INTRODUCTION TO BUSINESS CYCLES

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Problems Amid Prosperity

Business cycles are an endemic feature of market economies. They are the pinch of extra salt that spoils the pudding. All of the major industrialized market economies of the world have enjoyed long-run prosperous growth for decades or even centuries. With the beginnings of the industrial revolution and the introduction of the machine age in Europe in the early eighteenth century, industrial production, even as measured on a per-capita (per-person) basis, began a relentless rise, increasing living standards and introducing first the promise and then the reality of economic security and prosperity for ever larger numbers of people.

With its vast abundance of untapped resources, a relatively skilled labor force, strong agricultural base, and entrepreneurial spirit, the United States economy shared this new prosperity from the very beginning. Nowhere have living standards risen so rapidly, enjoyed by such a large population.

Ironically, in the year of the American revolution, 1776, the Scottish philosopher and prophet, Adam Smith, published his prescient *An Inquiry Into the Nature and Causes of the Wealth of Nations*, now commonly referred to as *The Wealth of Nations*, which both described the character of the new industrial age to markets and provided a vision of the consequences; national wealth. In 1776 the era of factory automation, the dominance of engineering technology, huge specialized markets, and the gradual transformation of agricultural economies was yet to be seen. Smith, nonetheless, had already seen enough of the benefits of labor specialization and the machine age to understand the emerging Juggernaut.

In the two centuries that have passed since the publication of Smith's epic his vision of the future has generally been realized, although with the significant qualification that the entire nations, even continents, have been excluded from the prosperity. The benefits of industrialization and the growth of markets have been remarkably uneven. But for at least the industrialized market economies, living standards have risen markedly, albeit unevenly.

The human cost of industrialization

One shouldn't become overly sentimental, however, about secular trends in economic progress. As had been well documented, industrial progress and the occasional cruel expediency of markets took a heavy human toll, especially upon the industrial working class and the economically disenfranchised. By the mid-nineteenth century in Europe, the plight of the working class had become so desperate that even major literary figures, such as Charles Dickens and Emile Zola were voicing poignant protests through their literature.[1]

[1] The work of Dickens is replete with social protest. See, for example, *Hard Times*. A good example of Zola's protest can be found in *Germinal*.

In the United States, the plight of the industrial laboring class was arguably better than that of their counterparts in Europe. Nonetheless, significant episodes of labor strife are common in American history.

Finally, and perhaps most important, it can't be forgotten that the original inhabitants of the Americans were decimated by the "prosperity" of the Europeans who first seized their resources before exploiting them industrially. Likewise the Africans entrapped in the slave trade, and their American descendants, could hardly be labeled beneficiaries of economic progress. They were the victims and the human toll was high, indeed.

Therefore, any description of the bounty of economic progress in the major industrialized nations must be carefully qualified, because the benefits have hardly been shared by all. Nonetheless, it is apparent that the vast majority of citizens living in the world's major industrialized nations; the United States, Canada, England, France, Germany, Japan, Taiwan, etc., have seen an inexorable rise in economic abundance. Americans in particular eat better, dress better, live in better homes, have more options for entertainment and travel, and have the means to buy a virtual cornucopia of commodities, when compared to our ancestors. In a few words, for us, the system delivers the goods.[2]

An endemic problem - the business cycle

But as soon as one investigates the path year by year of this long-range progressive trend and begins to see the inter-generational trend as a sequence of erratic short-run events, a disturbing pattern emerges. Underlying the prosperous growth is an interim pattern of occasional boom and bust if not moderate volatility. Occasionally one finds long years of dark economic depression, shattering entire generations and changing the shape of political events. The Great Depression, lasting a decade, left an indelible memory of hardship for the unfortunate victims. In other periods there are high inflations, eroding purchasing power, inequitably redistributing wealth and income and undermining the financial markets. Even in the more tepid cycles one sees the development of unrealistic expectations, eventually disappointed by the hardship of unemployment, business failure, loss of income, debt problems, and many of the other effects of recession.

This variability, this ever-present disturbance to an otherwise healthy long-run trend, is the business cycle. For at least the industrialized nations, the business cycle is a chronic and endemic problem, and the study of the business cycle involves the study of the most persistent problem afflicting mature market economies.

This course does not take the approach that the business cycle is an occasional minor disturbance to a relentless drive to prosperity, an infrequent embarrassment to a system that is fundamentally orderly. Instead, the authors view the cycle, including its negative elements - recession, inflation, and even depression, as a structural feature of a system that fundamentally works but is plagued with consistently recurring problems that reflect defects in the actual

