the holder to become frightened and a general unloading ensues, and the legitimate investor often follows the speculator, but too late. By the time he has awakened to the fact that a genuine stock panic is on the value has sagged considerably. Such declines are caused by or are followed by stringency in the money market, and others are forced to sell because their margins are exhausted. The decline continues with disastrous effects until a point is reached where many times the stock becomes an actual bargain and it is picked up by that element of fortunate people who always have money through steady incomes or are able to borrow under any circumstances.

A friend, during a game of cards where the luck of the players was going bad, used to say: "Never mind, your luck will change bye and bye—and get worse." That well describes some of the depressions we have had. The de-

pression of 1848 did not follow any particular period of inflation or expansion, but came on during very normal times. Likewise the depression of 1884. The depression of 1893 also followed a period of six years which were below normal rather than above normal. In other words, bad times got worse. A class of economists hold to the doctrine that trade cycles follow the fluctuations of precious metals. They attempt to explain that scarcity of gold means retrenchment and a stagnation, and that a great output of gold brings expansion and prosperity. How, then, do they explain the depression of 1920 in the United States, which had over half the world's gold, and a depression of equal volume in Great Britain, which had the next largest gold reserve, as against the unprecedented prosperity in Germany, which had very little gold? Another school of writers claims that depressions are caused by unsound money, in the form of too large coinage and circulation of silver. That theory has been generally accepted in this country because of the unfortunate experiences we have had with silver money. But, on the other hand, we can point to many countries that are and always have been on a silver basis, and they have suffered less from severe depression than have we in this and other gold standard nations. The money of Spain, known as a silver country, brought a premium during the World War, and on the western continent up through history Spanish silver money has always been at par and usually brought a premium. Thomas Jefferson favored putting this country on a silver basis, patterning our currency after the Spanish coins, which circulated freely and were in great demand in some of the colonies for thirty years after the Revolution. The examination of financial history shows that there is no reasonably close relation between depression and the output of precious metals, either gold or silver. It is known that the decade ending with 1850 shows the output of gold doubled, compared with the previous ten years, yet that decade was marked the

world over by financial reaction. Our panics of 1857, 1873 and 1907 all occurred during periods when there was a great inflow of new gold.

Still again there is another group that sticks to the money question as the root of the depression evil. These probably come nearer to a correct diagnosis than the others.

The issuance of paper money of unsound backing has undoubtedly caused several serious depressions. The use of this money led to extravagance, over-expansion and wild speculation, so that a halt was bound to come. The issuance of paper money within reason as a circulating medium is necessary. We are so used to paper money that in these days the tendering of a silver dollar causes curiosity if not resentment. We have already entered the Paper Age. We are reaching a point where we realize there is something of basic and intrinsic value in the world besides gold and silver. These metals may always be used as a basis of money issues simply because of their rarity, but they will grow less and less in importance. The Bolshevists of Russia tried the age-old theory that money is unnecessary, and they will find to their own surprise and to our chagrin that they are half right. When we are further along money will be necessary only as a paper medium to represent recognized essentials of mankind upon which it will be based. Our Federal Reserve Act provides that we may issue paper money on something besides gold and silver and the notes still be more than a mere promise to pay. Our Federal Reserve notes are based on certain approved securities which are far more necessary to the progress and welfare of mankind than gold and silver. True, these notes are redeemable in gold, but it is well known that the issues outstanding are ten to twenty times as great as the gold reserve back of them. As we go along the Federal Reserve Act will probably be so amended, and at the same time strengthened, that our money will represent the accumulated wealth of our

brains and our toil, which is the finest intrinsic value that God has created.

There have been minor depressions in our country that are really hard to analyze, with no apparent causes. In the case of our major depressions, however, the causes may be well defined. At different times various governments have attempted to analyze depressions and if possible find a remedy. Among these are the United States, Great Britain, France, Belgium, Germany, Switzerland and Italy. A variety of causes have been advanced by scores of writers, economists, investigators, financiers and business men. Some are old and have been eliminated by the march of time. Some are obviously of little consequence, while others are very apparent causes and these are defined later. Among the causes that have been advanced at different times are:

Underconsumption.
Large Exportations of Gold.
Large Importations of Goods.
Effects of Fear of the Tariff.
Weak Banking Systems.
Presidential Elections.
Unpopular Taxation.
Lack of Foreign Markets.
Unemployment.
Want of Confidence.
Inflation of Values.
Variation in the Cost of Production.
Unpopular Legislation.
Unreasonably High Prices.
Centralization of Capital.
Manipulation of Money Power.
Depreciation of Currency.
Withdrawal of Money from Circulation.
Contraction of Currency.
Inflation of Currency.
Suspension of Specie Payment.

Disturbed Value of Gold and Silver.
Lack of Fixed Policy in Governmental Affairs.
Extravagance, Public and Private.
Inefficiency of Labor.
Large Immigration of Pauper Labor.
Speculation.
Depressed Value of Farm Products
Exhorbitant Transportation Costs.
Artificial Stimulation.
Timidity on the Part of Money Lenders.
Bank Failures.
Conflicts between Capital and Labor.
Buyers' Strikes.
Enforced Economy, Public and Private.
Starting Needless Enterprises.
Political Distrust.

At different times various causes, more or less absurd, have been ascribed, many of them of course having little bearing on the question. Among them are:

"Withholding Franchise from Women."
"Want of Training of Girls for Future Duties."
"Faulty Laws Relative to the Guardianship of Children."
"The Custom of Issuing Free Railroad Passes."
"High Telegraph Rates."
"The Use of Tobacco."

