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Global Recessions and Accuracy in Forecasting

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ABSTRACT

This thesis aims to inform the reader about the nature of the macroeconomic recession, why they occur, and what businesses and investors can do to avoid losing as much money during a recession. This thesis also argues that global recessions are not only inevitable as a natural part of the business cycle but are also highly predictable in occurrence and scale. The discussion on macroeconomic recessions informs readers what a recession is and gives quantitative and qualitative factors. It also gives a detailed overview of the business cycle and where recessions fit. It starts with an introduction to my experience with recessions. The discussion on why recessions occur informs readers of the signs of a recession, explains their inevitability, and describes what happens to the overall economy during one. The discussion on consumer well-being during a recession explains what to do and what not to do as an investor. It gives examples of ways investors can limit their losses and earn positive returns during a recession. The final section synthesizes the three previous themes to prove that recessions are an inevitable part of the business cycle and can be more or less easily and accurately predicted by the average investor. After reading this thesis, the reader will have a much better understanding of recessions and be able to explain why they occur and when they should occur.

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Chapter 1

Introduction

I remember the first time I heard the term "recession." I was about eight years old and overheard my parents discussing why they were having trouble paying the bills. I had the unfortunate experience of growing up during the Great Financial Crisis of 2007-2009. During this time, I remember vividly how much my parents worked and how little they received in return for their countless hours of work. My dad struggled to pay the bills and collect money in his private law practice. My mom worked four jobs at one point and was laid off from at least two of them in 2008.

As a child, I did not comprehend the forces at work, but I knew that my family's income seemed off. However, throughout one of the worst recessions in United States history, my parents managed to put their children first, despite little to no help from any government entity. To think that thousands of other Americans in the same situation received endless aid from the government angers me to this day. Now fifteen years later, it is also a large part of why I chose this research topic. What is a recession? Why do they occur? What can investors do to protect themselves during recessions? Why are they inevitable? Why are they predictable? All of these questions will be answered in detail in the following chapters.

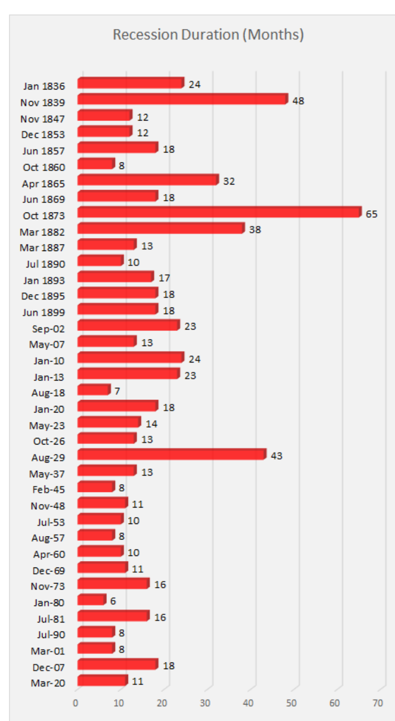
Chapter 2

Background on Recessions

In its simplest form, a recession is a period of prolonged lack of economic activity (Investopedia). Recessions can last any length of time, from a couple of months to several years. Recessions can affect any range of geographic areas, from a region of a single country to the entire global economy. Definitions of what defines a recession vary widely among analysts and governments alike. Still, the most widely accepted criteria for a recession is two consecutive quarters (three-month periods) of negative gross domestic product (GDP) growth (Investopedia). Recessions determined by this criterion are usually accurate and are widely accepted worldwide. By this criterion, the validity of a recession can also be determined on any geographic scale mentioned above, but usually, recessions are determined on a country-by-country basis.

