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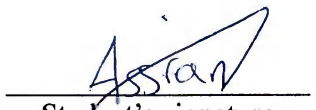

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THESIS

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MA. Management and Leadership

Gödöllő

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Hungarian University of Agriculture and Life Science
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The Power of Expansionary Fiscal Policy: An Analysis of Unemployment Reduction during Recessions

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Institute/Department: Institute of Business Sciences

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ABSTRACT

This thesis investigates the hypothesis that expansionary fiscal policies, such as increased government spending or reduced taxes, are more effective at reducing unemployment during recessions than contractionary fiscal policies, such as increased taxes or reduced government spending. Using economic data and analysis, this study aims to understand the impact of different fiscal policy measures on unemployment levels during economic downturns.

The study begins by defining expansionary and contractionary fiscal policies and discussing their potential effects on the economy. It then provides an overview of the theories and empirical evidence surrounding the effectiveness of these policies in reducing unemployment.

The research methods used in this study include a review of relevant literature and the analysis of economic data from previous recessions. The data is used to assess the relationship between different fiscal policy measures and unemployment levels in different countries.

The findings of this study suggest that expansionary fiscal policies, such as increased government spending or reduced taxes, are more effective at reducing unemployment during recessions than contractionary fiscal policies. This conclusion is supported by both theoretical models and empirical evidence, indicating that expansionary policies can play a critical role in mitigating the negative impacts of economic downturns on employment levels.

Overall, this thesis contributes to our understanding of the effectiveness of different fiscal policy measures in reducing unemployment during recessions and provides valuable insights for policy makers seeking to address economic challenges in the future.

Key words: Expansionary fiscal policies, contractionary fiscal policies, unemployment reduction, recessions, government spending, taxes, policy makers.

1. INTRODUCTION

The economic recession is a period of economic downturn that can have serious consequences for the functioning of an economy and the well-being of its citizens. Recessions are often characterized by high levels of unemployment, low output, and declining prices, which can have far-reaching impacts on individuals, businesses, and communities. In recent decades, many economies around the world have experienced severe recessions, including the Great Recession of 2008 and the COVID-19 pandemic. These crises have challenged policymakers to find effective responses to address the negative effects of the recession and protect the most vulnerable segments of the population.

One policy option that has been used to address recessions is expansionary fiscal policy, which involves increasing government spending and/or reducing taxes in order to stimulate demand and boost economic activity. This type of policy is based on the idea that the government can play a proactive role in counteracting the negative effects of a recession by providing a fiscal boost to the economy. Expansionary fiscal policy can take various forms, including public investment in infrastructure, support for businesses and households, and income transfers to the most vulnerable segments of the population.

In this thesis, we will conduct a systematic review of the literature on expansionary fiscal policy and its effects on the economy during a recession. We will examine both theoretical and empirical studies, looking at a range of countries and time periods. Our review will cover a range of topics, including the causes of unemployment, the measurement of unemployment, the connection between unemployment and inflation, fiscal and monetary policies as tools to fight cyclical unemployment, the IS-LM framework, expansionary monetary policy, austerity, the Recession of 2008 versus COVID-19, the Great Recession of 2008, the COVID-19 pandemic, the comparison, differences, and similarities of the two recessions, the number of lost jobs, the Economic Stimulus Act, and the real interest rate.

We will also consider the potential drawbacks of expansionary fiscal policy and discuss the implications of our findings for policymakers and other stakeholders. Our goal is to contribute to the ongoing debate about the usefulness of this policy during a recession, and to provide a nuanced and evidence-based assessment of its potential benefits and costs.

2. LITERATURE REVIEW

In this literature review, I will be exploring the causes of unemployment and how it is measured, the relationship between inflation and unemployment, the role of fiscal and monetary policies in shaping inflation, the concept of austerity, and the impact of recessions, including the recession of 2008 and the COVID-19 recession, on GDP and real interest rates.

2.1 THE CAUSES OF UNEMPLOYMENT

Frictional unemployment is a type of unemployment that results from the inherent mobility of the labor market. It occurs when there is a temporary mismatch between the skills and preferences of job seekers and the requirements and availability of jobs. This type of unemployment can affect individuals who are transitioning between jobs, such as recent graduates or those who have chosen to leave their current positions for various reasons, including further education or retirement. Frictional unemployment is a normal part of the economic cycle, as the constant influx of new job seekers and movement within the workforce can lead to temporary mismatches. In a growing and dynamic economy, it is inevitable that there will be periods of frictional unemployment as individuals search for job opportunities that align with their skills and career goals. However, it is important to note that frictional unemployment is typically of a short-term nature, as the mobility of the labor market allows individuals to eventually find suitable employment.

Structural unemployment is a long-term phenomenon that results from fundamental changes in the labor market. These changes can be driven by a variety of factors, including technological advancements, shifts in consumer demand, and changes in the overall structure of the economy. Structural unemployment can be challenging to address, as it often requires individuals to adapt to new skill sets or relocate to areas where their expertise is in higher demand.

The natural rate of unemployment, also known as the equilibrium unemployment rate, represents the minimum level of unemployment that an economy can expect to experience due to real or voluntary economic forces. It reflects the number of people who are unemployed due to the structure of the labor force, such as those who have been replaced by technology or those who lack the necessary skills to gain employment.

During times of economic downturn, such as the Great Recession of 2008, structural unemployment can disproportionately impact certain segments of the workforce, such as older

workers. These individuals may have difficulty finding new employment due to their lack of competitiveness in the job market and their reluctance to relocate for new opportunities. This can lead to longer periods of unemployment and potentially result in a higher natural rate of unemployment for their age group. It is important for policy makers and employers to consider the impacts of structural changes on the labor market and work to mitigate the negative effects on individuals and the economy as a whole.

The concept of full employment refers to the natural unemployment rate, which is the level of unemployment that exists in an economy due to normal labor market dynamics, such as voluntary job changes or seasonal fluctuations. This rate, also known as the Non-Accelerating Inflation Rate of Unemployment (NAIRU), represents the normal movement of labor into and out of employment and is not considered to be a cause for concern.

Unemployment that falls outside of the natural rate is referred to as cyclical, institutional, or policy-based unemployment. These types of unemployment can be caused by various factors, including economic shocks, technological advancements, or changes in government policy. For example, the 2008 recession and the COVID-19 pandemic may have increased the natural unemployment rate due to the loss of skills or the closure of businesses.

The concept of hysteresis refers to the persistence of an economic event even after the factors that led to that event have been resolved or have run their course. In the case of the 2008 recession, the unemployment rate may have continued to rise despite economic expansion and the official end of the recession, as occurred in 2008 and is projected to occur following the COVID-19 pandemic. This phenomenon can be attributed to the lingering effects of the recession, such as the loss of skills or the closure of businesses, which can take time to fully recover.

It is important for policymakers and employers to consider the potential impacts of economic shocks and other factors on the labor market and work to mitigate their negative effects on individuals and the economy. By understanding the dynamics of the natural unemployment rate and the causes of cyclical, institutional, and policy-based unemployment, it is possible to take proactive steps to address these issues and support a healthy and stable labor market.

Cyclical unemployment is a type of unemployment that results from fluctuations in the demand for goods and services within an economy. When demand falls, businesses may reduce their labor costs by laying off workers in order to stay financially viable. The cyclical unemployment

rate represents the percentage of the workforce that has been laid off due to economic downturns.

While cyclical unemployment is typically a reversible condition, it can persist for an extended period of time if the underlying economic recession is severe. The duration and severity of a recession are key determinants of cyclical unemployment. However, as an economy recovers from a recession, businesses may experience an increase in demand for their goods and services, leading to increased hiring and a reduction in cyclical unemployment.

One example of cyclical unemployment is the layoff of construction workers during the Great Recession following the 2008 financial crisis. The decline in the housing market resulted in a decrease in the demand for new home construction, leading to a rise in cyclical unemployment for construction workers. As the economy rebounded and the housing market recovered, demand for new home construction increased, leading to more hiring and a decrease in cyclical unemployment.

Policies aimed at addressing structural unemployment, also known as turnover unemployment, may not always be necessary as it is often driven by the normal movement of labor within the economy. The Federal Reserve, or the Fed, bears the primary responsibility for addressing cyclical unemployment, which is caused by fluctuations in the demand for goods and services.

However, in some cases, policies may be necessary to address structural unemployment and reduce the natural rate of unemployment. This type of unemployment is characterized by a mismatch between the skills and location of available workers and the requirements of job vacancies. It can often be resolved through labor mobility without the need for government intervention, as research has shown that movement of workers across states and regions can quickly reduce extreme levels of unemployment in certain areas.

To address structural unemployment and reduce the natural rate of unemployment, policies should focus on eliminating the mismatch between the skills of job seekers and the requirements of available positions. This can be achieved through measures such as providing student loans to low-income students to enable them to attend college, offering training grants to help workers improve and update their skills, and addressing the cost inflation that currently hinders access to higher education. By addressing these issues, it is possible to support a healthy and stable labor market and ensure that workers have the necessary skills to meet the demands of the job market.

2.1.1 The big bang inflation (hyperinflation)

Hyperinflation, defined as an inflation rate of 1,000% or more per year, can have significant impacts on the cost of living. As an example, economist Robert Gordon suggests that in the event of hyperinflation in the United States, a Big Mac could increase in price from approximately $2.50 to $2,500. According to Gordon, there are two primary causes of hyperinflation: wage indexation and deficit financing.