Professor Frederickson, of the University of Copenhagen, earnestly believed his theory that depressions "were due to the minds of men" or the result of "mental process."

Many of these theories have been disproved, as for instance, that relative to the exportations of gold. Let us refer to the case of the French nation, which in 1871 paid Germany a large indemnity in gold. Yet depression followed in Germany in two years, while times were normal or good in France.

Sun Spots.—Some years back Professor Jevons advanced

a theory which attracted considerable attention and many believers, viz., that cycles of depression followed the appearance of sun spots. He sought to prove that sun spots occurred in the history of England during the dates of her financial crises which he named as 1701, 1711, 1731, 1742, 1752, 1763, 1772, 1783, 1793, 1804, 1815, 1825, 1836, 1847, 1857, 1866, 1878. In seeking an explanation of this strange coincidence the Professor claimed that sun spots caused defective harvests which, in turn, brought on industrial disaster. Both astronomists and biologists, however, failed to agree with the Professor and the theory has long since been discarded.

Over-Population.—It has been held in Europe for some time that depression was caused by over-population; that there was not sufficient employment and too many had no buying power. Yet we have had depressions in America of still greater severity when the country was sparsely settled and even now it certainly cannot be said that this country is over-populated.

Over-Production.—The cry of over-production goes up, particularly among theorists, as a cause of business depression. Yet there has never been a time, even in our most prosperous years, when there were not thousands in need who would gladly give labor or its equivalent for the very articles that were claimed to be over-produced. Many students of economy laid the distress of 1920 to over-production, as was the case in many previous depressions. This was a quick change of front from a year preceding, when all the professional economists told us that we must have greater production in order to relieve high prices and profiteering. In 1919, in the face of the fact that prices were then outrageous, salesmen went up and down the country with the stereotyped phrase that they were doing the customer a favor by selling at prices quoted and that the next order would cost more because prices were sure to rise still higher. They claimed there was an under-production and

that raw material and labor could not be obtained to supply the demand. Then came the buyers' strike, and almost over night we switched the blame for our predicament from under-production to over-production. Over-production is responsible, more or less, for our temporary depressions and set-backs, yet that is a wrong diagnosis of the primary causes for the sickness of America in 1920. Stimulated by universal demand manufacturers, and farmers in particular, produced abundantly. Of most commodities we always have a surplus, and what surplus we had could easily have been taken care of had international finances been anywhere near normal. Foodstuffs were rotting in this country while China and half of Europe were starving. Europe also had urgent need of the products of our mines and mills, and our surplus would ordinarily have been shipped there had not their finances been strained to the breaking point.

We had a surplus, not from any cause of over-production, but because of our time-worn custom of producing a surplus, and the use of the word "surplus" in this connection gives the unthinking man an entirely erroneous impression, for it gets the cart before the horse. It implies that foreign trade is a device to get rid of a surplus product, whereas the so-called "surplus" was brought into existence because of the demand originally created by foreign trade.

Excessive Saving.—Several writers have come forth with articles taking the stand that excessive saving is a cause of depression. These writers put forth earnest efforts to show the fallacy of saving, but their arguments are without merit. We know that money saved is not taken out of circulation at all, but the savings institutions lend it to borrowers and it is put to work in production just as if the original owner had spent it. The only time the question of excessive saving might enter into depressions is when the depression is at its height. When banks are liquidating to an extreme and people are saving to an extreme, a bad situation is certain to be created.

The solution is that people must save more in good times and the banks must lend more in bad times.

Foreign Investments.—We are facing today a new situation that might in the future be agitated as a cause of depression in this country. This factor is the large investment of American capital in foreign countries. English economists of fifty and a hundred years ago complained that their industrial conditions were depressed because of enormous investments of British capital in foreign countries. No doubt that did drain England of money for the time being, although in later years those investments were a source of great wealth to England. It is easily possible to see that in this country the matter of foreign investments can be overdone, bringing temporary detriment to business in this country. Some insist that we are still a new country, that in every locality there are great possibilities for development and a need for investment capital. Yet enormous sums of American wealth during the depression of 1920 and 1921 were invested in buying the Hapsburg estates in Austria and Hungary, in South American oil fields, in Russian concessions, in Cuba, Mexico and the Orient. It is pointed out that these investments were necessary to secure future supplies of oil, rubber and other raw materials, and probably we missed the money less in 1920 and 1921 than we would in normal times, because of the great wealth poured into this country during the war. Most of these investments were made as a result of exchange of loans already owed us, and will no doubt benefit us in future years. In 1846 John MacGregor in his "Commercial Statistics" described the condition of Holland during the progress of her decline. He called attention to the fact that a great part of her specie and capital was then being diverted into investments in the manufacturing trade and securities of foreign countries, which permanently exhausted and weakened the power and energy of Holland. It was soon found that where a man's money went he eventually followed, so that not only the

money but the life blood of Holland went to other countries; not only to her colonies, some of which she later lost, but to many other countries. American investments abroad may not cause our best business men to follow, but unless it is a gradual process it is certain to be reflected in our domestic industrial welfare.

Falling Prices.—Carroll D. Wright, former United States Labor Commissioner, gives falling prices as one of the chief causes of depressions. His report made in 1886 on this subject is interesting and shows thorough investigation of a practical nature.