	From	To	Months
1	Jun, 2009	Feb, 2020	129
2	Mar, 1991	Mar, 2001	120
3	Feb, 1961	Dec, 1969	106
4	Nov, 1982	Jul, 1990	92
5	Nov, 2001	Dec, 2007	73
6	Mar, 1975	Jan, 1980	58
7	Oct, 1949	Jul, 1953	45
8	May, 1954	Aug, 1957	39
9	Oct, 1945	Nov, 1948	37
10	Nov, 1970	Nov, 1973	36
11	Apr, 1958	Apr, 1960	24
12	Jul, 1980	Jul, 1981	12

The chart above shows the longest periods of economic expansion in recent history. The chart below shows the length of every recession since the 1830s. Recessions occur about 10% of the time and decline in length as time goes on (Investopedia). The Great Depression, which started in 1929, was the worst recession in recent history. Financial professionals have become better at predicting recessions and know how to respond to and mitigate them. Governments worldwide have introduced monetary and fiscal policies that keep recessions from being as bad as they have been in the past (Investopedia). But what are fiscal and monetary policies, and how do they help keep recessions from worsening?



Fiscal policy refers to tax policies and government spending to affect macroeconomic conditions (Investopedia). During a recession, a government can institute a fiscal policy of tax breaks or stimulus checks, much like the ones seen during the recession during the onset of COVID-19 in 2020 (Investopedia). This ability can help boost consumer spending and, thus, the country's gross domestic product. Consumers who pay lower taxes and have extra money have

more to spend on goods and services and more to invest. Conversely, in the face of mounting inflation or extreme expansionary signals in the economy, fiscal policies can help to reduce consumer spending to restore balance to the economic cycle (Investopedia). These policies can include cutting consumer spending, raising taxes, and potentially laying off government workers or decreasing their pay temporarily (Investopedia). The government can introduce contractionary fiscal policies to any extent, even to induce a brief recession.

Conversely, monetary policy is a set of policies a country's central bank makes to control the overall money supply to influence macroeconomic variables (Investopedia). Much like fiscal policies, monetary policies can be either contractionary or expansionary. Under contractionary monetary policies, at a very high level, a central bank will increase interest rates and limit the supply of money to stop economic growth and reduce inflation (Investopedia). In turn, unemployment will naturally increase due to less money in circulation which causes businesses to lay off workers. Under expansionary monetary policies, the central bank will lower interest rates and increase the overall supply of money in the economy, encouraging consumer spending and stimulating economic growth (Investopedia). Unemployment will naturally decrease when expansionary policies are implemented due to more overall demand, which requires more economic workers.

The Federal Open Market Committee (FOMC) convenes eight times yearly to determine changes to monetary policies, including whether to increase or decrease interest rates (Investopedia). After these meetings, the Federal Reserve Chair will announce what changes have been made and hold a press conference to answer questions about the FOMC’s decisions. Usually, this press conference leads to short-term volatility in both directions in both the stock and bond markets, regardless of their decision.

Chapter 3

Why do Recessions Occur?