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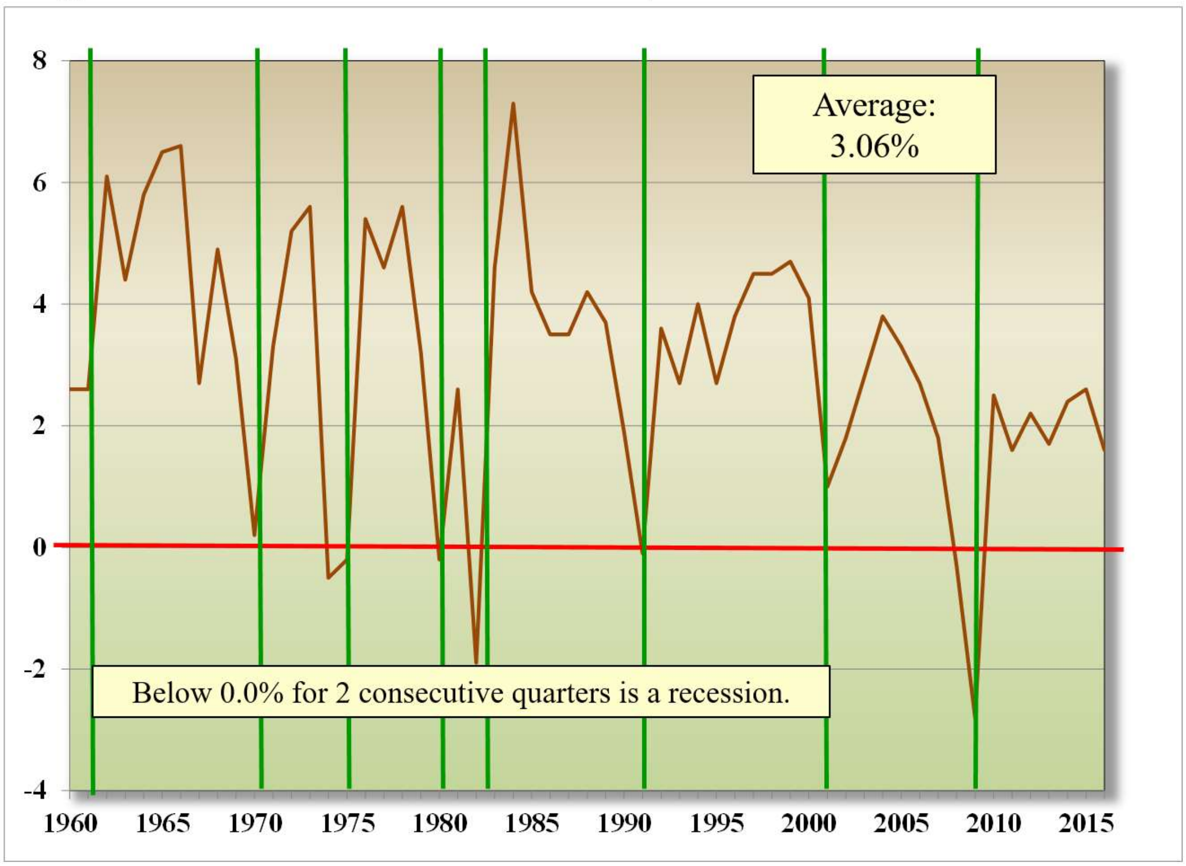
[2] By no means is it necessarily being argued that Americans are now more content with their lives, more spiritually enriched, or more morally or ethically satisfied.

structure of the system. In a few words, where you find industrialized market economies you will find business cycles.

The Cycle in Numbers

In the modern era the business cycle is described as a cycle in the real (inflation-adjusted) growth rate of Gross Domestic Product (GDP), the aggregate measure of the nation's output of goods and services. Refer to **Figure 1**, which shows the annual growth of real GDP from 1960 to 2016. When using annual data the cycle doesn't look very smooth, but there is clearly a cycle in view. Although over this period the annual growth rate averaged a robust 3.06%, the range of GDP growth goes from a high of 7.3% in 1984 to a low of 2.8% in 2009.

Figure 1 – Real Annual U.S. GDP Growth, 1960 - 2016



Source: U.S. Bureau of Economic Analysis, GDP and National Income Accounts, Table 1.1.1

Any negative growth rate, below the red line, implies an economy in recession. Technically an economy is in recession if the annualized growth rate is negative for two consecutive quarters, although an organization that researches business cycles, The National

Bureau of Economic Research (NBER), uses criteria that are more complex and subjective to determine the peaks and troughs of the cyclical phenomenon.

The green lines in **Figure 1** show the troughs of the business cycle, as determined by the NBER.

Figure 2 shows the relative duration of business cycles from peak to trough and from trough to peak since 1960, as determined by the NBER. It is pleasing to see that the duration of the expansions are much, much longer than the duration of the contractions.[3] Recessions tend to be sharp and short-lived, whereas recoveries are gradual and more long-lasting.

Figure 2 – The Duration of Modern U.S. Business Cycles

		Duration in Months	
		Contraction:	**Expansion:**
Peak	Trough	Peak to Trough	Trough to Peak (pre)
April 1960-2	February 1961-1	10	
December 1969-4	November 1970-4	11	106
November 1973-4	March 1975-1	16	36
January 1980-1	July 1980-3	6	58
July 1981-3	November 1982-4	16	12
July 1990-3	March 1991-1	8	92
March 2001-1	November 2001-4	8	120
December 2007-4	June 2009-2	18	86 +

Source: National Bureau of Economic Research, Current to January 2018/

Nonetheless, recessions can do a lot of damage, some of it permanent. It will be useful to break down the business cycle for analysis.

The Pathology of the Business Cycle

In this section we will explore the pathology of a business cycle. In this description, a medical term, which generally implies the characteristic pattern of some disease or malfunction, is being borrowed. Although each historical episode of a business cycle will have important

[3] The current expansion, already running at 86 months in early 2018, may set a new record.

unique features, nonetheless, most cycles have certain important features in common. They tend to exhibit a general, detectable pattern. This is the pathology of the cycle.

Since the pattern of a business cycle is, by definition, a recurring event, the description can begin at an arbitrary point. This description will begin at the trough of a recession when the economy is poised for a recovery.

Early Recovery from a Recession

At the trough of a recession the unemployment rate and business failure rate are unusually high, the rate of inflation is normally (although not always) low, and the production of goods and services has fallen from its previous peak. The nation is producing and consuming less than during the previous period of prosperity. Certain industries sensitive to the cycle, such as residential real estate and auto production, are depressed. The level of business investment is low, as is the level of consumer borrowing. Interest rates are usually low and declining, sometimes as the result of efforts by the Federal Reserve System to stimulate the economy out of the recession.