Wage indexation refers to the process of adjusting salaries in response to unanticipated changes and can contribute to hyperinflation when it leads to frequent wage increases and price increases in a spiral of inflation. On the other hand, deficit financing refers to the use of bond issuances or the printing of new money to finance government budget deficits. While deficit financing can lead to hyperinflation, it is often mitigated by the implementation of price controls during times of crisis, such as wars or pandemics. However, when these controls are lifted, the effects of deficit financing can result in an explosion of monetary growth.

According to Gordon, the core of hyperinflation is its cumulative and dynamic nature, which can be described as a vicious circle. A significant depreciation of a country's exchange rate can lead to wage indexation, which in turn can exacerbate the inflationary spiral. It is important to recognize that hyperinflation is not simply caused by external factors such as supply shocks or budget deficits, but rather is a result of these factors interacting in a complex and dynamic manner.

2.2 MEASUREMENT OF UNEMPLOYMENT

Unemployment is a key indicator of the health of an economy, as it reflects the number of individuals who are actively seeking employment but are unable to find it. Accurately measuring unemployment is therefore crucial for policymakers, businesses, and individuals alike, as it helps to inform decisions on everything from monetary and fiscal policy to hiring and investment.

There are several different approaches to measuring unemployment, each with its own strengths and limitations. In this article, we will explore the most common methods and discuss the key considerations involved in accurately measuring this important economic metric.

The most widely cited measure of unemployment is the official unemployment rate, also known as the U-3 rate. This measure is calculated by the Bureau of Labor Statistics (BLS) in the United States and is based on data from the monthly Current Population Survey (CPS). The CPS is a nationally representative sample of approximately 60,000 households that is conducted by the Census Bureau on behalf of the BLS.

To calculate the official unemployment rate, the BLS divides the number of unemployed individuals by the total number of individuals in the labor force. The labor force is defined as the sum of employed and unemployed individuals, with employed individuals being those who worked at least one hour in the previous week and unemployed individuals being those who did not work but actively sought employment in the previous four weeks.

The official unemployment rate is therefore a measure of the percentage of the labor force that is currently unemployed. It is typically reported as a seasonally adjusted figure, which means that it has been adjusted to account for seasonal variations in employment, such as the hiring of temporary workers during the holiday season.

While the official unemployment rate is a widely used and important measure of unemployment, it has several limitations that should be taken into account when interpreting the data. First, the official unemployment rate only counts individuals who are actively seeking employment. This means that it does not include individuals who have given up on finding a job or who are not looking for work due to other factors, such as being in school or caring for a family member. As a result, the official unemployment rate may understate the true level of unemployment in an economy. Second, the official unemployment rate only counts individuals who are not working but are actively seeking employment. This means that it does not include

individuals who are working part-time but would prefer to be working full-time, or those who are working in jobs that are below their skill level or pay less than they would like. These individuals are often referred to as "underemployed" and their situation can have a significant impact on the overall health of the economy.

In addition to the official unemployment rate, there are several other measures of unemployment that aim to capture different aspects of the employment landscape. These include:

- The U-4 rate, which includes discouraged workers in the unemployment calculation. Discouraged workers are individuals who have given up on finding a job due to a lack of available openings or because they believe they are not qualified for the positions that are available.
- The U-5 rate, which includes discouraged workers and other "marginally attached" workers in the unemployment calculation. Marginally attached workers are individuals who are not actively seeking employment but are willing to work and have looked for a job in the past year.
- The U-6 rate, which includes all of the above categories as well as part-time workers who would prefer to be working full-time. This measure is often referred to as the "real" unemployment rate, as it takes into account a broader range of individuals who are not fully employed.

In addition to these measures, there are also a number of other indicators that can provide insight into the state of the labor market, such as the labor force participation rate (the percentage of the population that is either employed or actively seeking employment), the employment-to-population ratio (the percentage of the population that is employed), and the average duration of unemployment (the average length of time that individuals are unemployed).

Accurately measuring unemployment is not without its challenges. One key challenge is the fact that unemployment is a dynamic phenomenon, with individuals entering and exiting the labor force on a regular basis. This means that the official unemployment rate can fluctuate significantly over short periods of time, making it difficult to interpret the data.

Another challenge is the fact that the official unemployment rate is based on self-reported data, which can be subject to biases and errors. For example, individuals may not accurately report their employment status or their efforts to find work, leading to inaccuracies in the data.

Measuring unemployment can be difficult in economies where the informal sector (e.g. the informal economy, or "black market") plays a significant role. In these cases, it can be difficult to accurately capture the employment status of individuals who are working informally, as they may not be included in official surveys.

2.3 THE CONNECTION BETWEEN UNEMPLOYMENT AND INFLATION

Inflation is a phenomenon characterized by the gradual erosion of the purchasing power of a particular currency. It can be quantified by the increase in the average price level of goods and services in an economy over time. When the general level of prices increases, it means that a unit of money is able to buy less than it did previously.

The unemployment rate is a key indicator of the health of an economy. A falling unemployment rate is often associated with higher GDP, higher wages, and stronger industrial production. Given that governments can often lower the unemployment rate through expansionary fiscal or monetary policies, it is not surprising that policymakers frequently aim to reduce the unemployment rate through these means. However, the relationship between the unemployment rate and the inflation rate is one of the reasons why policymakers do not always prioritize a lower unemployment rate as their primary goal.

In general, when the unemployment rate falls below a certain level known as the natural rate, the inflation rate tends to rise and continue to increase until the unemployment rate returns to its natural level. Conversely, when the unemployment rate rises above the natural rate, the inflation rate tends to slow. The natural rate of unemployment is the rate of unemployment that is consistent with long-term economic growth. If the unemployment rate falls below the natural rate, it indicates that the economy is growing faster than its maximum sustainable rate, which puts upward pressure on wages and prices in general, leading to higher inflation. On the other hand, if the unemployment rate rises above the natural rate, it exerts downward pressure on wages and prices, resulting in lower inflation. Wages make up a significant portion of the costs of goods and services, so changes in wage levels tend to have a similar effect on average prices.

Inflation and unemployment have traditionally had an inverse relationship, as depicted by the Phillips curve. Low unemployment is associated with higher inflation, while high unemployment is associated with lower inflation or even deflation. This relationship makes intuitive sense: when unemployment is low, more consumers have disposable income to spend, which drives up demand for goods and services and pushes prices higher. Conversely, during periods of high unemployment, consumers tend to spend less, which leads to lower demand and lower prices.

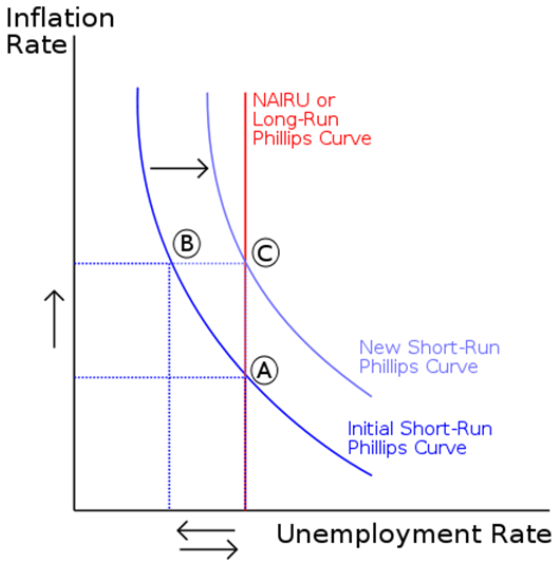

Figure 1 - The Phillips curve

(Source: www.voxeu.org)

Inflation expectations and sudden changes in the supply of goods and services are additional factors that can contribute to fluctuations in the inflation rate. Inflation expectations play a significant role in determining the actual level of inflation, as individuals tend to take these expectations into account when making budget decisions or negotiating salaries. Changes in the availability of inputs used in the production process, such as oil, can also impact the final price of goods and services in the economy, thereby influencing the inflation rate.

The interrelationship between inflation and unemployment poses a number of challenges for policymakers who are responsible for implementing fiscal and monetary policies. Policies that boost economic output and reduce unemployment tend to lead to higher inflation, while policies that curb inflation generally hinder economic growth and increase unemployment.

Both inflation and unemployment have costs, although economists differ in their assessments of the relative costs of these phenomena. It is generally agreed that stable inflation is less harmful than highly volatile, unexpected inflation, and that hyperinflation is more costly than steady, creeping inflation. Some economists argue that reducing the inflation rate to zero is desirable, while others believe that the risks of steady, low inflation are minimal.

According to economist Robert Gordon, "the costs of turnover unemployment are relatively low, and turnover unemployment typically lasts only a few weeks. But the costs of mismatch unemployment can be very high, leading to family breakdown, mental illness, loss of health

insurance, and a decline in job skills. For this reason, many economists believe that the costs of mismatch unemployment outweigh the costs of a steady, creeping inflation of, say, 3 percent."