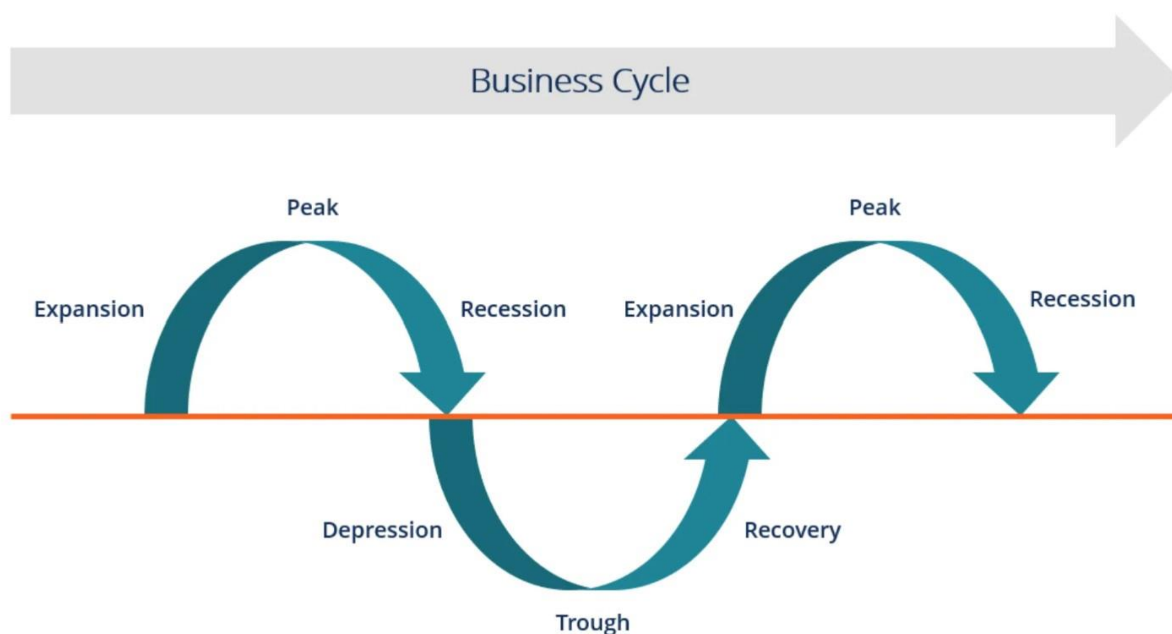
Before going any further, I believe it is useful to explain why recessions occur in the first place. Earlier, I mentioned that a recession occurs when two consecutive quarters of a negative gross domestic product exist. However, what leads to negative quarters of the gross domestic product? And where does this fit in terms of the overall business cycle?

According to Corporate Finance Institute, there are six stages to the business cycle: expansion, peak, recession, depression, trough, and recovery (CFI). During expansion, there is a decline in unemployment, high income, high wages, high supply and demand, high output, and high profits (CFI). During extended periods of expansion, inflation commonly occurs, where one or more of these factors is out of control, leading to above-average consumer price increases. However, debt holders can typically pay their debt during expansion, and overall economic investment is high (CFI). During the peak stage of the business cycle, economic growth reaches its peak and reverses course (CFI). After this point, consumers typically change their spending habits and become more conscious of the high prices in the economy.

Demand for goods and services declines during stage three of the business cycle. However, producers of these goods and services do not immediately notice the sharp decrease in demand, leading to oversupply (CFI). As a result, prices tend to fall. Due to the decrease in prices, all positive economic indicators mentioned above also started to fall, leading to a recession (CFI).

During excessively high inflation, such as what we saw recently in the United States, the government and Federal Reserve can intentionally slow down economic activity to help

consumers. I would argue that the recession we are supposedly in at the time of this writing (March 2023) was somewhat intentionally planned by the government and the Federal Reserve of the United States. As you can see, every macroeconomic variable has a cause and effect, which, in a way, offsets it. When there is an extreme rise in unemployment during a recession, we enter stage four of the business cycle, called a depression. Growth in the economy will continue to fall below the "steady growth line," which is an artificial "line" where a recession turns into a depression (CFI).



The negative saturation point of the economy is known as the trough and is the fifth stage of the business cycle (CFI). Prices and the level of supply and demand reach their lowest points, and national income has usually been depleted to some degree (CFI). Unemployment is usually at its highest point near the business cycle's trough. In other words, this is the low point for economic activity in the economy and is also the point where economic growth reverses and

becomes positive once again. This change leads us to the sixth and final stage of the business cycle, known as recovery.

Recovery is when the economy starts to recover from the recession or depression, and growth starts to increase (CFI). Supply and demand start increasing once again, investment starts increasing again, and debt holders can make payments again. Employment also starts increasing again as more production is necessary to keep up with the increasing demand.

The business cycle goes on nonstop; however, each stage's length varies widely from cycle to cycle. It should be noted that not every cycle will experience a depression; in fact, most do not. While this information cannot help us predict global recessions, it gives us the framework necessary to understand why recessions happen and at what stage they occur in the business cycle. The next chapter will help us understand what businesses and investors can do to prepare for recessions and how to react to them to minimize losses and, in some cases, even profit from them.