As a cause of depression falling prices is secondary, because they, in turn, are brought about by more fundamental causes. Rising prices have a psychological effect. They stimulate hope and courage, whereas falling prices cause caution, fear and depression. Falling prices may follow a financial crisis or may precede a general depression. In 1920-21 the depression could have been largely avoided if prices could have been gradually reduced in proportion to a decline in cost of production. In such a sharp fall of prices as we have recently witnessed great losses must take place and depression will follow until these losses can be made up or overcome. Low prices naturally bring depression in values of property and stocks on hand.

Mr. George Grubb, National Secretary of the Marine Engineers' Association, claimed the depression was brought about by a concerted effort of employers who wanted to squeeze labor. No doubt there was a general desire on the part of employers to discipline labor because of alleged inefficiency, although no evidence is at hand to show that this movement was organized. If it is true that the depression was deliberately brought about, which is extremely doubtful, then the employers badly mismanaged matters when they let the movement get away from them. It is certainly plain that the employers lost enormous sums of money when the buying power of millions of workers was curtailed, as well

as through the depreciated value of their own enterprises arising from curtailed earning power. For instance, a manufacturing institution might easily be worth a million dollars as a going concern, if its output is being consumed and it is earning healthy dividends. Yet it is also possible that the value of that same plant might depreciate to half that amount through lack of orders, stringent credits, decreased earnings and disorganized employees. In the face of these facts what would the employer gain by a concerted movement to shut down? Thus decreased earning power will cause falling prices entirely outside of the natural order of supply and demand.

Changes which take place in the prices of commodities may be due either to changes which affect the commodity only or, since price is the relation of the commodity to money, to changes which take place in the value of money. Change in price may therefore arise from a change in (1) the demand for, or (2) the supply of the commodity. Changes of this nature are reflected in the prices of one commodity as compared with another; their positions in the price scale change. It may be noted that when prices change "by reason of differences in the demand for, and the supply of commodities, some commodities may rise in price while others fall. Such readjustments in prices of commodities are constantly taking place. On the other hand, should price changes be wrought by changes in the value of money we should expect uniform action upon prices—a general rise of prices or a general fall.

"The study of prices has long been a subject of particular solicitude, not only to the men actually engaged in business but to the students of business affairs. To separate the general from the particular, economists have invented what is known as the index number. The purpose of this device is to ascertain the average change in prices of a group of commodities. The prices of a given period or a given time are selected as a base, and the price of each commodity

is determined," says Joseph French Johnson, dean of New York University School of Commerce, Accounts and Finance, who tells in "Economics of Business" how the method of tabulation arrives at a scientific price barometer. "The advantage of taking as a base the average price for a series of years is that this course makes it possible to eliminate as far as possible the influence which, in a shorter period, unusual conditions might have had on the price of a particular commodity. When the base price is ascertained other prices during, before and after the period of the base are expressed as percentages of this base. Commodities A, B, C and D will each have a different base, but when the base is turned into a percentage it becomes uniform for all, namely, 100. We may suppose that at a later period A is represented by 110, B by 106, C by 102 and D by 98. Now, if these figures be averaged the result is 104, and this represents for the group an average rise in price of 4 per cent over the base. One of the commodities indeed declined in price, but this does not alter the fact that the general tendency is to advance the price. In following the method, briefly indicated, of constructing an index number, each article has been given an equal importance in determining the change. If instead of abstract designations, A, B, C and D, concrete articles had been named, such as wheat, iron, wool and indigo, there might be some doubt as to the propriety of giving each an equal importance in fixing the result. To avoid such questionings various methods have been devised to give an appropriate weight to the different articles, such weights being arranged in accordance with the foreign trade, or with the estimated national consumption, or the expenditure of workingmen's families."

None of these highly complicated methods have, however, led to substantially different results from the simple arithmetical average. It is clear that if each article moved upward in price exactly 5 per cent it would not matter how many articles were added to the list or how they were com-

bined, and one could not get any other general result than a 5 per cent advance. If some articles increased 4 per cent and others 6 they would, if equally divided, show an average of 5 per cent, but no method of combination could make the advance less than 4 or more than 5 per cent. In other words, in a group of prices the general tendencies outweigh the particular ones, and no combination of different results, according to any plausible system of weighing, will emphasize the particular tendencies at the cost of those which are general.

Economists agree that there is not a level of prices, whether it be high or low, which causes either prosperity or distress, but it is the conditions brought about by either that brings the need of readjustments. In case of falling prices being the direct cause of depression in a given industry where production costs have been high and losses entailed, lower prices do not of course necessarily mean depression. If production has been large the reduced cost lowers prices and sometimes stimulates trade because of greater consumption. Through a period of depression prices gradually decline until the bottom has been reached. Sometimes prices go down beyond reason because of the panicky feeling among buyers, in which case production must stop, bringing sharp reaction. For instance, in 1920, when cotton went far below cost of production, the result was a curtailment of acreage amounting to 40 to 50 per cent, bringing the following Fall sharp upward reaction in prices to the extent of 80 per cent. After it is apparent that the bottom has been reached prices will start an upward climb, bringing a feeling of hopefulness and activity. Buyers will not buy on a falling market for more than immediate demand, but they will buy liberally on a strong or rising market, because of the speculative chance to make more than a normal margin on the purchase.