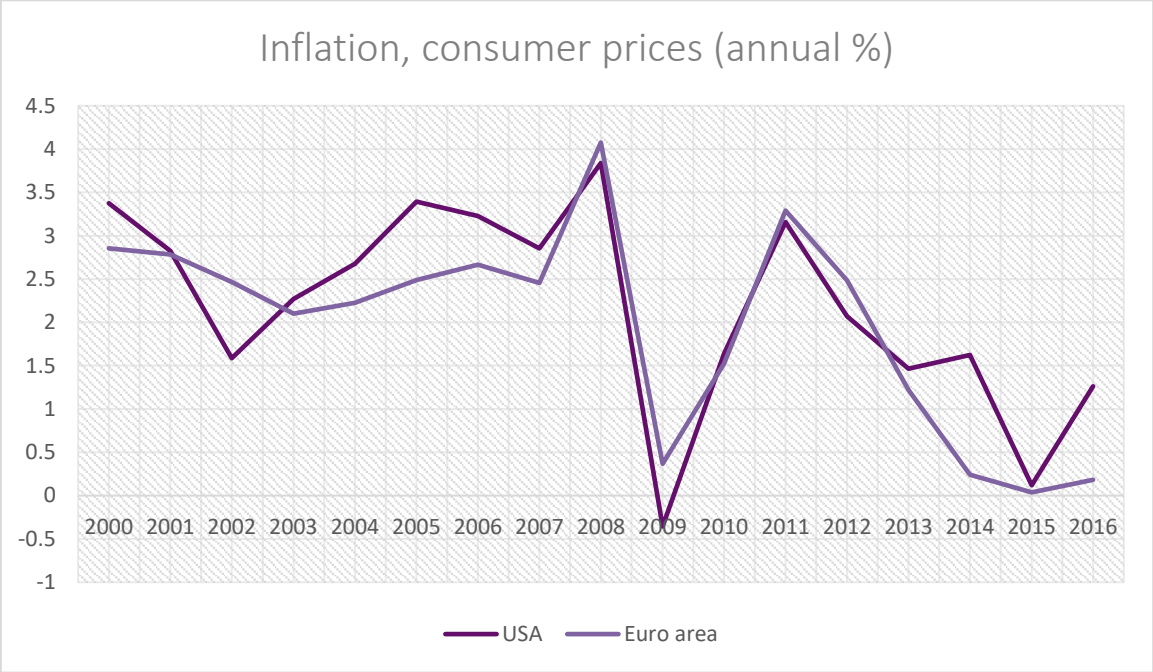

Figure 2

(Source: data.worldbank.org)

Figure 2 illustrates a sharp drop in inflation in 2007-08, when the world experienced a severe recession and a surge in unemployment.

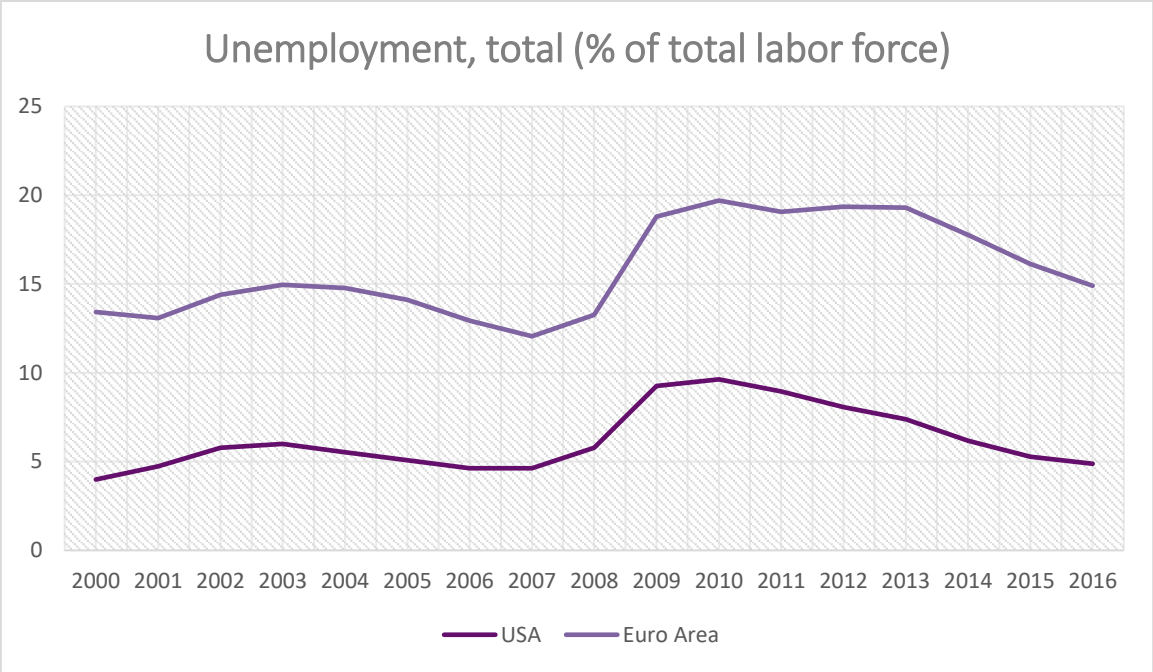

Figure 3

(Source: data.worldbank.org)

The Phillips curve demonstrates that there is an inverse relationship between inflation and unemployment, as demonstrated in Figures 2 and 3.

During and after the recession of 2007-2009, the actual unemployment rate remained significantly higher than estimates of the natural rate of unemployment for an extended period. This persistent high unemployment was a major concern for policymakers and posed a number of challenges for the economy. Despite the elevated unemployment rate, however, the average inflation rate decreased by less than one percentage point during this period, which was unexpected given the predictions of negative inflation rates based on the natural rate model.

One possible explanation for this discrepancy is that the natural rate of unemployment may not have been an accurate predictor of inflation in the aftermath of the recession. The recession itself may have had a lasting impact on the labor market and the economy, disrupting the usual relationship between unemployment and inflation and rendering the natural rate model less reliable. Another possibility is that other factors, such as changes in the supply of goods and services or shifts in inflation expectations, may have offset the downward pressure on inflation that would have been expected based on the natural rate model.

In more recent years, as the economy has recovered and the unemployment rate has approached the natural rate, there has been no sign of accelerating inflation. This suggests that the relationship between unemployment and inflation may have changed in the wake of the recession, or that other factors may be influencing the inflation rate. Regardless of the cause, it is clear that the natural rate of unemployment is just one of several considerations that policymakers must take into account when analyzing the state of the labor market and the broader economy.

2.4FISCAL AND MONETARY POLICIES AS TOOLS TO FIGHT CYCLICAL UNEMPLOYMENT

Fiscal and monetary policies are two primary tools that governments and central banks can utilize to address cyclical unemployment, which is a type of unemployment that arises during economic downturns or recessions. Cyclical unemployment is caused by a lack of demand for goods and services, resulting in reduced business activity and layoffs of workers. To combat cyclical unemployment and stimulate economic growth, policymakers can implement a range of measures designed to increase aggregate demand and improve the functioning of the labor market.

Fiscal policy, which involves the use of government spending and taxation to influence economic activity, is one approach that can be used to increase aggregate demand and reduce unemployment. During times of economic downturn, the government can increase spending on infrastructure projects, social programs, or other initiatives that create jobs and stimulate demand for goods and services. Additionally, the government can reduce taxes to put more money in the pockets of consumers and businesses, which can encourage spending and boost demand.

Monetary policy, which is the use of interest rates and the money supply to influence economic activity, is another tool that can be employed to address cyclical unemployment. Central banks, such as the Federal Reserve in the United States, can lower interest rates to make borrowing cheaper and encourage investment and spending. They can also engage in quantitative easing, which involves the purchase of securities, such as government bonds, in order to increase the money supply and stimulate demand.

It is important to note that both fiscal and monetary policies can have unintended consequences, such as higher inflation or increased government debt. Therefore, it is crucial for policymakers to carefully consider the potential impacts of these measures and use them in a responsible manner.

Fiscal and monetary policies are effective tools for combating cyclical unemployment and promoting economic growth. However, it is important for policymakers to carefully consider the potential consequences of these measures and to use them in conjunction with other strategies to address the root causes of cyclical unemployment and promote long-term economic stability.

2.4.1 The IS-LM Framework

The IS-LM framework is a macroeconomic model that is used to analyze the interaction between the goods and financial markets in an economy. The IS curve represents the relationship between the interest rate and the level of real output (gross domestic product) in the goods market, while the LM curve represents the relationship between the interest rate and the level of money demand in the financial market.

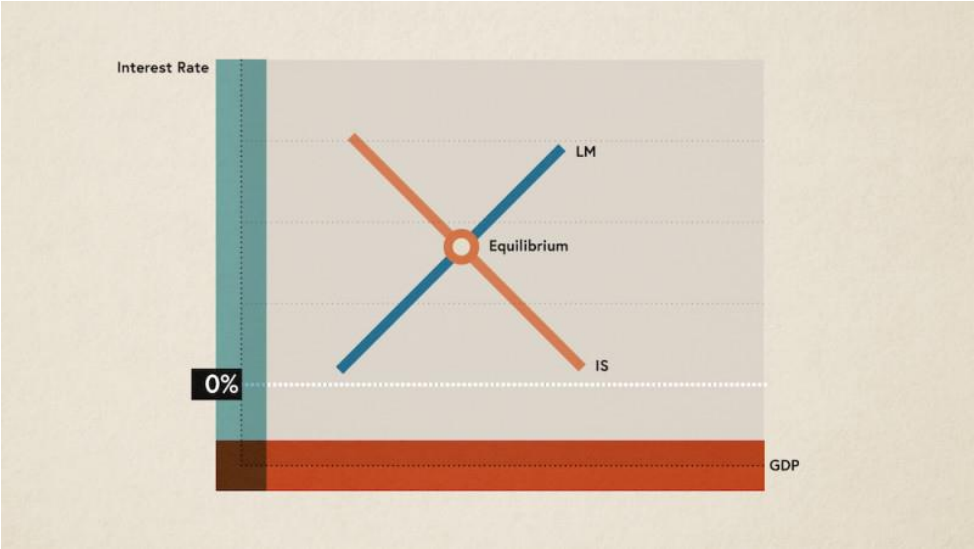

Figure 4 IS-LM curve

(Source: www.masterclass.com)

The IS curve represents the equilibrium in the goods market, where the demand for goods and services is equal to the supply of goods and services. This equilibrium is affected by various factors, including the level of consumer spending, the level of investment, and the level of government spending. When the interest rate is low, the demand for goods and services tends to be high, as businesses and consumers are more willing to borrow and spend. As the interest rate increases, the demand for goods and services decreases, as the cost of borrowing becomes less attractive.