Chapter 4

Consumer and Investor Behavior During a Recession

Next, I believe it is useful to examine consumer and investor behavior during recessions. In a recent study from June 2022, the Bank of America Institute researched how consumers change their spending habits during recessions. The results are interesting and do not align with the spending habits I originally pictured.

They found that during economic downturns, consumers do not necessarily dine out less but at less expensive restaurants (Bank of America). Spending on “limited services” restaurants, such as fast food chains, increases during recessions. Additionally, Bank of America found that consumer spending on food as a percentage of total income has decreased from 20% in the 1970s to just 13.5% as of April 2022 (Bank of America). They believe that the rise of disposable income over the past 40 years has led to spending on other items rather than food, at least as a percentage of total income.

Another group of items that Bank of America researched was durable goods. A durable typically constitutes cars, appliances, and furniture. These items are sensitive to the business cycle because, typically, their purchase can be delayed when consumers have less disposable income. Durable goods are good indicators of real GDP growth and are watched closely by investors and economists (Bank of America). Bank of America found that furniture spending usually starts dropping months before the start of a recession, meaning that this can be a good indicator of the timeline of the start of a recession (Bank of America). During recessions, the housing market usually collapses to some degree, decreasing the furniture demand.

Lastly, Bank of America looked at consumer travel spending during recessions. They found no surprise; consumer travel spending usually decreases during a recession (Bank of America). Travel is something consumers can do without most of the time and is, therefore, one of the first things cut from consumer spending during a recession. It should also be noted that consumer travel spending declined the most during the 2001 and 2020 recessions, mainly due to the 9/11 attacks and COVID-19 restrictions, respectively (Bank of America).

Now that we have looked at consumer spending habits during a recession let's look at investing habits during one. According to Forbes, a bear market can be a false indicator of a recession, as the six recessions before 2001 were not bear markets (Forbes). Additionally, over half (7 out of 13) of the recessions since 1945 produced gains in the stock market (Forbes). However, this fact is not to say that a recession will not cause a bear market or vice versa. The two feed off of one another in the wrong circumstances, which causes economic hardships for both consumers and investors.

So, what can investors do to protect their investments during a recession? While there is no such thing as a "recession-proof" investment, some types of securities typically do better during recessions. Forbes suggests taking up defensive positions during recessionary environments, such as holding a higher weight in cash or fixed-income securities, such as CDs and treasury instruments (Forbes). Other non-cyclical investments, such as those in utilities, energy, healthcare, and consumer goods, can help to preserve investments.

Another strategy is to buy investments that pay high dividends. While this is not a bad strategy for any stage of the business cycle, they give investors extra income from their investments during a recession and make potential losses appear slightly less bad. Forbes suggests investing in "dividend aristocrats," or companies that have consistently increased

dividends for 25 or more years (Forbes). This pattern better guarantees an increasing dividend when the investing environment is less than desirable.

Another potentially profitable asset during recessions is real estate. As mentioned earlier, the housing market usually takes a hit during recessionary environments due to consumers not having the money to purchase a house or even make their mortgage payments in some cases. As a result of the lack of demand for housing, home prices typically drop, which introduces a unique opportunity for investors. Buying houses for a low price during recessions and then holding them until prices are higher is a common strategy. Real estate investment trusts (REITs) are a great way to get into real estate without physical work (Forbes). REITs trade on exchanges just like stocks, which makes them an easy way to get into real estate investing without the headache of flipping houses or renting them out to tenants.

Lastly, a common strategy for investors of all types is to buy and hold in the hopes that the recession is just a short-term detriment to the economy (Forbes). These investors typically ignore headlines and instead focus on the potential of future returns. Regardless, this kind of investing can be risky if certain securities do not respond to recessions like others. For example, investors may invest in something they believe will appreciate once a recession recedes only to find that the reason it was valued low was not due to the recession. This kind of investing can be very risky.