Although the recession has been harmful, some benefits emerge. Many surviving businesses have trimmed costs in response to falling sales. Lower interest rates have reduced the debt burden of borrowers and have lowered the effective costs of items purchased with credit, such as autos and homes. Because consumers have postponed purchases but still wish to maintain their previous standard of living, pent-up consumer demand continues to grow. Federal, state, and local governments often, to the extent of their ability (limited in modern times) initiate stimulating measures. The nation's central banking authority, the Federal Reserve System, by this phase of the recession, is using aggressive expansionary monetary policy, designed to make credit abundant and reduce interest rates.

This combination of stimulants, which varies from recession to recession, and is described here only generally, begins to have its effect. First it arrests the slide and the first signs of a slow recovery begin to appear. There might be a reversal in auto or home sales (as happened in 1982, for example), a stabilization of business profits, even if at relatively low levels, or a surge in the stock market (although this is often a false signal). In modern times, influential media coverage of economic events, typically glum during the worst of times, begins to portray a more hopeful picture. Retail sales stop their decline and for some individual retailers begin to rise.

Consumer confidence, reflecting the attitude of at least those who are still employed, begins to rise, often sharply. This particular component of the recovery is critical in the American economy, which is largely consumer-driven. Once consumers start to spend, in whatever form, the economy recovers.

The effects of the recovery are initially uneven. Certain industries and even regions of the country continue to suffer as others grow. Unemployment rates often continue to rise for a brief period as industries still declining continue to lay off workers while recovering industries, initially unsure of the strength of the recovery, deplete inventories and, to some extent, use existing employees more efficiently (employing them for longer hours, for example) before rehiring.

Finally, when the recovery is underway and obvious, unemployment falls.

Corporate profits are usually concurrent with the business cycle and turn upward as soon as the economy begins its recovery. Corporate investment, on the other hand, usually lags, sometimes considerably, and often does not turn up considerably until well into the recovery. This may be in part due to the inherent caution of businesses (investment spending is a major long-term commitment and relies heavily upon anticipation of robust future sales), but can also be attributed to the fact that investment spending has a long planning horizon.

Gradually the recovery becomes more inclusive, with sales growth and rising profits reported across most industries and in most regions. The growth rate of national production turns positive and the level of production soon returns to and surpasses its previous pre-recession peak.

The recovery is underway.

Recovery and Expansion

The period of recovery and growth normally has a much longer duration than the recession in a business cycle. The typical recession lasts anywhere from about six months to two years, averaging about a year, whereas the period of recovery of growth will last for four to seven years, averaging about four years. When looking back across a long period of history one sees exceptions to even these wide ranges. The Great Depression, for example, enveloped the entire decade of the 1930s. During the "Golden Decade" of the 1960s, a remarkably stable and prosperous era, the economy experienced a decade of uninterrupted growth.

During the period of recovery, growth rates of real national production are strongly positive, sometimes rising to levels as high as six or seven percent, well above the long-run average growth rate.[4]

Inflation rates, which normally have fallen to relatively low levels during the recession (again, there are notable exceptions, discussed later) begin to rise with the recovery almost immediately, not usually to dangerous levels - around five percent is typical. The economy is being stimulated by a growth in demand, largely from the consumer sector, and not all of the stimulation is absorbed as growth in real output. Some producers respond, in part, to a surge in sales by raising prices in addition to increasing production.

Interest rates, on the other hand, often continue moving down in the early months of a recovery, then gradually begin to turn upward.

Normally in the early months of a recovery there is a considerable amount of uncertainty and confusion (as is the case also in the earliest months of a recession). Although looking at data in retrospect provides a relatively clear picture of the historical business cycle, the true status of the economy is hardly so obvious when one is living through a cycle, trying to rely upon day-today information to obtain a reasonable overview. Much of the data, for example, which later provides a clear picture, is not available for weeks or months, and is not very reliable until it has

[4] After World War II there was a recession that ended in late 1949, and in the first year of the recovery the economy grew more than ten percent. That must be seen, however, as an anomaly associated with the war.

been revised. What data that are available is often mixed and confusing, as are the interpretations offered by the media and professional forecasters. Economic policy makers, such as those who work for the Federal Reserve System are likewise uncertain, and for a time tend to stick to antirecession policies until evidence of a recovery is more apparent. This explains, in part, why interest rates continue to drop after the recovery has begun (but is not the whole explanation). Consumer and business confidence, uncertain at first, nonetheless begins to rise and as the recovery proceeds until it is restored to normal and healthy levels. Business investments finally begin to rise and the recovery is well under way.

Approaching the Peak

It is less easy to generalize about what happens at the end of a long period of growth, when the economy approaches the peak and "prepares" (inadvertently, of course) for the ensuing recession. At this point in the business cycle, many of the particular problems that arise are peculiar to the specific dynamics and structure of the economy at that time. In other words, the problems that emerge look different - in some cases considerably different - with each business cycle. For example, the recession that began in 1974 cannot be considered in isolation from the OPEC petroleum embargo of the previous year. The 1980 recession was primarily "engineered" by the Federal Reserve System in its effort to kill inflation (which effected the *timing* of that recession but not the *appearance*) and the recession that began in 1991 was obviously linked to the numerous and substantial debt problems that had accrued through the 1980s. On the other hand, the terrible recession that troughed in 2009 was clearly connected to real estate speculation that was raging prior to the collapse.

For that reason, the discussion below does not generalize about elements that are likely to be found in the late expansion phase of all business cycles, but instead discusses certain possibilities derived from the history of past cycles.

In most cases a general optimism emerges that gives rise to over-enthusiastic expectations about the continued growth of the economy. In this kind of environment certain businesses, seduced by recent robust sales growth, might tend to over-invest or expand their productive capacity and even their labor force too rapidly. Commercial and residential real estate booms, fueled by leverage, speculation, and myopia (an apparently common feature of this industry, if history is any teacher) might appear. Consumers, pleased by years of prosperity and somewhat forgetful about the cyclical past and over-confident about the future, continue to spend heavily and run up large levels of debt, especially when considered relative to their income. The economy becomes stretched and heated.