Falling prices are also brought about by the recurring necessity for adjustments of credits. When the cycle of

liquidation comes manufacturers and merchants hasten to turn stocks into money in order to meet loans coming due. Many times these stocks, if held and marketed in an orderly way, would bring normal prices, but when loans are called money must be secured and stocks are sacrificed at reduced prices. This has a tendency to break the market. Forced credit liquidations are an important factor in producing falling prices and consequent depression. Banks are, however, more and more willing today to carry the borrower until such time as he can market without too great a sacrifice. It has been calculated that the loss on industrial stocks during the depression of 1903 exceeded $3,000,000,000. The depreciation of securities of 1907 and 1920 was much greater, and if stocks or raw material and merchandise were taken into consideration the total would be very greatly increased. It was too much inflation in flush times that brought conditions where falling prices were inevitable.

Exports of Gold.—Gold is, of course, being more or less constantly exported to settle balances, but a large and continuous outflow of gold denotes an unhealthy condition back of it. It is likely to mean a money crisis ahead and probably ensuing depression. When the export of gold is attended by a scarcity of money and a marked increase in the rate of discount, it is a decidedly unfavorable indication. Unless the flow stops and the tide turns it may be taken for granted that a crash will follow. The big financial centers watch the gold situation very carefully, and money conditions are very sensitive to the gold situation. Financiers who are in a position to watch gold movements often have the inside track, so to speak, and are able to cover before a crisis. It is these "gold sharks" who are invariably found to be the men who profit from depressions. In other words, they are experts in buying cheap and selling dear. Gold has a close bearing upon our business life and the

average business man should watch its trends closer than he does.

Bad Banking.—This should properly come under the head of speculation. Unsound banking has caused a great deal of difficulty for business, and this is not altogether the fault of the banker. On the whole he is generally conscientious in desiring to aid in the development of the country. Newspaper files of our periods of depression show that almost invariably the public press attacked the banks as the cause of all the difficulties. In 1920-21 business men claimed that they were left to shift for themselves while the bankers watched and preserved their own interests.

In times of prosperity men become optimistic beyond reason and enter into transactions far beyond their means. The mania of taking a chance becomes widespread. Then the banker finds out that notes are not being met and a large portion of his customers have been borrowing for speculative purposes. Often they are found dividing profits with the banker himself. The situation reveals itself the country over and contraction sets in. Then is the time for business men and investors to sail close to shore, to sell, if possible, keep stocks low and quit taking chances for a while.

We have read a great deal about bad financing during the Nineteenth Century. The early part of the present century has seen great strides made in halting the destructive pendulum swing back and forth from extravagant prosperity to panic. In former days when any financial center got into difficulty it was left to its own resources. Now, even its enemies come to its rescue because it is well understood that a run on a bank's neighbor is likely to lead to its own disaster if allowed to go its full course. Down through the years of history, as every cycle of depression is examined, we find the same old story of bad banking. It is found that the banker has invariably dipped

his finger in the attending over-speculation. The promoter is smooth enough to arrange a division of the excessive profits with the banker and the banker often makes injudicious loans when this division is hung out as a temptation. Then when the bubble bursts the banker goes to the other extreme and his tendency is to be parsimonious, often from a very narrow viewpoint and against his own interests.

Poor Crops.—While crop conditions have a certain effect on business, it is often localized and does not affect the entire business system to the extent generally believed. Let us take the year 1900. Statistics of the Department of Agriculture show that we had an area planted amounting to 83,320,872 acres, producing 2,105,102,516 bushels at a farm value of $751,220,034—an average of .357c per bushel or $9.04 per acre. The following year, 1901, a greater area was planted, 91,341,928 acres, but production was less than the year before, being 1,522,519 bushels, but with a greater farm value, $921,555,768, a per bushel value of .605c and a yield per acre of $10.09. That is a usual instance because the law of supply and demand insists that in a year of short crops the price is higher, bringing as much money to the farmer as a big crop with lower prices.

Foreign Exchange.—Foreign exchange is a barometer of world trade conditions. It is a study in itself, and all that could be written about it would fill an ordinary library. Every business man and investor should study the question, because as we progress in our commerce and it becomes more interlocked with that of other countries conditions in those countries will more and more affect our every day business life here. This subject is one of growing importance.

We do not carry on our foreign trade the same as we do the business among ourselves. Within our own borders a simple check and draft system suffices, because funds in Blaine, Washington, are on a par with funds in Key West, Florida. But when a merchant in one country trades with

a merchant in another country, there must be a medium through which payment is cleared. This is known as foreign exchange. In principle foreign and domestic exchange are the same, the difference is in the value of the money of one country as against another. Where the value of the standard money in one country is high it brings a premium, whereas the money of another country may have depreciated for various reasons and it is penalized. Where exchange is steady money in the leading countries is around par, as during the normal times preceding the World War. Then trade flows fairly evenly and there is little to fear from difficulties in that direction, outside of the ordinary business hazards. But in times of distress in different countries, brought about by political or economic reasons, foreign exchange has an important bearing on the study of business depressions. Foreign trade is done on a basis of payment in London or New York exchange, or between bankers themselves in gold specie. If by watching the daily newspaper quotations it can be seen where money of a certain country that buys a large portion of our products is depreciated, there is almost certain to be a falling off in demand from that country and, unless some other country is taking the difference, depression in those commodities will likely result. Sometimes this condition may be general. For instance, in 1920-21 the American dollar became so high that foreign countries could not afford to buy dollars in order to pay us in our own money, which we demanded. This augmented the depression because we were unable to ship our surplus out of the country to as large an extent as formerly. In normal years when trade flows back and forth in its regular channels and exchange is around par, trade balances tend to adjust themselves in the same manner that a local clearing house clears checks through a system of debits and credits, one against another. We are going to be more affected by foreign exchange in the future than ever before, because New York is now the

world's financial center. To the extent that we are called upon to finance the world we are going to feel the reflection in our own business life, and foreign affairs are going to more largely enter into our trade revivals and depressions.