The LM curve represents the equilibrium in the financial market, where the demand for money is equal to the supply of money. The demand for money is influenced by various factors, including the level of income, the level of prices, and the level of interest rates. When the interest rate is low, the demand for money is high, as people are more likely to save and hold

on to their money. As the interest rate increases, the demand for money decreases, as the opportunity cost of holding money becomes greater.

The intersection of the IS and LM curves represents the overall equilibrium in the economy, where the goods market is in equilibrium and the financial market is in equilibrium. This equilibrium is determined by the interest rate, which adjusts to bring the goods and financial markets into balance. If the goods market is in disequilibrium, for example, if there is an excess supply of goods, the interest rate will adjust to stimulate demand for goods and bring the market back into equilibrium. Similarly, if the financial market is in disequilibrium, the interest rate will adjust to stimulate demand for money and bring the market back into equilibrium.

The IS-LM framework is a useful tool for policymakers and economists to understand how changes in the interest rate can affect the levels of output and employment in an economy. For example, if the central bank wants to stimulate economic growth, it can lower the interest rate, which will shift the IS curve to the right and increase the level of output and employment. On the other hand, if the central bank wants to reduce inflation, it can raise the interest rate, which will shift the IS curve to the left and decrease the level of output and employment.

It is important to note that the IS-LM framework is a simplified model and does not take into account all of the complex factors that can influence the goods and financial markets. Additionally, the model assumes that prices and wages are fixed, which may not always be the case in the real world. Despite these limitations, the IS-LM framework remains a useful tool for analyzing the interactions between the goods and financial markets and the impact of changes in the interest rate on economic activity.

The demand for money is influenced by both income and interest rate. As income increases, the demand for money also increases, as individuals have more resources to hold onto and save. On the other hand, as the interest rate increases, the demand for money decreases, as the opportunity cost of holding money becomes greater. These factors are captured in the equation MD=f (Y, i), which shows that the demand for money is a function of income (Y) and the interest rate (i).

The central bank has the ability to control either the money supply or the interest rate, but not both at the same time. By altering the money supply, the central bank can influence the level of

liquidity in the economy and affect the demand for money. Alternatively, the central bank can use the interest rate as a tool to stimulate or restrain economic activity.

Equilibrium in the financial market occurs when the demand for money is equal to the supply of money. This equilibrium is represented by the equation MS=MD, which shows that the money supply is equal to the demand for money. If the demand for money is greater than the supply, the interest rate will increase until the market reaches equilibrium. Similarly, if the supply of money is greater than the demand, the interest rate will decrease until the market reaches equilibrium.

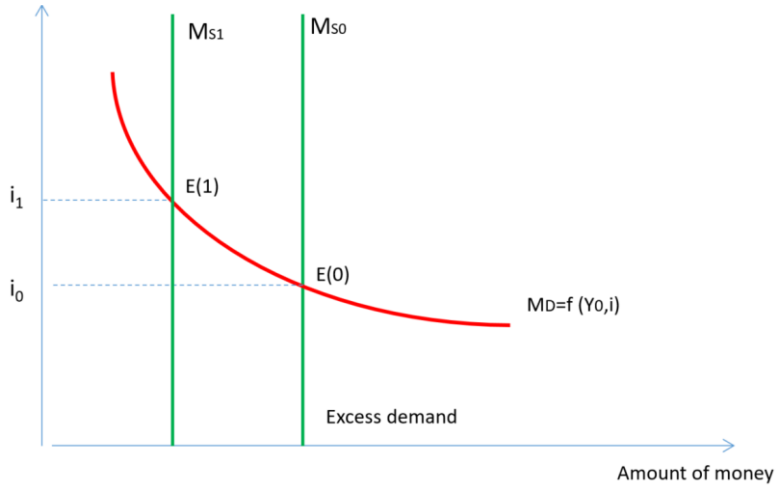

Figure 5 Demand equal to supply

(Source: own compilation)

Higher income causes the M^D curve to shift to the right and the interest rate to rise.

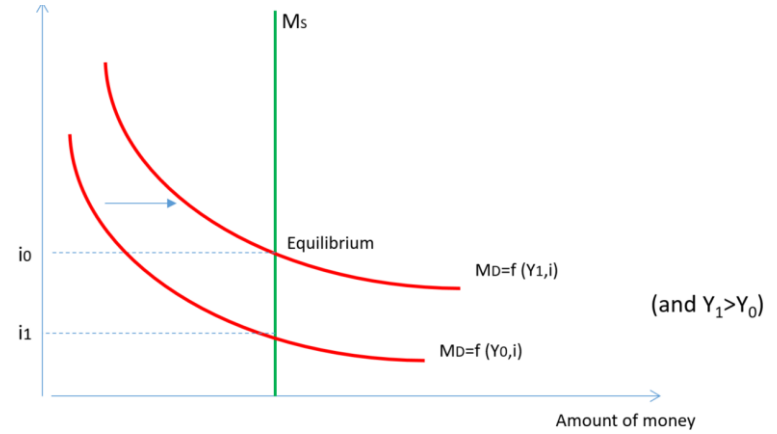

Figure 6 increased interest rate caused by higher income

(Source: own compilation)

There is a particular case in which the demand for money exhibits a unique behavior, known as "the liquidity trap." At a zero interest rate, the demand for money becomes horizontal, meaning that the demand for money increases significantly. This is because both money and bonds pay the same interest rate, which is zero. As a result, individuals are divided between holding cash and holding bonds, leading to a significant increase in the demand for money. As shown in the graph, the money market equilibrium can occur at a zero interest rate in this special case.

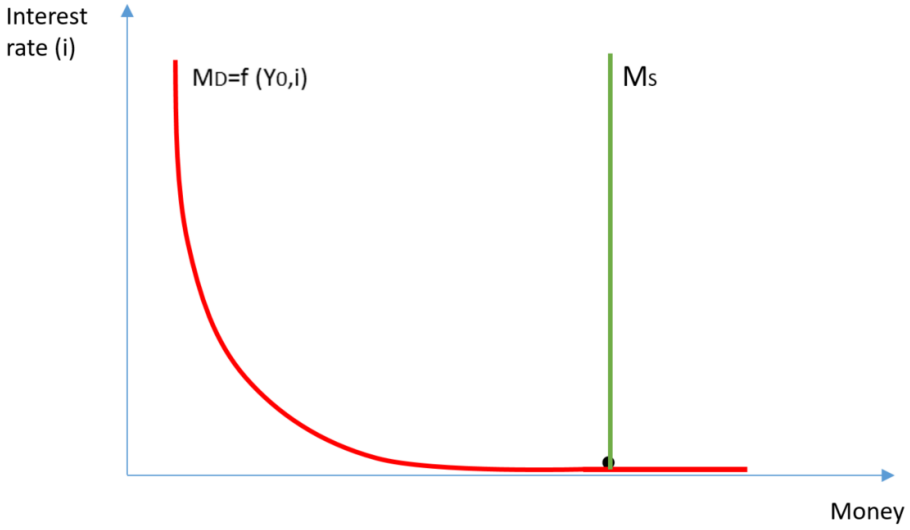

Figure 7 equilibrium at zero

(Source: own compilation)

A rise in the money supply causes the Money supply and LM curves to shift outward, as demonstrated in the figure 11 below. As money supply increases, the horizontal section of the LM curve (liquidity trap) increases.

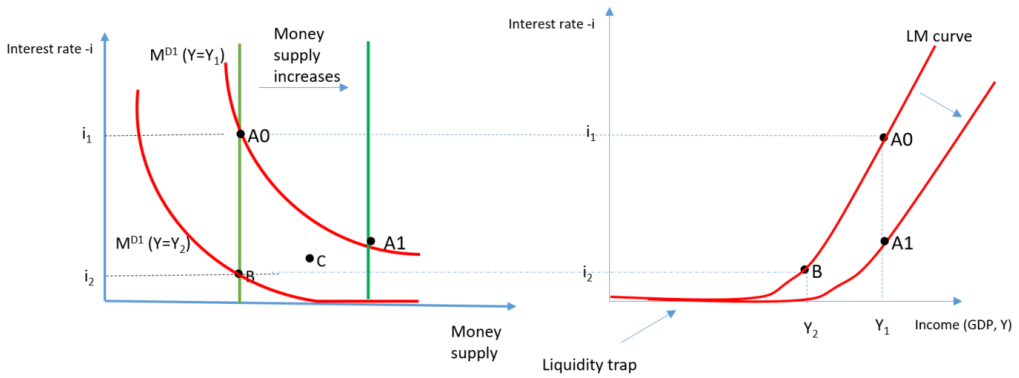

Figure 8

(Source: own compilation)

The only point in the graph below where both the money and goods markets are in equilibrium is at point E. Companies produce as much as they can sell, and money supply equals money demand. It is critical to recognize that a market economy will always converge to point E on its own because market forces (supply and demand in the goods and money markets) cause the markets to reach equilibrium. To put it another way, the economy ends up at point E by nature.