Inflation begins to rise, sometimes to dangerously high levels. As the unemployment rate drops to its trough, certain industries begin to see labor shortages (especially of skilled labor) and rising labor costs. In some industries resource shortages appear (lumber in the construction industry, for example) and others suffer costly delays in production. Consumer demand grows relentlessly, and as the economy approaches capacity constraints, both rising costs and growing demand pull prices up to higher and higher levels. Interest rates also rise with the inflation.

At some point, whether because of business debt problems, excess construction, consumer concern over their debt position, unrealized sales expectations, or whatever else might work to cast a pall over the recent enthusiasm, sales begin to slip in one industry after another. Again, business often erodes initially in debt-financed, "big ticket" categories like residential real estate and auto sales. Sometimes the Federal Reserve System, fearing a runaway inflation, will tighten up on credit conditions. This has the effect of raising interest rates and dampening the euphoric business climate. Usually the catalyst for breaking the trend, whatever it might be, is barely detectable, or even impossible to determine. The reversal is slow and gradual, but inevitable.

The Decline

As the economy recedes, a leverage effect compounds the difficulty. As the evidence of recession becomes more apparent, and as the media gives more coverage to stories of economic distress, the mood of businesses and consumers turns darker. Consumer confidence wanes and a mild climate of fear and anxiety begins to penetrate purchasing decisions. It is for this reason that a decline in the sales of expensive, debt-financed items, such as homes and autos often lead an economy into recession. Consumers worry about their ability to meet protracted debt payments. As sales decline there is a multiplier effect. The loss of a million-dollar payroll in an area, for example, might eventually cause local incomes to fall ultimately by two or three million dollars. Unemployed workers reduce their spending, which effects the income of merchants and other recipients of that spending, the merchants in turn reduce theirs, and so forth, as the effect of the initial reduction in spending filters slowly through the local economy. If this is a national recession rather than a local problem, secondary compounded reductions in spending are reflected throughout the economy.[5]

Debt-related problems, which may have engendered the recession in the first place, become worse because of growing difficulties with servicing debt obligations.

Even consumers still with jobs (and remember, even in a bad recession, 85 to 90 percent of workers still have jobs) become soberly cautious in their spending, concerned about their own financial security. In a recession, for example, Christmas sales, when many retailers make 30 or 40 percent of their annual profits, are disappointing.

Businesses, seeing declining sales and growing inventories, and having difficulty servicing their debt, not only reduce direct production of their products and services, but also cut back very sharply on capital investments and even research and development expenditures.

The description of the cycle at this point is complete. The reader is again reminded that this overview - this pathology of the business cycle - is very general and meant to provide only a cursory glance, a general descriptive pattern of the dynamics of the cycle. Again it is emphasized that each historical cycle has its own unique character, which is yet to be explained, and must be done on a case-by-case basis. Likewise, of course, a developed theoretical

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[5] The reader may recognize the concept of the multiplier effect, discussed in macroeconomics textbooks, reflected in this discussion.

explanation must be provided for many of the elements of the story above. All of that comes later.

Business Cycle Extremes - Depression and Hyper-Inflation

Depression

For the sake of discussion, at this point a recession will be crudely defined as a period of six months or more when the real growth rate of national production is negative, which is to say, when the level of national production, adjusted for inflation, is declining. A more suitable definition will be provided in the next chapter.

What, then, is the difference between a recession and a depression? The distinction is rather arbitrary - it's a matter of degree. Usually a depression lasts for years, often five years or more, whereas, again, the average duration of a recession is about a year. In a depression unemployment rates can be exceptionally high for very long periods, causing terrible distress among the general population. The business failure rate is also unusually high.

Depressions are also marked by extreme financial distress, with significant failure of financial institutions and a collapse of the finance markets (especially the stock market). Instead of inflation or even price stability, deflation, where prices actually decline, appear in a depression. This phenomenon contributes substantially to the distress of the financial sector. Because most debt is nominal (with contractual amortized payments required in nominal dollar amounts), when prices are falling, the cash needed to service debt falls, which endangers not only the debtor but the lender as well. When the problem is widespread, both sides go bankrupt; the borrower because the loans cannot be paid, and the lender because this is true for many borrowers instead of a few.

The Great Depression, the last depression in U.S. history, provides a good comparative example. The Great Depression began in late 1929 with the infamous October stock market crash, and although the trough of the depression was seen in 1933, and the economy began to recover relative to that low point thereafter, the economy was not restored to health until the onset of World War II in 1941.