Exchange between two countries is at par when a demand draft on either country sells in the other at its face value. For instance, an English pound sterling in mint value is $4.8665. Exchange therefore at par would bring $486.65 on a draft of 100 pounds, less the small banking charge. If, however, conditions bring about a change in the par value of either standard of money, the exchange rates would immediately reflect that fact. If a business man is shipping goods to England, or is dependent on customers who ship there, and a dollar is quoted at a premium over the pound, then he can expect a slowing up of orders from England until the exchange is more favorable. Thus it will be seen that foreign exchange not only affects the exporter and importer, but all of us who are dependent more or less on them. When foreign exchange is continually against us, as in 1920-21, we may expect general depression to some extent.

A premium on the dollar, as was the case in 1920-21, means that there is an abundance of gold in this country to back up the dollar, whereas a depreciating pound sterling or German mark would mean that gold reserves were either depleted in proportion to the depreciation or there was an over abundance of fiat money in circulation in those countries. Another element that enters into the trade situation is the fact that when the exchange rate is against us, that is, when the dollar is at a premium, we are likely to not only export less but to import more, because countries with depreciated money will make extraordinary efforts to export in large quantities in order to establish a trade balance and get the gold flowing back to them. Ordinarily, if we loaned a great deal of money to France, for instance, or purchased their securities, there would be a

great outflow of gold from this country to France. But during the recent war period when we loaned heavily to Europe we loaned through a process of giving bank credits in this country with the understanding that credits were not to be transferred to Europe but were to be used for purchases of supplies in this country. Thus the exchange later worked against us, whereas had we sent the gold it would have been in our favor. In this way also we became a creditor nation and at the same time kept the gold here.

The question of discount rates also enters largely into the matter of foreign trade, but does not necessarily bear directly on trade depressions in this country. When there is a panic in one country it will immediately be reflected by the exchange rates. With distrust growing in one country and reserves depleted banks will raise their discount rates, which will be followed by like action by banks in commercially related countries.

In such times the banks of a country in distress draw to the limit on their reserves in other countries, and those countries are often taxed to meet them. It is through this medium that one country is directly affected by panic in another. It does not follow that all countries are to be affected by a panic in some one country, but only those groups of commercially related countries which depend largely upon one another. Even then, with a good banking system, one country need not necessarily be greatly affected by a crisis in another, no matter how closely related.

In 1920-21 people in necessitous countries hoarded large amounts of foreign money, due to the huge profits they saw accumulating daily through the continuous depreciation of their own currency. Depression can only be remedied by finding a means of stabilizing exchange. This may be done by making loans to countries whose exchange is depreciated and help them to restore confidence, or to buy sufficient of their goods to give them a favorable trade balance, causing the flow of gold into that country. Most

nations are not willing to import goods, because it destroys home industry. But they are more willing to make loans if certain of payment at maturity. These loans simply help in the transition stage, and in time the situation will work itself out. Unfavorable exchange prolonged for more than a short time will cause the creditor country to feel the effect as much as the debtor country. When exchange is stabilized the vicious cycle is broken and economic conditions, all other factors being satisfactory, will quickly return to normal.

In times of war some countries still resort to the mediaeval practice of prohibiting the export of gold. This causes a still wider fluctuation in exchange. Exchanges are affected by the constant flow of gold and goods. This has its effect on trade in this country because exchange being against other countries they naturally can afford to buy only as little as possible, whereas the premium on our money makes it favorable for us to buy what we like. All this causes the agitation for American valuation in the tariff. The tariff schedules enacted in normal times become a mass of confusion and have effects far from their original intention in times of abnormal exchange.

Exchange can be brought to par by the simple expedient of shipping gold. But in times of stress some countries do not have the gold to ship or, as a matter of self-protection, do not wish to ship what they have. In such a case foreign exchange must be carried on through the draft system, which is generally used between countries that have a very even balance of trade. All countries do business through New York and London drafts, and these drafts can be cashed above or below par according to the gold situation and the trade balances in the different countries. The high price of drafts in Germany would encourage and stimulate the sale of American goods in Germany and would encourage buying in Germany. Likewise, high prices of drafts in the United States would encourage and stimulate the sale of German goods in this country and

discourage them from buying from us. It is evident then that a favorable trade balance, such as we experienced during the war, could not keep up indefinitely. The tide must flow out, and this is often accomplished by a period of depression.

Mr. Frank Vanderlip has proposed a billion dollar international bank for the twofold purpose of regulating foreign exchange and promoting international trade. This idea is undoubtedly good, and if put into execution would go a long way toward solving the knotty problem of foreign exchange.

Strain of Credit.—Through the agency of credit a great number of obligations payable in money are created. It would, of course, be impossible to redeem them all at one time. Against these credits there is kept a certain amount of gold as reserve. If demands for redemption lessen the quantity, it must be replenished. These demands now arise mostly from foreign sources. It can be replenished only by curtailing credits. Such a process does not lessen in any degree the amount of existing wealth, but none the less it may necessitate painful readjustments in business. Those who had counted upon the continuance of credit accommodations are forced to curtail or even abandon their operations.