Now that we have given a background on recessions explained why they occur, and described consumer and investor behavior during them, let’s tie everything together by explaining why recessions are inevitable and predictable in many instances.

Chapter 5

Are Recessions Predictable?

After reading the first four chapters, you may ask, “are recessions inevitable?” According to Investopedia, most economists and financial analysts believe that recessions are inevitable as a natural part of the business cycle (Investopedia). But in the current state of our global economy, why is it impossible to continue economic growth indefinitely, which would eliminate recessions? The answer is complicated but can be mostly attributed to business errors that cause growth to become negative (Investopedia). While there is no set timeline for recessions, economists have become relatively good at predicting recessions, however inaccurately regarding their magnitude.

An interesting explanation for why recessions are predictable and inevitable comes from the Austrian Business Cycle Theory or ABCT. According to this theory, recessions are caused by the creation of new money, specifically in the form of loans and new deposits (Investopedia). As part of a bank’s business model, this is not out of some error like I mentioned above, and instead, it is simply how banks and financial companies operate. However, this causes a major increase in investment and causes consumer savings to decrease drastically over time (Investopedia). This effect creates an illusion of a strong economy as consumers are not only spending more, but also investing more, which, often artificially, the market prices of equity and debt securities. Due to these factors, errors now occur in business investment projects initially assumed to be profitable ventures (Investopedia).

These errors that are revealed can be due to an economic shock, such as a terrorist attack or a pandemic (as was the case in 2001 and 2020, respectively), but can also be due simply to the

over-issuance of money and debt financing in the overall economy (Investopedia). Over issuance of money and credit lending leads to many factors that lead to a recession: rising unemployment, increasing inflation, and the potential failure of small or start-up businesses. From what I have researched, I believe that once over-issuance occurs by central banks and lending agencies, an inevitable recession will occur and can be predicted rather accurately. I think that the timing of a recession, no matter the circumstances, can be rather difficult to predict because it is hard to quantify the magnitude of error in the economy.

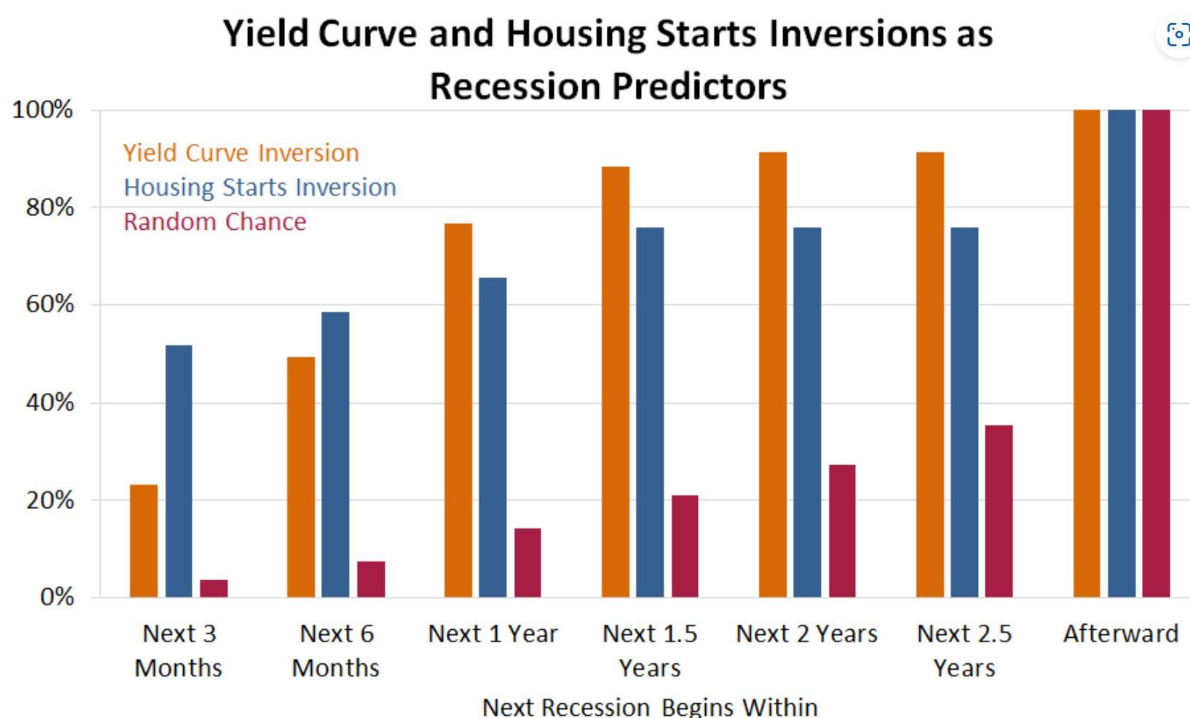
The question of the inevitability of recessions can be answered rather simply. From everything I have read and researched, I believe that s long as the concept of “fractional reserve lending” exists in a modern economy, that is, introducing new money and financing into the economy. The business cycle as we know it, which includes recessions, is inevitable (Investopedia). Unfortunately, given how the economy operates in many different ways, recessions are inevitable.