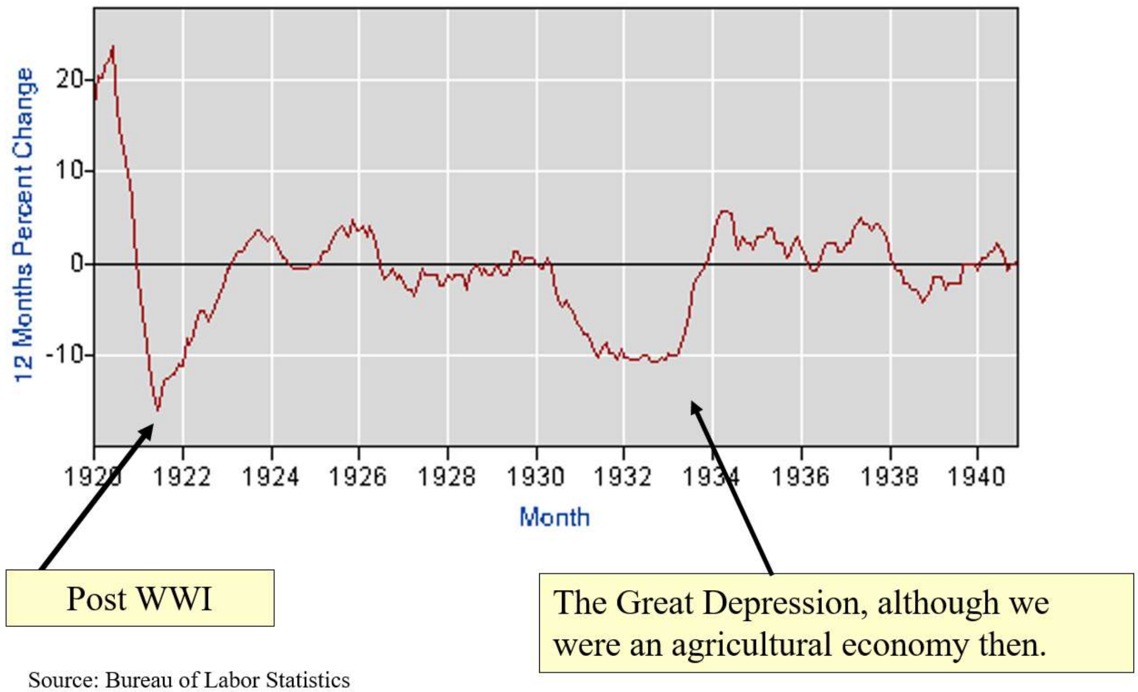
Figure 3 shows the severe price deflation that was seen in the early 1930s right in the heart of the depression. The U.S. at that time was still an agricultural economy, and farmers and other borrowers found it nearly impossible to pay their debts to banks with declining prices for agricultural products, which contributed to widespread bank failure.

The peak unemployment rate was above 25 percent, real production fell by about 30 percent between 1929 and 1933 and prices fell by nearly 25 percent over the same period. By 1932 the stock market had fallen to about one-quarter of its 1929 peak, and in the early 30s roughly one-third of all banks failed.

In contrast, the average annual unemployment rate has never been above ten percent since the Great Depression, and national production seldom falls more than two or three percent in typical recessions. Aside from a minor episode in 1949, there has never been a general deflation of any kind in the last fifty years.

Perhaps the significance and magnitude of a depression is best expressed in subjective rather than in dry, objective terms.

Figure 3 - Deflation during the Great Depression
CPI annualized monthly rates, 1920 to 1940



Source: Bureau of Labor Statistics

High unemployment rates, the high business failure rates, and collapsing financial markets traumatized the spirit of the nation (indeed, the world - the Great Depression was a global affair), producing political upheaval and labor unrest. The mood of the nation turned grim and pessimistic, and the hopes of an entire generation were shattered. The national birth rate even turned down, as though parents didn't want to bring children into a world of misery and hardship. Perhaps John Steinbeck's *Grapes of Wrath*, the story of displaced migrant farmers who had lost their farms in the Kansas dust bowl, paints a more substantial and accurate picture of the tragedy of a depression.

Hyper-Inflation

Even in best of times, all modern economies experience at least moderate levels of inflation (a general increase in prices), with prices rising from one to three percent per year. Such low levels of inflation are not necessarily "good" for the economy in any direct sense, but are at least symptomatic of a strong, growing economy. It is better, for example, to have national production grow at four percent with three percent inflation than, say, grow at two percent with perfect price stability.

Even the occasional five or six percent inflation seen at the heated phase of the business cycle is not serious cause for concern (except to the extent that it contributes to the downturn) so long as it is temporary.

Double-digit inflation, that is, inflation above ten percent, is another matter. Inflation at this level or higher can be very destructive to an economy because of the impact it has upon economic behavior, the inequitable allocation of wealth and income, and damage done to the finance markets (to be discussed in greater detail below).

Inflation is not purely a phenomenon of the business cycle, in the sense that unemployment is, for example. Although inflation tends to be pro-cyclical and correlated with the business cycle, with prices normally rising during the expansion and contracting with the recession, sometimes inflation historically has moved somewhat independently of the cycle and has, in some cases, even been counter cyclical, with prices peaking at roughly the time of the business cycle trough (this happened in the mid-1970s, for example). Inflation has multiple causes, some of them structural (where the inflation is the result of slowly-evolving structural features of the economy, taking root in years or even decades past) and some are related to cost-push pressures, such as rising labor costs or energy costs that are not inherently cyclical.

Nonetheless, the business cycle includes a strong and systematic variation in the price level, so episodes of inflation must be seen, in part, as a consequence of the cycle, but not entirely so. Hyper-inflations in the U.S. economy are not normally seen even in the most heated phase of the expansion, so they, like depressions, must be treated as unusual events deserving a special explanation for each historical event.

Harmful Effects of Business Cycles

Obviously the business cycle would be of little interest if it had no substantial effect upon businesses and consumers. But the negative phase of the business cycle, the downturn and recession certainly does, as does the inflationary component of the expansion. As was implied in the opening pages of this chapter, if year-to-year growth smoothly matched the long-run trend, a multitude of economic problems would vanish.

At this point, the primary harmful effects of the cycle will be enumerated and briefly discussed. These topics will be discussed in detail in appropriate sections later in the book.