"If the demand for a liquidation of outstanding credits is widespread, panic and business depression ensue. Wealth is not destroyed. But the control of wealth passes more and more into the hands of those who own the wealth, and its activity is lessened. Capital or wealth used in production is diminished, and with the decrease in capital the creation of new wealth slackens. On the other hand, in times of reviving business, the prospect of gain lures wealth into productive uses and through credit the available capital is increased." Thus back of all the alternate periods of prosperity and depression lies the question of credit. No plan has yet been found effective which will prevent these fluctu-

ations, nothing which will give credit freely when credit is most wanted. But through a wise adjustment of credit agencies much can be done to mitigate the severity of periods of stress and strain.

A time must come when there must be a contraction of over-expanded credit. At times we find the capital of the nation largely tied up in the hands of speculators who have practiced the unbelievable process of borrowing the people's money in order to increase the prices of their own necessities. As the periods come along when we work out of depressions into good times the speculator gradually starts to borrow money because he is smart enough to know that things are on the upward grade. He picks commodities on which prices are well declined and are bound to rise with greater demand. As time goes on he makes fair margins, thus encouraged he increases his holdings through greater borrowing. This continues for several years, all the time the rising tide of prosperity increases the fury of speculation when finally the peak is reached. Some unforeseen incident brings sharp reaction or a revolt on the part of the public against the ever increasing prices. Bank reserves become low from the large borrowing and then the banker becomes wary and begins to call loans. When this time comes great sums of money are found in the hands of speculators. Some of them hurry to unload if possible, taking a small loss out of their already large gains and laying low until the depression blows over. Others have to be carried by the banks until the security can regain its value and passed on to others. Thus speculation is not only responsible in bringing on our crises and depressions, but it invariably prolongs them because of the long, painful spell that is required to get conditions back to normal. During all this time we hear the constant cry: "Liquidate! Liquidate!" and the average legitimate borrower and business man and farmer are forced to liquidate many times at a sacrifice while the capital of the country and their own deposits are used to hold up speculators, non-producers, who have over-borrowed

and if allowed to fail would often endanger the solvency of the banking institutions themselves.

An English View.—Mr. J. M. Keynes who was in charge of all loans made by Great Britain during the war and author of "The Economic Consequences of Peace," gives a view on the world wide depression from the British standpoint. "The causes of these 'cyclical fluctuations' are various and disputed. Like its predecessors, the recent depression has been of complex origin. But a bad season in Asia and the miscalculations of merchants have played the biggest part. No doubt the war has been indirectly responsible, because the severity of the crisis has been due to the exceptional range of miscalculation, which the terriffc fluctuations in prices consequent on the budgetary policies of governments have brought about, and also by the inapplicability of pre-war standards as a guide to what was normal. These helped business to lose its bearings and to drift far out of its course. If we look back eighteen months, it is obvious how greatly the troubles of traders have been due, not so much to the intrinsic situation as to grave miscalculations about it. The crisis commenced, not in Europe, but in Japan. Thence it spread to the United States; next to England and last of all to continental Europe, which has not, at any time, experienced its full severity. What upset British business was the sudden drying up of the Overseas markets, India, China, Australia, South Africa and South America; and it was the collapse of the exchanges between London and many of these centers, rather than of those between London and the continent of Europe, that threw out the calculations of the business world.

There were two other factors also which multiplied the stream of commitments. Many markets had been starved by the war of their usual supplies, and were replenishing stocks. But it was difficult to know how much current demand represented such replenishment and how much of it was covered by current consumption. Lastly, the abnormal demand stimulated by all these influences was yet further

exaggerated, because merchants, experiencing an unusual difficulty in obtaining deliveries began placing orders on an even larger scale than they really wanted, in order to make sure of obtaining at least a proportion. For all these reasons merchants and middlemen in all quarters of the world over-ordered enormously. That is to say, they entered in advance into commitments on a scale greatly in excess of the current rate of consumption and at a price level above that which the currency systems of the world could support, hugely inflated though they were, when once the actual goods were coming into existence and needing finance. This necessarily resulted in an excess of stocks and, when the value of the stocks exceeded the amount of wealth which the world was voluntarily prepared to set aside in this form, the bubble burst."

Political Uncertainty.—H. Gordon Selfridge, in his admirable book "The Romance of Commerce," says: "There are enough mistakes made and poor judgment shown, as we all know, in that field of activity called Commerce; but if one-tenth of the foolishness had been employed there that has been exhibited by those who have undertaken to govern, all commerce and everyone connected with it, would have been bankrupted many times over and have sunk long since in the seas of oblivion."

Political uncertainties often retard industry. The statesman (a dignified name for politician) is often unmindful of the injury he is doing in bickering and delay. How many times has trade been halted waiting the leisurely action of the legislators! The old bugaboo that we cannot change political administrations without accompanying depression was long ago exploded. Time has proven that depressions come under the administration of one political party as well as another and it would be a sad and evil day for the American Republic if the threat were constantly held over us that we had to vote one way or have our bread and butter taken away from us.

Presidential Elections.—It is rather old-fashioned now to ascribe business depressions to presidential election years. That has been so overdone in the use of politics and proven to be so utterly without foundation that it is worth but little space. By way of information, however, the accompanying table will show the presidential election years since 1800 and the years of depression, showing that only five depressions have occurred in our history during presidential election years, two of them being minor depressions.