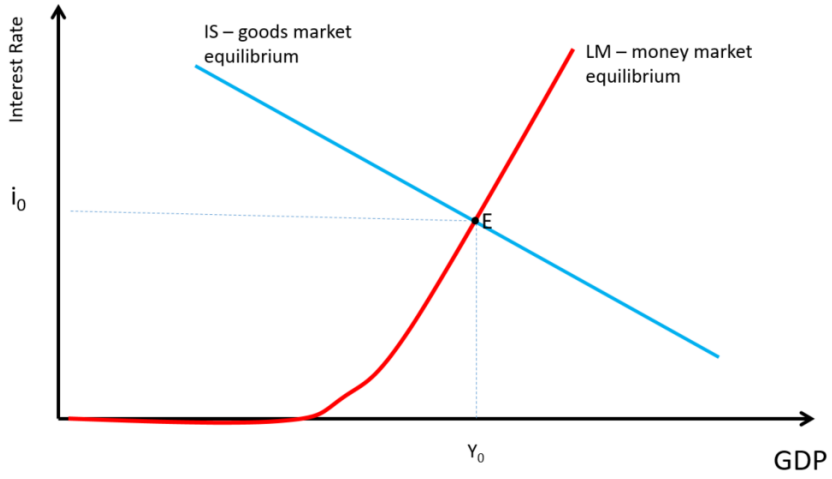

Figure 9

(Source: own compilation)

Is it, nevertheless, correct to be at point E? And to answer this, we must first look at **potential output**.

Potential output indicates the level of output that can be produced when the labor market is in equilibrium, which is at full employment. However, because there are always some frictions

in the labor market, equilibrium in the labor market (full employment) does not imply that the unemployment rate (U) is zero as anticipated in the previous chapters.

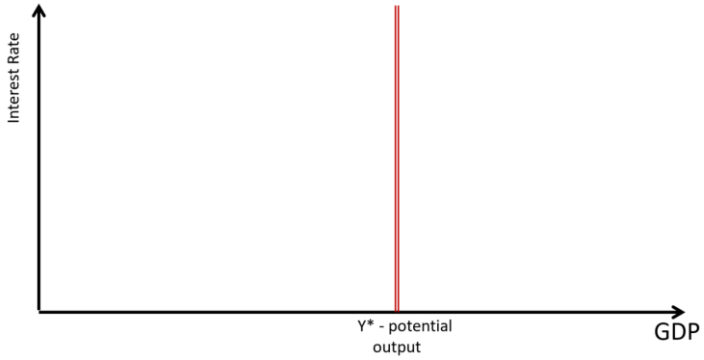

Figure 10

(Source: own compilation)

2.4.2 Expansionary Monetary Policy

Expansionary fiscal policy is a type of economic policy that seeks to stimulate economic activity by increasing government expenditure and decreasing taxes. The goal of this policy is to boost aggregate demand and stimulate economic growth, particularly during periods of economic recession. By providing more money in the hands of consumers, the government hopes to encourage increased consumption and investment, which can lead to increased economic activity. However, it is important to note that expansionary fiscal policy can also have short-term costs, such as increasing the budget deficit or decreasing surpluses.

Contractionary fiscal policy is the opposite of expansionary fiscal policy, and involves increasing taxes or decreasing government spending in order to restrict economic growth. This type of policy is often implemented in order to address issues such as high inflation or overheating in the economy.

Demand-management policies are those that aim to adjust the aggregate demand curve in order to achieve specific objectives, such as lowering unemployment or inflation. The government can manipulate various factors that influence aggregate demand, such as government spending and taxation, in order to achieve these goals. As shown in Figure 11, the aggregate demand curve represents the total quantity of all goods and services demanded by the economy at different price levels, and can be influenced by demand-management policies.

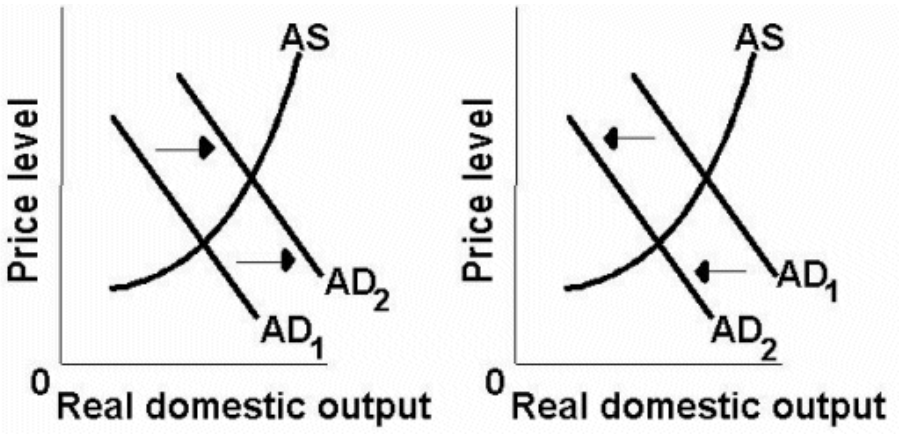

Figure 11

(Source: www2.harpercollege.edu)

According to Keynesian economic theory, expansionary fiscal and monetary policy are effective tools that governments can use to stimulate economic activity during periods of recession. When aggregate demand falls, as it often does during these periods, companies and individuals may reduce their expenditure, leading to a downward spiral in which reduced demand leads to further cuts in spending. Expansionary fiscal policy, which involves increasing government spending on goods and services and decreasing taxes, can help to break this cycle by boosting demand and stimulating economic growth.

Fiscal policy refers to the deliberate changes in tax rates, government expenditure, or both that are implemented by governments in order to achieve full employment, price stability, and economic growth. Expansionary fiscal policy involves increasing government spending on goods and services and decreasing taxes in order to increase demand and stimulate economic growth. On the other hand, contractionary fiscal policy involves reducing government spending on goods and services and increasing taxes in order to reduce aggregate demand and control inflation. Both expansionary and contractionary fiscal policy can be used as tools to manage the economy and achieve specific objectives.

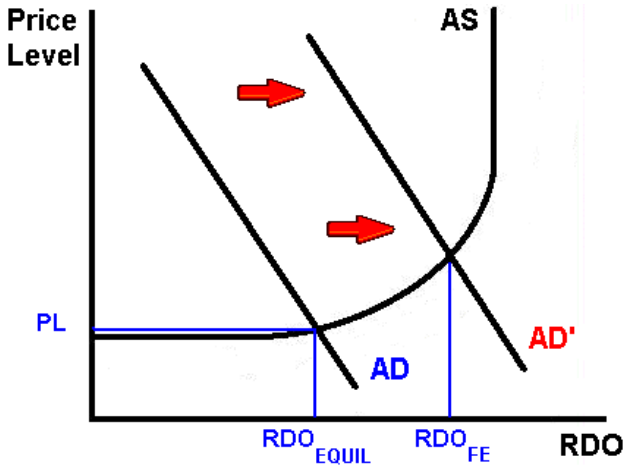

Figure 12 Expansionary Fiscal Policy

(Source: www.voxeu.org)

Expansionary fiscal policy aims to minimize unemployment. As a result, the tools would be increased government expenditure and/or lower taxes. This would force the AD curve to shift to the right, raising real GDP and cutting unemployment while also causing some inflation.

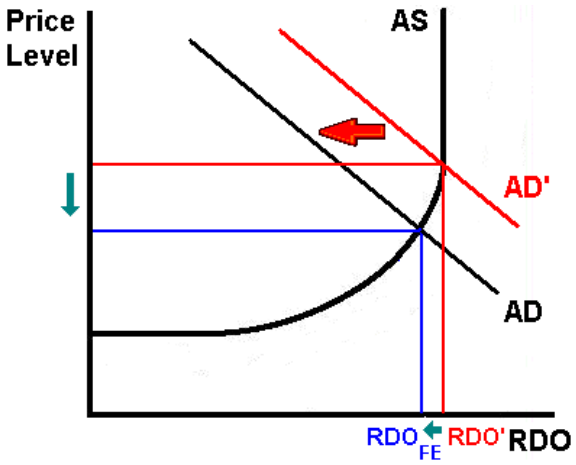

Figure 13 Contractionary Fiscal Policy

(Source: www2.harpercollege.edu)

Contractionary fiscal policy is a type of economic policy that aims to reduce inflation by decreasing government spending and/or increasing taxes. This policy shifts the aggregate demand curve to the left, lowering inflation but potentially resulting in higher unemployment.

It is important to note that the government can also manipulate other factors, such as taxes, spending, and transfers, in order to alter the IS curve. Meanwhile, the central bank can adjust the money supply and shift the LM curve. The equilibrium in both the goods and money markets is determined by the intersection of the IS and LM curves, where Y and I are equal.

In the labor market, equilibrium is achieved when the unemployment rate is low (typically between 2-5%) and equal to the natural rate, which is the rate of unemployment that is consistent with long-term economic growth. If the goods and money market equilibrium occurs below potential output, the labor market experiences excess supply and unemployment exceeds the natural rate. The further the actual output (Y) is from potential output (Y*), the worse the state of the labor market.