Unemployment

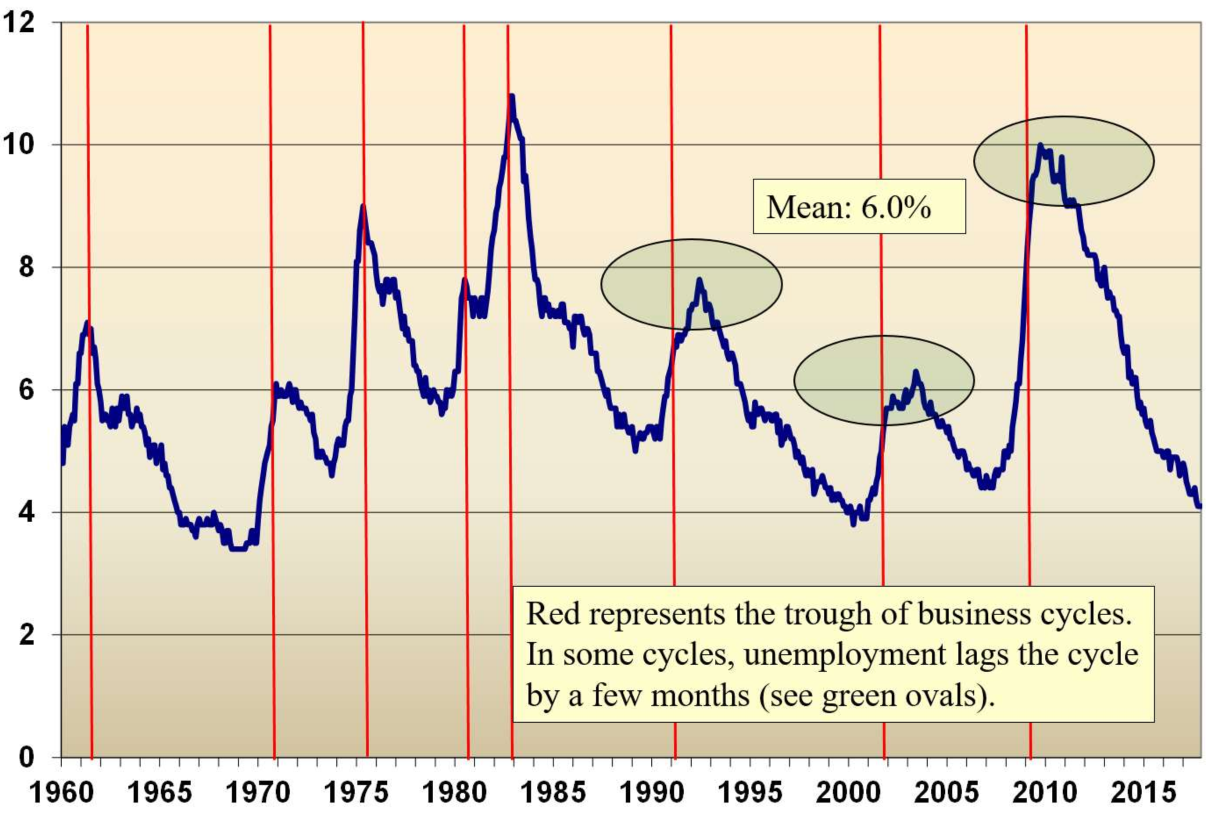
The unemployment rate has averaged about 6% percent in the period since the late 1940s, but the rate has been as low as 2.9 percent in 1952 and as high as 9.5 percent in the recession in the early 1980s, was 8.3 percent in the 1975 recession, and was approaching 8 percent and still rising in early 1992. In the "Golden Decade" of the 1960s, it only averaged a little more than 4.5 percent, a level that was again reached in 1997.

Figure 4 shows the unemployment rate between 1960 and the present and the cyclical pattern is very clear. As before, the troughs of business cycles are shown. Given that an increase in this line is undesirable, it can be seen that in recent recessions unemployment lags the business cycle by a few months, which means that even though the recovery is underway (such as was the case after the 2nd quarter of 2009) the unemployment rate continues to rise. This is largely attributed to the reluctance of businesses to hire new employees until they are sure the recession has ended.

To gauge the impact of these figures, currently each percentage increase in the unemployment rate represents about 1.25 million more people unemployed. Therefore, if during the movement from peak to trough in a cycle the unemployment rate rises from five percent to eight percent, slightly fewer than four million more people have lost their jobs.

Because recessions are relatively brief (compared to the periods of growth), most of the unemployed eventually return to work. But in a severe recession, such as that experienced in the early 1980s and again in 2009, the average duration of unemployment can be as long as four to five months, with nearly a fifth of the unemployed population out of work for six months or more.

Figure 4 – The Unemployment Rate, monthly 1960 – Jan 2018



Source: Bureau of Labor Statistics database, Series ID LNS14000000, SA.

Even with unemployment compensation, the toll upon income is obvious. Perhaps more substantial but harder to represent with data is the psychological toll upon the unemployed. The loss of job (and even the process of finding a new one) is traumatic, lowering self-esteem and placing strains upon family and personal relations. The "drama" of unemployment is hard to capture in an economics text, but anyone who has been through a recession or has been exposed to the extensive media coverage of the problems of the unemployed (or worse yet, anyone who has been unemployed) realizes that the psychological damage can be as substantial as the purely economic harm. Even the threat or fear of unemployment, whether realized or not, can produce anxiety and, without question, affects the general spending patterns of consumers and businesses, compounding the recession.

In the modern era, where consumers are heavily laden with debt and have little in the way of accessible savings, the dangers of unemployment are enhanced. Only a few weeks of unemployment can cause the loss of a home, or so burden a family with more debt (from credit cards, for example) that living standards must suffer for years.

Loss of National Production

Directly connected to the loss of jobs is the loss of national output. In a recession the growth of national output is actually negative, which implies not only unemployment, but unused resources, idle factories, and at least a temporary decline in the standard of living.

For example, real gross national product, as measured in 1982 dollars, fell from about 3.249 trillion dollars in 1981 to 3.166 trillion dollars in 1982, a decline of more than 80 billion dollars. 1982 was a recession year. Had 1982 been a normal year, real GNP would have instead grown by about 100 billion dollars. The difference between what would have been normally expected and what actually happened, the effective cost of the recession, came to around 180 billion dollars.

It might be argued that the cost of a recession in the long run might be fully compensated for by a growth rate higher than would have otherwise been experienced during the ensuing recovery, but this argument is implausible.