Presidential Election Years

1800	1816	1832	1848	1864	1880	1896	1912
1804	1820	1836	1852	1868	1884	1900	1916
1808	1824	1840	1856	1872	1888	1904	1920
1812	1828	1844	1860	1876	1892	1908	

Depressions falling in these years are:

1808 1848 1860 1884 1920

In one of these, namely, 1884, the depression was an issue in the campaign. In none of the others was there much connection between politics and business, although the depression of 1860 was obviously from political causes on account of the threatening Civil War.

Excessive Taxation.—High taxes are going to be more and more a cause of depression in this country in future generations. In our early history the government was rich beyond compare because of the enormous amount of public lands. From the sale of these the Federal treasury not only received sufficient to run the government, but divided great sums between the States. Following this period under the protective regime we collected sufficient from that source together with such internal revenue taxes as were obtained from tobacco and liquor to run the government. Then as we went into the Twentieth Century our expenses were so enormous that we began to devise means of direct taxation and the income and corporation taxes resulted.

Under our present laws, on incomes of $200,000.00 and over we exact fifty per cent. All of this, no doubt, has its effect because the incentive is taken away to some extent for large capitalists to make an effort because half of the effort, they feel, goes for naught. Let us turn to the history of the Roman Empire and examine into the causes of its decline. We will find that "the pressure of public burdens was an increasing disability that ate the very heart out of the capitalist and the labourer alike; there was no hope to inspire energy or encourage enterprise and the gradual decay culminated in an utter collapse." The exorbitant taxes collected to maintain an expensive government started the decline of the commercial life of Rome. Will history repeat in Europe and America? Money spent for taxation does not reproduce and unless we can keep money in productive channels we are bound to have depression in trade.

Dumping.—This subject is one of the utmost importance during depressions. After the Revolution when we had no organized central government, our trade was severely depressed by dumping of English goods on our market. Our infant manufactures had to close down and the trade balance was enormously against us.

Our great depression of 1819 was brought on as a direct cause of dumping European goods in this country. It was then that Lord Brougham made his famous speech in Parliament: "It was well worth while to incur a loss upon the first exportation, in order, by the glut, to stifle in the cradle those rising manufactures in the United States which the war had forced into existence, contrary to the natural course of things."

While a protective tariff law had been enacted in 1812 which gave some protection during the war, it was entirely inadequate and when peace came in Europe in 1815 followed by very terrific depression and low prices in 1816, this country became flooded with their surplus which was disposed of by the well-known "auction" system. European exporters were willing to sell at almost any price; first, to get

cash; second, to destroy the rising American manufactures. Considerable agitation swept over this country against the "auctions;" yet they multiplied and in one year $14,685,399 worth of merchandise was auctioned in this country, which was double the normal needs of the people. No wonder prices in this country fell swiftly. Imported goods were drawn into every nook in the country, causing stagnation to the American manufacturer. Merchants and farmers bought these goods eagerly, because they were cheap, but in doing so they undermined the prosperity of their own country.

The dumping of this period of "auctions," as it was called, was a nightmare to American merchants and manufacturers for many decades. Prices fell so low that merchandise brought little more than the duties. Auctioneers increased in number, wealth and influence. It was a common custom, and one well understood by merchants, that many foreign importers residing here, and who sold their goods mostly by auction, were in the constant habit of receiving two invoices for each parcel of goods. One of these was made out at a very low rate and was used to enter the goods; "the other contained the actual cost." Of course, the government was injured by losing the revenue justly due it, while American manufacturers and importers suffered materially. Of the many industrial enterprises which had been launched during the war with so much confidence, only a few had had a prosperous history. Many had been hopelessly wrecked; while others were thumping against the rocks and threatened with speedy ruin.

After the Civil War we were saved because of protective duties against dumping and naturally this subject is related to the tariff. Traders of all countries do this. We are as guilty as the others. For years our manufacturers have sold the surplus abroad at less than in the domestic market. But practically all countries are now providing against it. Following the World War our rich market and high prices were prey for the foreign trader with a sur-

plus. Everything was dumped on our market that could be found in foreign countries, particularly food stuffs, affecting the farmer very adversely. This was one of the primary causes of the 1920-21 depression. Had we a protective tariff or even an anti-dumping law our commodities would have been given a chance to seek their normal level gradually. When our farmers and manufacturers cannot have their home market it is bound to mean depression, unemployment and far-reaching distress. In 1920 we were as thoroughly at the mercy of foreign cheap labor as we were in 1819.

The American valuation plan is now agitated as an antidote to dumping, but this plan is not new. It was first known as the "Home Valuation" principle and was advanced by John Quincy Adams when he was a member of Congress in 1832.

Hoarding Money.—In former years the practice of hoarding money no doubt augmented depressions to a large extent. It is said that French peasants in the 19th century universally hoarded their savings, many times causing severe stringency. Hoarding was also practiced in America during the 19th century, particularly in the rural communities. As late as the panic of 1907 a representative of the house of J. P. Morgan & Co. gave as one of the causes of the money stringency and panic that of money being hoarded away in private places and kept out of circulation. As the intelligence of our people has advanced, this practice no doubt decreased, although it is yet to be reckoned with. In the 1920-21 depression the average citizen liked to carry a "bankroll" of much larger proportion than formerly. In the flush times of the war people became used to it and this practice has taken the place of the pot of coin hidden under the floor or the stocking stuffed full of money and hid in the bureau. The worst feature of hoarding is that it is more likely to be practiced in times of stress or depression when it is most harmful. The use of money as a store of value diminishes its efficiency for the purpose for which it is intended. It therefore increases the demand for money since an ineffi-

cient instrument does less work. Conversely, whatever increases the efficiency of money lessens the demand for it. Whatever increases the rapidity with which money circulates therefore diminishes the demand. It is one of the advantages of the introduction of banking habits that men carry less money in their pockets and thus money acquires a greater rapidity of circulation.