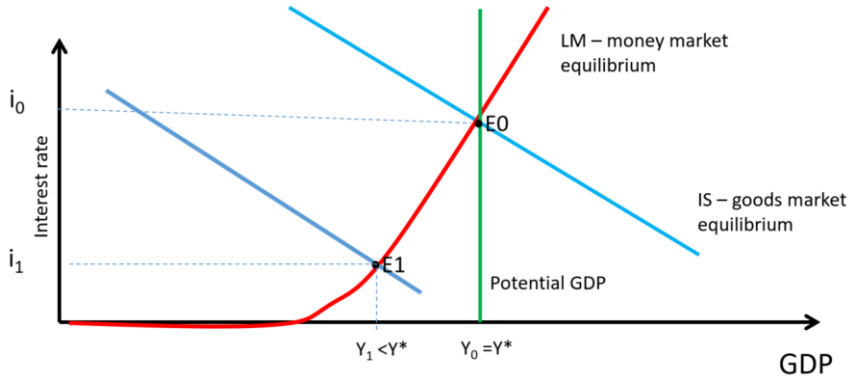

Figure 14

(Source: own compilation)

Following an expansionary monetary policy can sometimes be enough to restore full employment as shown in the graph below.

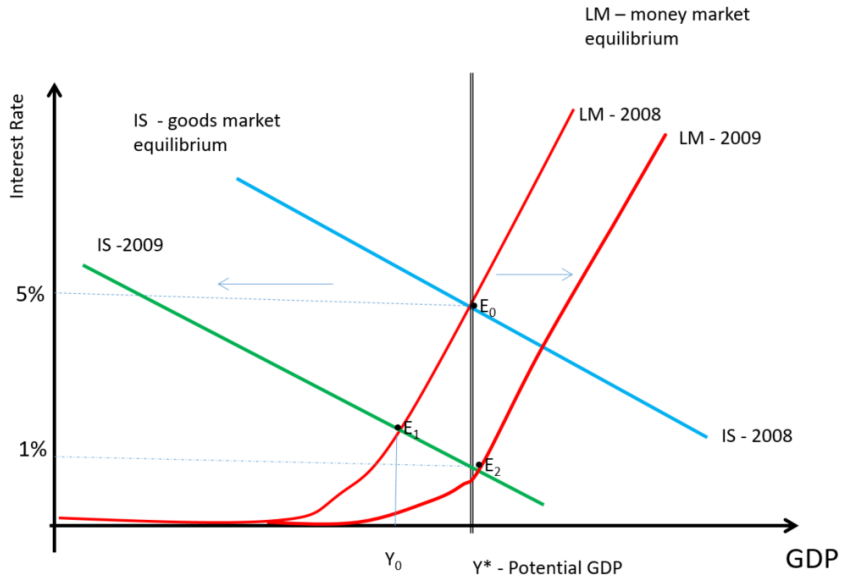

Figure 15

(Source: own compilation)

However, monetary policy is no longer useful if the economy has fallen into the liquidity trap that is Zero lower bound - ZLB prevails as shown in graph below.

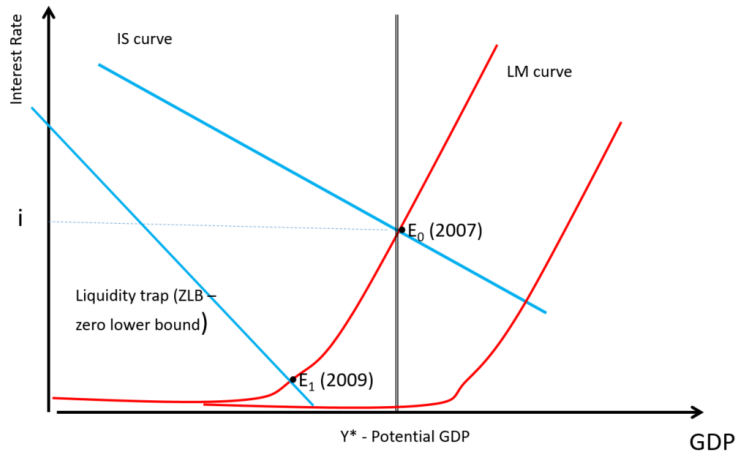

Figure 16

(Source: own compilation)

The burning question is what economic policy can do to restore full employment in the situation of ZLB? If the economy has slipped into a liquidity trap, the only way to achieve full employment is to implement expansionary fiscal policy, as previously mentioned. The government must either raise spending or reduce taxes in order to move the IS curve to the right as seen in the graph.

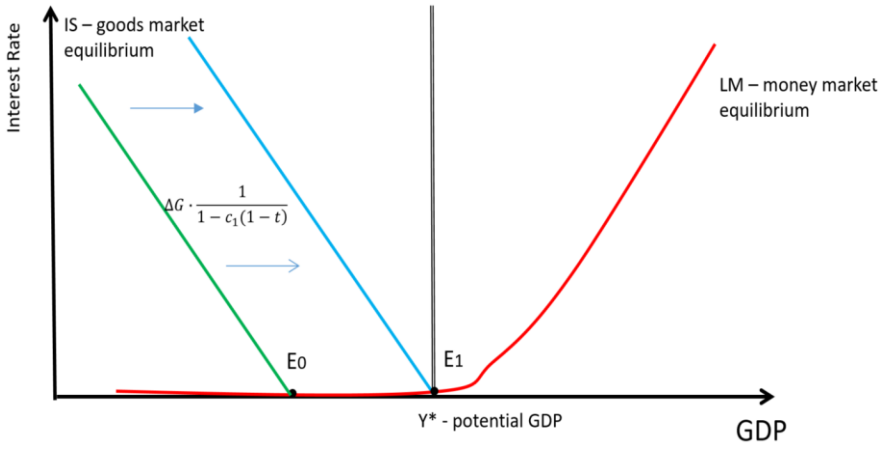

Figure 17

(Source: own compilation)

However, it is important to note that implementing expansionary fiscal policy, such as increasing government spending or decreasing taxes, can result in higher budget deficits and public debt. During times of crisis, it may not be appropriate to focus on reducing the deficit and debt, as this could shift the IS curve to the left and exacerbate the problem. Instead, it may be more advisable to tolerate and accept a larger budget deficit and public debt in order to stimulate economic activity. As economist John Maynard Keynes famously stated, "The boom, not the slump, is the right time for austerity at the Treasury." It is important to carefully consider the consequences and trade-offs of fiscal policy, particularly in times of economic uncertainty.

2.5 AUSTERITY

Austerity refers to the process of implementing fiscal policy measures that aim to reduce government budget deficits and debt levels through spending cuts and/or tax increases. These measures are often implemented during periods of economic recession or when a country is facing high levels of public debt.

The concept of austerity has been controversial in recent years, with some arguing that it is necessary to address unsustainable levels of public debt and others claiming that it can have negative effects on economic growth and social welfare. The debate over austerity is closely linked to the broader debate over the role of government in economic policy and the trade-offs between fiscal stability and economic growth.

The main arguments in favor of austerity are that it can help to reduce the burden of public debt on future generations and improve confidence in the government's ability to manage its finances. High levels of public debt can increase the risk of default or financial instability, which can have negative consequences for the economy. By reducing budget deficits and debt levels, governments can reduce the risk of these outcomes and improve their ability to borrow at favorable rates.

However, critics of austerity argue that it can have negative impacts on economic growth and social welfare. When governments cut spending or raise taxes, it can reduce aggregate demand and lead to slower economic growth. This can be particularly damaging during economic recessions, when demand is already weak. In addition, austerity measures can disproportionately affect the most vulnerable members of society, such as the elderly, low-income households, and those reliant on government services.

The empirical evidence on the effectiveness of austerity is mixed. Some studies have found that austerity measures can be effective at reducing public debt levels and improving fiscal stability. However, other studies have found that austerity can have negative impacts on economic growth and social welfare. For example, a study by the International Monetary Fund (IMF) found that austerity measures implemented in European countries during the Eurozone crisis had a larger negative impact on GDP growth than expected (Alesina and Ardagna, 2010).

Ultimately, the decision to implement austerity measures should be guided by the specific economic and fiscal circumstances of a country. In some cases, austerity may be necessary to address unsustainable levels of public debt and improve fiscal stability. However, in other cases,

the negative impacts on economic growth and social welfare may outweigh the benefits of reducing public debt. It is important for policymakers to carefully consider the trade-offs involved in implementing austerity measures and to ensure that any measures are implemented in a way that minimizes the negative impacts on the economy and society.

The debate over austerity is complex and multifaceted, with arguments both in favor of and against its implementation. While it may be necessary in some cases to address unsustainable levels of public debt, it is important to carefully consider the potential negative impacts on economic growth and social welfare. Policymakers should aim to strike a balance between fiscal stability and economic growth in order to achieve the best outcomes for the economy and society.