Labor resource, for example, cannot be "stored" or "saved" like coal or other unused resources. Labor that is not used is labor wasted. The same thing can be said for most categories of capital equipment. An idle factory is simply an unproductive factory, and its life is not being extended by its lack of use. The same thing is true of excess office space or unsold homes. They deteriorate because they exist, not because they are being used.

Therefore from the perspective of national production, excess capacity and underutilization of resources - especially labor resources, are an extreme form of economic inefficiency and carry real economic costs.

High Business Failure Rates

One very visible form of this economic inefficiency is the unusually high rate of business failure experienced during recessions. Because of very liberal bankruptcy laws, bankruptcies are an endemic feature of even a healthy U.S. economy, especially in such areas as retail trade and among small businesses. This figure does not soar up in recessions, as one might expect, but it does rise appreciably.

Businesses face falling sales and are often unable to slash costs sufficiently to remain profitable or preserve equity. This is especially true of businesses with heavy debt or high overhead, two categories of fixed cost that cannot be reduced during a slump. Consequently businesses must negotiate with creditors and, in many cases, face bankruptcy. With liberal bankruptcy laws, many larger businesses stay in business, but many do not.

Interruptions to Long-Term Investment

Investment for producer's durable goods (generally, investment for production goods) and construction investment are two of the most volatile categories of the business cycle. Whereas consumer spending relatively stable in a recession, perhaps falling by only one or two percent, and in some large categories, such as services, not at all, investment expenditures fall substantially during recessions. For example, in the recession of the early 1980s, producer's durable equipment investment fell from 259 billion dollars in 1979 to 223 billion dollars in 1982, a decline of fifteen percent. Residential construction fell from 178 billion dollars in 1978 to 105 billion dollars in 1982, a decline (indeed, a collapse) of over 40 percent!

Likewise, investment is slow to recover after the recession reaches its trough. In the depth of the recession there is excess capacity and businesses can expand production for a while without adding to expensive productive capacity.

Investment, especially producer's durable equipment, is tied very strongly to long-term productivity and growth. Therefore a decline in investment is harmful not only because of the direct loss in income and employment due to the reduced spending on investment, but also prospects for the future are harmed because the economy's underlying capital base, the key to future productivity, is not being built.

This is probably the most damaging long-term feature of the business cycle. Investment spending is not like consumer spending for food, clothing and autos, where something not purchased today can be purchased tomorrow. Investment spending has a relatively long planning horizon and the need to finance the investment can be complicated and time-consuming. Even the physical creation of investment goods (such as building a factory or even a retail store) requires time. Interruptions to the smooth transition from inception to productive assets may seriously retard the pace of investment. If such interruptions are so frequent as to produce an enduring climate of volatility and uncertainty, even the long-range trend in investment will erode.

Disruptions to Financial Markets

A strong and functional financial system is certainly necessary for economic growth and prosperity. All modern investment has its financial component. Large-scale investment not financed through debt or equity is virtually unheard of. In turn, the debt associated with investment depends upon a suitable cashflow over long time horizons to redeem debt obligations. Even consumer spending, the bedrock component of demand in the U.S. economy, is now very reliant upon credit availability.

Finance markets tend to function more fluidly and efficiently during periods of economic tranquility. Interest rates tend to remain low and stable, credit sufficiently available to meet the economy's primary financial needs, and the rate of failure among financial institutions, such as banks and other financial intermediaries, is relatively low.

In contrast, when the economy is troubled, whether by recession, inflation, or both, the markets become volatile, credit conditions problematic, and financial institutions endangered.

During periods of high inflation, for example, interest rates rise and become volatile, interjecting a climate of extreme uncertainty for long-range purchasing decisions.

Recessions, on the other hand, interfere with the cashflow necessary for debt service. The inability to service debt harms both borrowers and, if the problem is general rather than isolated, lending institutions.

For example, during the "Golden Decade" of the 1960s, when inflation was low (in most years the inflation rate was below two percent) and there were no recessions.[6] Over that entire period, at least to the very end of the 60s, interest rates were remarkably low and stable. Short-term rates were often below three percent and seldom above five. Long-term high-grade corporate bond rates were usually below five percent and very stable, providing cheap credit for long-term financing and investment. Even mortgage rates were usually around six to seven percent. The markets were orderly and healthy.

In contrast, through the more troublesome 70s and 80s (and, apparently, 90s), when more severe business cycles and inflations returned, interest rates generally rose and became much more volatile. In 1981, when short-term rates were occasionally above fifteen percent, interest rate swings in a single week exceeded the ranges seen throughout the entire decade of the 1960s. Mortgage rates rose, occasionally to levels above fifteen percent in the early 80s and became as volatile as short-term rates. In comparison to the earlier post-depression period (after 1940) the markets became chaotic. The magnitude of financial failure (particularly in the Savings and Loan industry, but also among banks) through the 1980s and continuing up to the present has become legendary.

Such volatility introduces a related problem, also harmful to the economy. Excess speculation, the effort to make profits directly from churning markets rather from serious and sober long-term productive investments, tends to flourish in this kind of environment. Speculation can distort the markets even more, mis-allocating income and wealth and occasionally causing financial ruin.

Disruptions to State and Local Government Services

A new problem related to recessions has become very apparent since 1990. Unlike the federal government, which can borrow to finance deficits (which arise when expenditures exceed revenues), most state and local government essentially operate on a cash basis. Their expenditures are limited by their level of revenues. They are not authorized to borrow because of revenue shortfalls, so if revenues fall unexpectedly, expenditures must be cut to balance their budgets.

Unfortunately, the primary sources of revenue are from income, sales, and property taxes. Because income tax collections are roughly proportionate to local and state income and sales taxes depend directly upon the level of sales, during recessions, when both income and sales are falling, tax revenues decline.