In accurately predicting a recession, there is more than simply speculating once the economy seems to be doing too well. Another leading indicator of a recession is the inversion of treasury yield curves. This relationship happens when the spread between longer and shorter-term treasuries nears 0 and eventually crosses it, causing the curves to “invert” (St. Louis Fed).

But what is a yield? A yield is a payment you receive for lending money to the government for a specific period. For example, as a consumer or business, you may purchase a 5-year treasury bond that pays a 7% semi-annual coupon. The yield is defined as the coupon rate divided by the bond's price, which can fluctuate with changes in interest rates and many other factors (St. Louis Fed). If investors believe that a recession is near, they may prefer to purchase

10-year treasuries to avoid reinvesting their money, which causes the yield of 1-year treasuries to rise, which tightens the spread (St. Louis Fed).

Another potential predictor of recessions is the housing sector. When consumers believe that a recession is nearing, for whatever reason that may be, they often put off buying a home because they know the home will likely be cheaper in the future, and they also know that they will likely have less income to spend on a home during the recession. When this happens, construction companies pause “starts” to housing projects, which is a good predictor of recessions (St. Louis Fed). The following graph represents, on average, the likelihood that a recession will occur in different future periods based on the inversion of both the yield curve and housing starts.



So, for example, given that the yield has inverted, there is about a 50% chance of a recession within the next six months. Additionally, given an inversion in housing starts, there is an almost 60% chance of a recession in the next six months. As you can see from this chart, as

time goes on, the likelihood of a recession occurring from the inversion of the yield curve increases at an increasing rate, while the likelihood of a recession occurring from the inversion of housing starts increases at a decreasing rate. Also, note how the likelihood of a recession occurring after two and a half years due to one of these is guaranteed. This pattern is where the difficulty in predicting emerges. It is much easier to predict recessions in the short term than it is in the long term.

Chapter 6

Accuracy in Forecasts

For the last chapter, I want to briefly highlight how accurately economists and analysts have predicted past recessions. Suppose we are simply looking at the two previous "predictors" of recession. In that case, the inversion of the yield curve and the inversion of housing starts, then recessions have been pretty accurately predicted since the Great Depression. Suppose we assume that each of the two signals a recession within the next six months; yield curve inversions have predicted 75% of recessions since the Great Depression, and inversions in housing starts have predicted 88%. This relationship proves that the inversion in housing starts is easily the best predictor of recessions. It is also a large part of why some economists predicted the Great Financial Crisis of 2007-2009.

Predicting recessions is extremely tricky and is not even close to an exact science. The fact that there is not a universally accepted definition of a recession makes defining them difficult and even harder to predict them. However, it should be noted that countless indicators in the economy help economists and analysts predict circumstances that often lead to what we generally consider a recession. It will be very interesting to see in the future how accurately we can predict recessions and what indicators will lead to them.

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