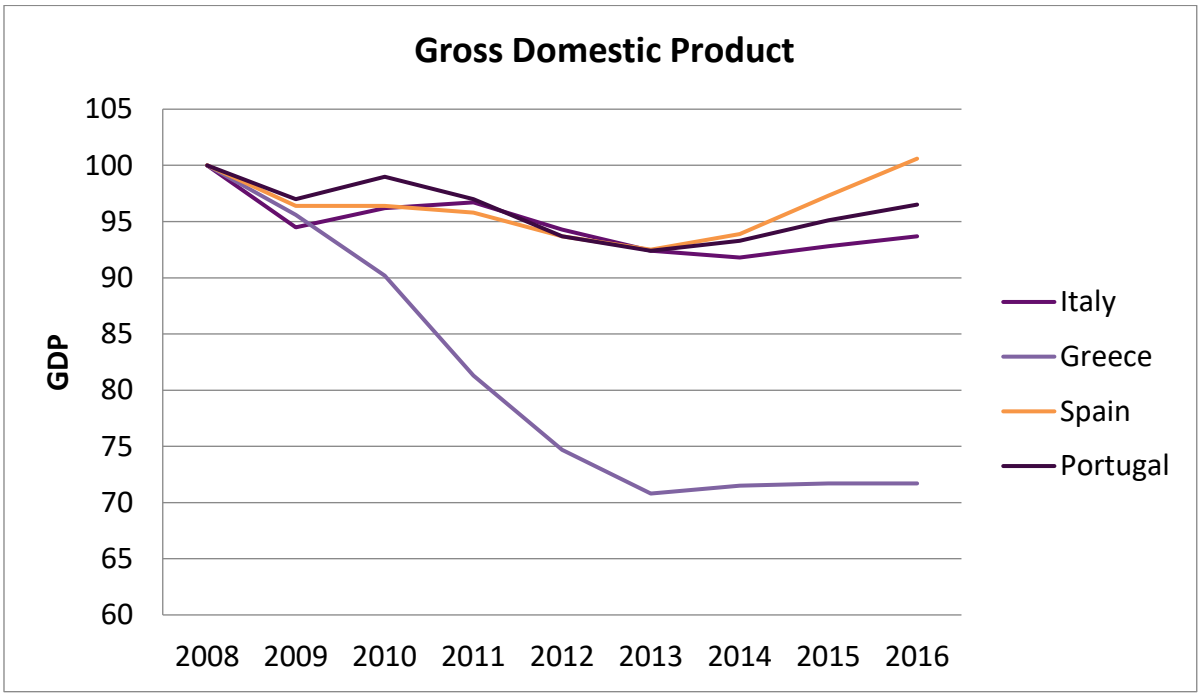

Figure 18 Peripheral countries performed very poorly

(Source: Eurostat, own compilation)

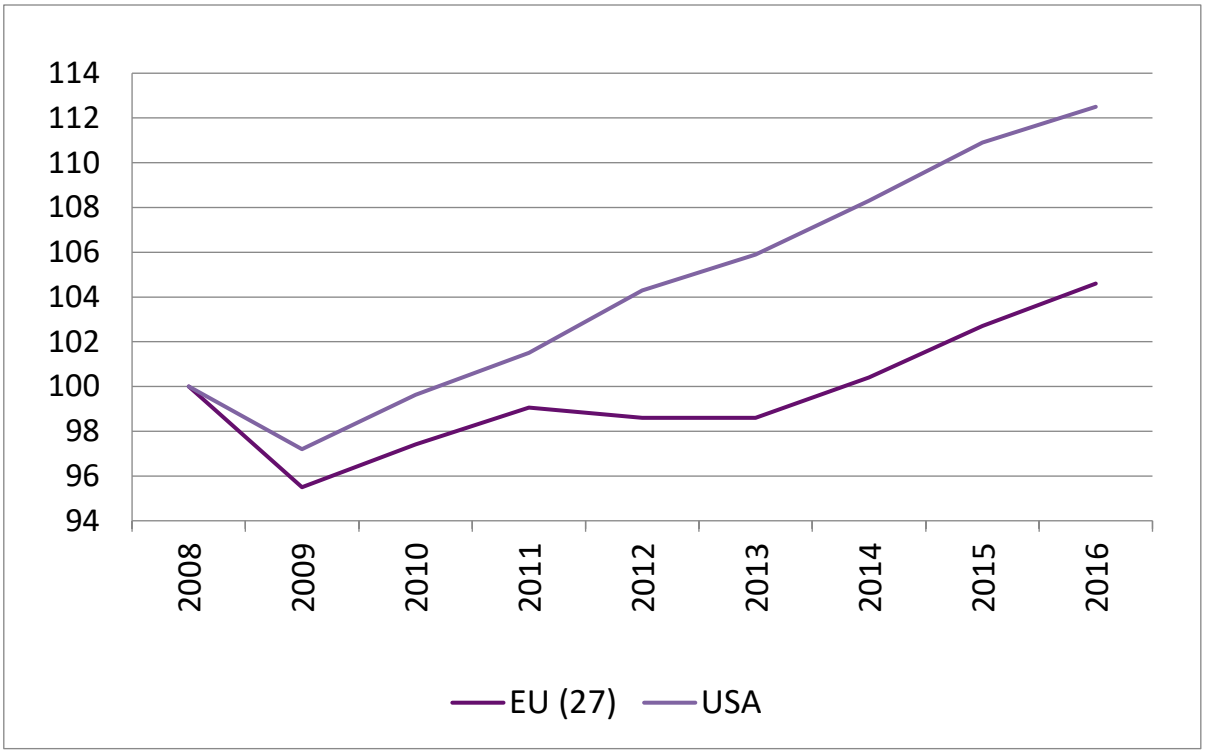

Figure 19 Comparison between USA and EU

(Source: Eurostat, own compilation)

One of the most well-known examples of austerity during a recession is the European sovereign debt crisis of the late 2000s. Several European countries, including Greece, Portugal, and Spain, implemented austerity measures in an attempt to address high levels of public debt and restore investor confidence. These measures often included spending cuts and tax increases, as well as structural reforms such as labor market and pension reform.

The impact of austerity on economic recovery during the European sovereign debt crisis has been the subject of much debate. Some argue that the austerity measures implemented were too harsh and prolonged the recession, leading to significant social and economic costs. Others argue that the measures were necessary to address unsustainable levels of debt and that the economic recovery would have been slower without them.

Overall, the effectiveness of austerity as a tool for addressing recessionary conditions is complex and depends on a range of factors, including the specific economic circumstances of a country and the nature of the austerity measures implemented. As such, the appropriate use of austerity in recessionary situations requires careful consideration and analysis.

2.6 THE RECESSION OF 2008 VERSUS COVID-19

2.6.1 Great Recession of 2008

The Great Recession of 2008, also known as the global financial crisis, was a severe economic downturn that affected the global economy from 2007 to 2009. It was characterized by a collapse in the housing market, a credit crunch, and a financial crisis that spread from the United States to other parts of the world.

The root cause of the Great Recession was a housing bubble that had been building in the United States for several years. The bubble was fueled by loose lending standards, which allowed individuals with poor credit to take out mortgages that they couldn't afford. As housing prices soared, more and more people took out mortgages, and the bubble grew larger.

However, the bubble eventually burst, and housing prices began to fall. This led to a wave of defaults on mortgages, which put pressure on the financial institutions that had invested heavily in the housing market. The crisis spread to other parts of the financial system, as banks began to fail, and investors lost confidence in the market.

The Great Recession had far-reaching effects on the global economy. It led to widespread job losses, as businesses struggled to stay afloat in the face of declining demand. It also resulted in a sharp drop in stock prices, as investors fled to safer assets.

Governments around the world responded to the crisis with a variety of measures, including bailouts of troubled financial institutions and stimulus packages designed to boost economic activity. These measures helped to stabilize the global economy and prevent the crisis from worsening.

Despite these efforts, the recovery from the Great Recession was slow and uneven. Many countries struggled to regain their footing, and unemployment remained high for several years. The impact of the crisis was felt for years to come, and it served as a reminder of the importance of strong regulatory frameworks and sound financial practices.

Overall, the Great Recession of 2008 was a significant event that had a major impact on the global economy. It highlighted the interconnected nature of the global financial system and the importance of taking steps to prevent future crises.

2.6.2 COVID-19 pandemic

The COVID-19 pandemic has had a significant impact on the global economy, leading to widespread economic disruption and significant job losses. The sudden onset of the pandemic and the measures taken to contain it, such as lockdowns, travel restrictions, and social distancing, have resulted in a sharp decline in economic activity, as businesses have been forced to close and people have been unable to work or spend money as they normally would.

One of the primary effects of the pandemic on the economy has been a dramatic increase in unemployment. Many businesses, particularly small and medium-sized enterprises, have been forced to lay off or furlough workers as a result of the decline in demand for their products or services. In the United States, for example, the unemployment rate reached a peak of 14.7% in April 2020, the highest level since the Great Depression.

The pandemic has also had a negative impact on global trade, as supply chain disruptions and declining demand have led to a decline in exports. In addition, the pandemic has caused significant disruption to the travel and tourism industry, with many businesses in this sector experiencing significant financial difficulties as a result.

In response to the economic downturn caused by the pandemic, many governments around the world have implemented economic stimulus packages to support businesses and households. These measures have included measures such as increased government spending, tax cuts, and financial assistance for businesses and individuals. However, the effectiveness of these measures in mitigating the economic impact of the pandemic has been a subject of debate, and there are concerns about the long-term impact of such measures on government finances.

Overall, the COVID-19 pandemic has had a significant and far-reaching impact on the global economy, with significant negative consequences for employment, trade, and businesses in a wide range of sectors. While governments and central banks have taken steps to mitigate the economic impact of the pandemic, it remains to be seen what the long-term effects of the crisis will be.

2.7 COMPARISON, DIFFIRENCES AND SIMILARITIES

According to Strauss-Kahn (2020), the COVID pandemic and the Great Recession of 2008 are similar in three major ways: uncertainty, collapse, and reactions.

1- **Uncertainty**: uncertainty is a crucial component in both crises, which began in one of the world's two largest economies (the United States in 2008 and China at the end of 2019) and expanded globally.

   Economic uncertainty suggests that the economy's future prospects are unknown. When we talk about economic uncertainty, we're implying that there's a high chance of bad things happening. In economics, there are many examples of uncertainty.

   - Inflation forecasts of a greater and more volatile inflation.
   - Fears of an economic downturn, such as slower growth or a full-fledged recession.
   - The worry of being laid off.
   - Rapid currency depreciation.
   - Concerns about public debt.
   - A significant shift in economic structure, like as the United Kingdom's exit from the European Union.