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[6] To be more precise, a recession ended in early 1961 and another began in late 1969. These were also the two mildest recessions in this century, so shallow as to have been little more than dimples in the growing trend.

This situation imposes one crisis after another upon local and state governments. Unable to raise tax rates (which is inadvisable in a recession anyway) elected officials are forced to cut budgets for education, health, welfare, and a host of government services.[7]

This need to balance the budget compounds the recession to some degree. Spending is reduced when it should be increased and government employees are laid off at precisely the time in the cycle when they should be retained.

Counter-cyclical Economic Policy

Ruminating about the harmful effects of business cycles would be a rather vacuous exercise if nothing could be done to mediate the cycle. Government economic policy exists largely to combat disturbances associated with the cycle. A considerable part of this course will be devoted to a detailed discussion of policy. Here an introductory overview is being provided.

Fiscal Policy

A discussion of fiscal policy, as distinguished from monetary policy, concerns itself with the taxing and spending activities of government - especially the federal government. Because the government's budget is so large (the federal government alone spends well in excess of a trillion dollars annually) and government activities are so pervasive throughout the economy, variations in tax rates and spending levels can have a profound effect upon the private sector of the economy. Students who have taken an introductory macroeconomics course will likely remember, for example, the discussion of the government spending multiplier, where it is argued that a dollar increase in government spending will raise GNP by two or three dollars. If the amount discussed is ten billion dollars rather than one dollar, the potential effect is obvious.

Appropriate counter-cyclical policy, at least as explained in the textbooks, is easy to describe. During a recession, the government can help "prime the pump" for recovery by actually increasing expenditures, contributing to demand directly, or by cutting taxes, raising after-tax disposable income, contributing to demand indirectly through the private sector. In either case the government's budget deficit would be expected to grow, but this is seen as a necessary and advisable expedient.

In contrast, during a heated expansion, when inflation resumes, taxes can be raised or expenditures cut (either bringing the budget back into balance or actually producing a surplus).

Unfortunately in modern times the textbook scenario for counter-cyclical policy is largely a fiction. Applied fiscal policy in the U.S. economy is virtually moribund. Both taxing and spending decisions at the federal level have become chained to an arcane and convoluted, almost corrupt, political process where the wisdom of sensible policy is eclipsed by a myriad of conflicting motives, some sincere and some misdirected.

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[7] Federal tax revenues decline as well in recessions. In this case, however, the budget deficit grows, requiring the federal government to borrow more money, but not forcing expenditure cuts.

Because politicians are elected, during the worst of recessions, they will deliver economic recovery platforms during campaigns or political debates, but even when the proposals are acted upon, which is often not the case, given the scope of government operations and the scale and specific attributes of the recession (or inflation, if that is the problem), the specific proposals are feeble and misdirected, or not likely to have an effect until the economic problem has dissipated for other reasons. For the largest part, it seems that such policy proposals, intended for the media, are meant to merely convince the public that something is being done; a far less costly gambit than actually doing something, since the latter option typically involve policy proposals that might prove unpopular.

In the case of state and local government, the situation is even worse. As had already been pointed out, the fiscal habits of state and local governments are pro-cyclical rather than counter-cyclical.

There is one important sense in which government spending is counter-cyclical. Textbooks also discuss the automatic stabilizers associated with government spending. Automatic stabilizers are payments by government that remain stable or even rise during recessions. Social Security payments are examples of the former and welfare and unemployment payments are examples of the latter. The presence of huge transfer payments, guaranteeing income independent of economic conditions acts as a buffer against general declines in income. Social Security disbursements alone, for example, in 1990, amounted to nearly 250 billion dollars, and public welfare expenditures for the same year were above 90 billion dollars. Unemployment compensation in a recession year can now exceed fifteen billion dollars.

Such levels of automatic expenditures do dampen the effects of recession to some extent, although certainly by no means enough to compensate for losses in the private sector. More important, these automatic stabilizers are not an example of intelligent, consciously applied discretionary fiscal policy.

Monetary Policy

In contrast, counter-cyclical monetary policy is consciously and deliberately applied, and most of the time is quite effective. The nation's central banking authority, The Federal Reserve System, explicitly sees itself primarily as an agency of applied economic policy. They can strongly influence (and at times, virtually control) general credit conditions and a host of financial variables (money supply and credit growth rates, level of interest rates, etc.), through their impact upon the financial sector.

For example, the Federal Reserve System can be very effective at raising or lowering interest rates (especially short-term interest rates). During a recession, for example, they can, and in the past have, acted firmly to bring interest rates down and increase the availability of credit in the economy. This was done, for example, in 1982 and was instrumental in bringing the economy out of the recession that ended in that year. The same expedient was being used, perhaps more aggressively than any other time in history in 1991 and 1992.

The current expansion is almost entirely explained by the aggressive expansion of the money supply and credit by the Federal Reserve System since 2007, a story that will be documented later in this course.

During high inflations, such as those seen in the late 1970s, the Federal Reserve System can run a contractionary policy, squeezing growth rates of credit and money and forcing interest rates higher.

Although the Federal Reserve System has made mistakes over their long history, in retrospect their policies have been effective over the last couple of cycles. As policy-makers, they are both aggressive and strong.

The mechanics of monetary policy are, of course, quite complicated. To some extent monetary policy has slowly evolved as the policy-makers have learned from their mistakes and victories from the past. Monetary policy cannot be understood outside of its historical context. Therefore an extensive discussion of monetary policy, including a brief history of its application, will be presented later in the text.

A Return to the Business Cycle

This was meant to be a mere introduction to the subject of business cycles. This complex phenomenon can't easily be treated in a document as short as this. For that reason, we will return to nearly every topic discussed here, systematically one by one, after developing some models for analysis.