At the time of the Mississippi Bubble, 1720, under a paper currency regime specie money was hoarded to such an extent that France was practically bare. Yeats' description of this period was: "Under the belief that coin was being hoarded, people were forbidden to keep at home a sum in coin exceeding 500 livres, or to use any medium of payment for amounts over 100 livres except bank notes. Still money disappeared. The resources of charitable institutions, orphan schools, hospitals and almshouses were demanded by the state and exchanged for paper. Finally, the penalty of confiscation was proclaimed against all who should, from the date of the proclamation, keep gold or silver in their houses, whether coined or uncoined, instead of exchanging it for paper money. With nothing left to confiscate, even arbitrary power was at a loss. The precious metals appeared to have left the country. Foreign merchants could not be compelled to take paper instead of gold, nor could they be prevented from paying in French notes for the goods they bought. Discontent and fear led to hoarding, in spite of proclamations. The medium of exchange was at length reduced entirely to paper. Trade, both foreign and domestic, became paralysed."

Preceding and during the panic of 1893 large sums of money were withdrawn from the banks and hidden away. This was because the treasury had an over abundance of silver certificates and treasury notes and fear spread that the treasury would never be able to redeem them in gold if it were called upon. In this case confidence not only in the banks but in the Treasury itself was shaken.

War.—The United States has been particularly fortunate

as regards serious foreign wars which often threaten the foundations of a nation's economical system. Only once have we been invaded—in the war of 1812—and that was by a surprise and entirely a fluke. In no other instance have we even been threatened by invasion by a foreign country. Our wars, on the other hand have been beneficial to our economic interests in the long run. In our Mexican War we gained great territory, including vast gold fields. In the Civil War we preserved the Union perpetually, preventing two nations instead of one. After the Spanish-American war, trade again followed the flag.

It stands to reason that business distress accompanies the outbreak of a first rate war and brings depression in countries who have trade relations with those at war. It may even cause suspension of gold payments. The aftermath of war has peculiar effect on economic conditions. After 1870 France, the defeated, with big indemnities was more prosperous than Germany, the victor. This situation was reversed following the World War when Germany, the defeated, was more prosperous than France, the victor.

While wars have caused many depressions, yet on the other hand quite a number of wars have been caused by commercial selfishness. In the Middle Ages when commerce began to take hold of the people as an economic science one country would suffer a period of depression while, perhaps, its neighbor prospered either because of discriminating tariffs or favorable natural conditions. This led to quarrels and war.

War, while it always stimulates business, really makes the rich richer and the poor poorer. Nations are coming to find that war no longer pays and it is admitted now that had Germany continued her peace-time course she would have conquered the commercial world, whereas she failed to conquer the political world. Eventually the fiddler must be paid by both victor and vanquished and many times their economic difficulties as an aftermath spread to involve the neutrals. While France staged her revolution amid streams

of blood and flame, England silently and peacefully underwent her industrial revolution, increasing her wealth tenfold and putting her a half century ahead of her commercial competitor.

To prosecute a war naturally calls out the resources of a nation. Currency is inflated. Great quantities of money are put into use. This money is still out at the end of the war and overlaps for the period of two or three years, keeping conditions good during that time, as was the case following the Revolutionary War, the Civil War, the War of 1812, the Spanish-American War and the World War. Offsetting this is the overproduction in some lines. This material including food-stuffs having been put in warehouses in anticipation of war uses is held back for a while before being thrown on the market. Returning soldiers are paid off, thus putting money into circulation, helping the times immediately following war, but when this money is spent and the men have to get back into production and the surplus material begins to be sold, then follows trouble. The worst effects of after-war depressions could be avoided if the same skill, energy and resourcefulness was used in that direction as was used to prosecute the war. The depression of 1920 could have been prevented in a large measure had administrative ingenuity been properly used for a longer period after the war. When the armistice was declared and war industries stopped, throwing great numbers of men out of employment, the government of necessity got back of the situation and the weight of our financial structure was thrown back of peace industries that were languishing. The men were put back to work in these industries and the returning soldiers absorbed as fast as they returned. In fact, there was such a demand for labor that the Government was urged to speed up the return of the men. Great prosperity ensued until April, 1920, when the depression set in and gradually spread over the country, growing worse as the months went by. The presidential campaign was coming on, the President had been afflicted with paralysis, the Secretary of the Treasury, Mr. McAdoo, had resigned and there was no head to the Government. When various local crises sprang up as a result of after-war readjustment, there was no head to the government to help straighten things out. Cabinet members refused to take any step, fearing the consequences that happened to Mr. Lansing. Had there been an active executive at the head of the Government who was ambitious and willing to help solve the problems arising, the depression could have been averted or at least largely mitigated.

We bemoan war, as we should. We raise a great outcry against economic loss from it, as we should. But it is a little known fact that the loss sustained by securities and stocks of raw materials and merchandise during years of depression and forced liquidation is greater than the cost of carrying on the greatest military campaign in history. A recent speaker at a bankers' convention said that our national wealth had increased 30 per cent during the war, during which time we grew to be by far the wealthiest nation in the world, but that our entire gain had been wiped out during the depression of 1920-21. His statement is obviously only partly true but is of sufficient import to set us thinking.