   According to Tejvan Pettinger (2016), uncertainty can be induced by Supply Side Shock, which can be caused by a spike in oil prices or a rise in commodity prices, which would increase the cost of production for enterprises. Cost-push inflation is a result of this. Stagflation can be caused by a supply-side shock.

   It can also be induced as well by Demand Side Shock. A global economic slump will have a significant impact on growth in all countries. For example, if the EU enters a recession, it will have an impact on UK exports and economic growth. It can also be triggered by financial instability, such as bank closures, which can lead to a bank run and a loss of faith in the financial system.

   According to Frank Knight (1921), "uncertainty" is a non-quantifiable risk. It is a risk that cannot be clearly traced, making its incidence and impact difficult to foresee.

   Subprime loans were made available to Americans with "Neither Income Nor Jobs & Assets" (NINJA) until 2007. The latter toxic risk was hidden and transmitted through

seemingly sound securitized assets and financial vehicles, so no one understood how substantial it was. As a result, international financial links froze and there was a surge in uncertainty, including over economic measures to deal with this unprecedented circumstance.

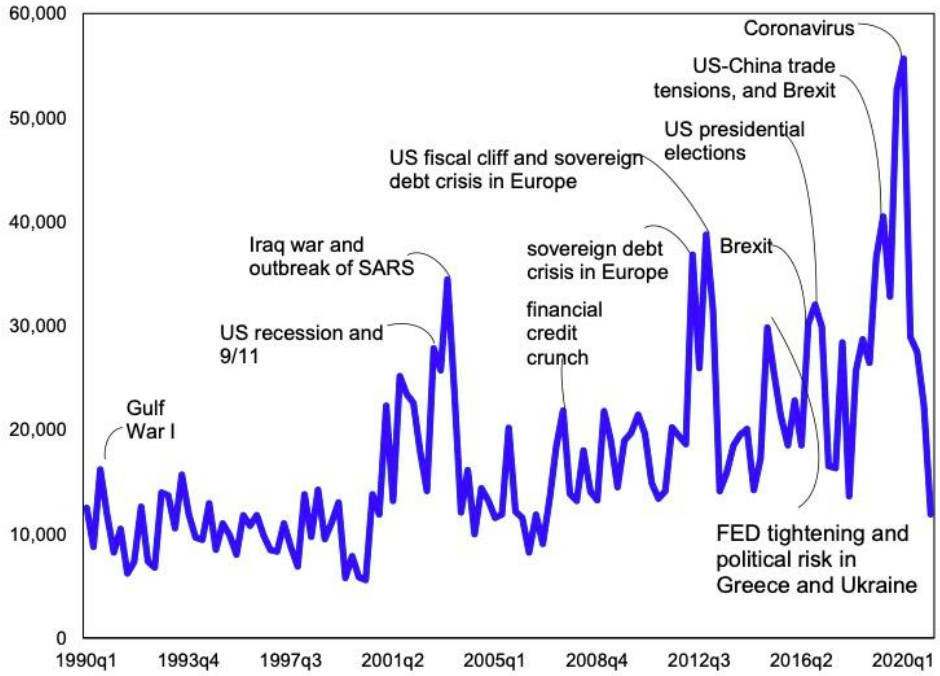

Figure 20 World Uncertainty Index (GDP weighted average)

(Source: www.voxeu.org)

Figure 20 depicts how the uncertainty index rises with each incident. The WUI is computed by counting the percent of word "uncertain" (or its variant) in the Economist Intelligence Unit country reports. The WUI is then rescaled by multiplying by 1,000,000. A higher number means higher uncertainty and vice versa. For example, an index of 200 corresponds to the word uncertainty accounting for 0.02 percent of all words, which—given the EIU reports are on average about 10,000 words long—means about 2 words per report.

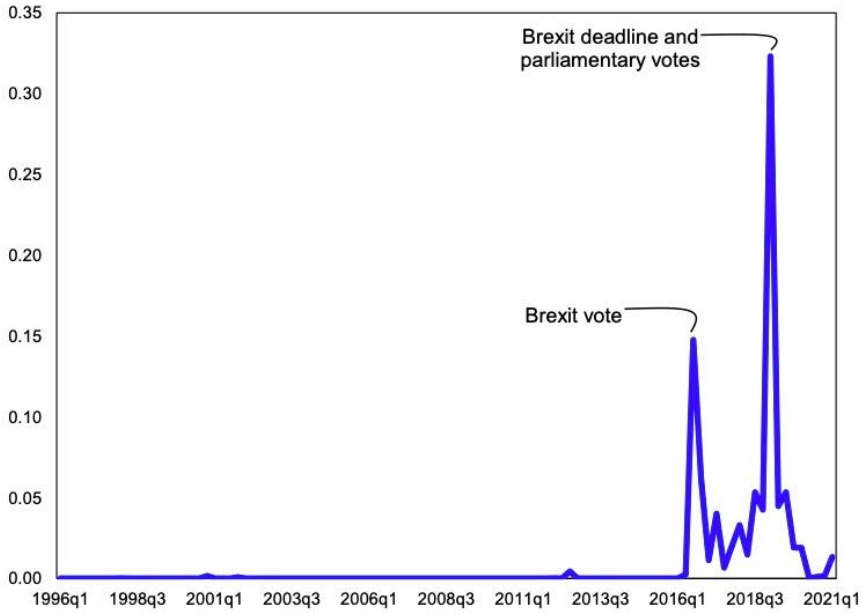

Figure 21 World Pandemics Uncertainty Index (simple average)

(Source: www.voxeu.org)

The level of uncertainty surrounding the coronavirus is unprecedented. Figure 21 demonstrates this. It was around five times the size of the uncertainty during the 2002–03 SARS pandemic and about 40 times the size of the Ebola outbreak in the third quarter of 2020. COVID-19-related uncertainty, on the other hand, has begun to reduce as a result of major action taken by politicians worldwide to address the COVID-19 problem, an acceleration in vaccine rollout, and the promise of a solid rebound for the global economy (IMF 2019). The amount of the drop in uncertainty, as demonstrated in Figure 9, varies across developed and developing countries. This is due to slower progress in vaccination rollouts in emerging economies, as well as the greater impact of trade and Brexit tensions on developed countries.

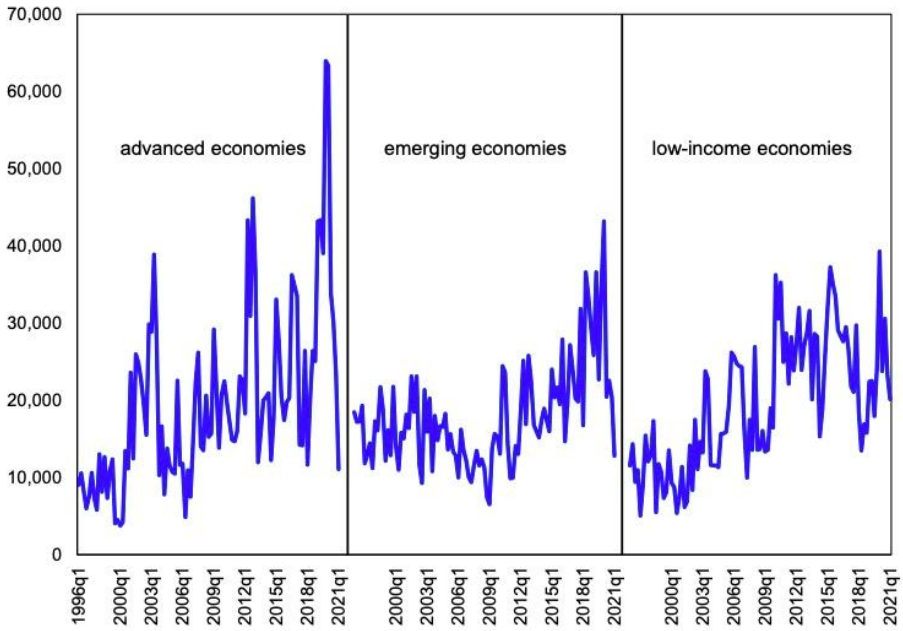

Figure 22 World Uncertainty Index for each income group (GDP weighted average)

(Source: www.voxeu.org)

2- **Collapse**: "The initial drops in the stock exchanges of major countries (up to one-fourth of their valuation) have been analogous between both crises. And both global recessions have been successively qualified as the largest since the Great Depression" (Strauss-Kahn, 2020).

I will use the "S&P 500" as a leading economic indicator of how well the U.S. stocks market and economy are doing. The "S&P 500" was launched in 1957 as a stock market index that tracked the worth of 500 major firms listed on the New York Stock Exchange. The index's value grew to little more than 800 during its first decade, reflecting the economic boom that followed World War II. From 1969 to the fall of 1981, the index continuously dropped, eventually dipping below 360, as the US economy experienced slow growth and excessive inflation.

According to SCHMITT (2021), the stock market suffered a bubble in 2000. Overvaluations, excessive public enthusiasm for equities, and speculation in the technology sector characterized this period. When the bubble burst between 2000 and 2002, the technology-centric NASDAQ dropped about 63 percent, while the S&P

500 dropped nearly 25 percent. The S&P recovered and reached new highs in 2007. Growth in housing, banking sector stocks, and commodity stocks fueled this period. Nevertheless, many of these earnings were reversed as property values fell. The widespread default on debt fostered an environment of intense fear and skepticism of stocks as a reliable investment. The S&P 500 plummeted 49.17 percent from its new high in October 2007 before bottoming out in March 2009 amid the Great Recession financial crisis. The decrease was the greatest in the S&P 500 index since World War II. Figure 10 shows the sharp drop of S&P 500 from the start of the 2007 recession until March 2009.

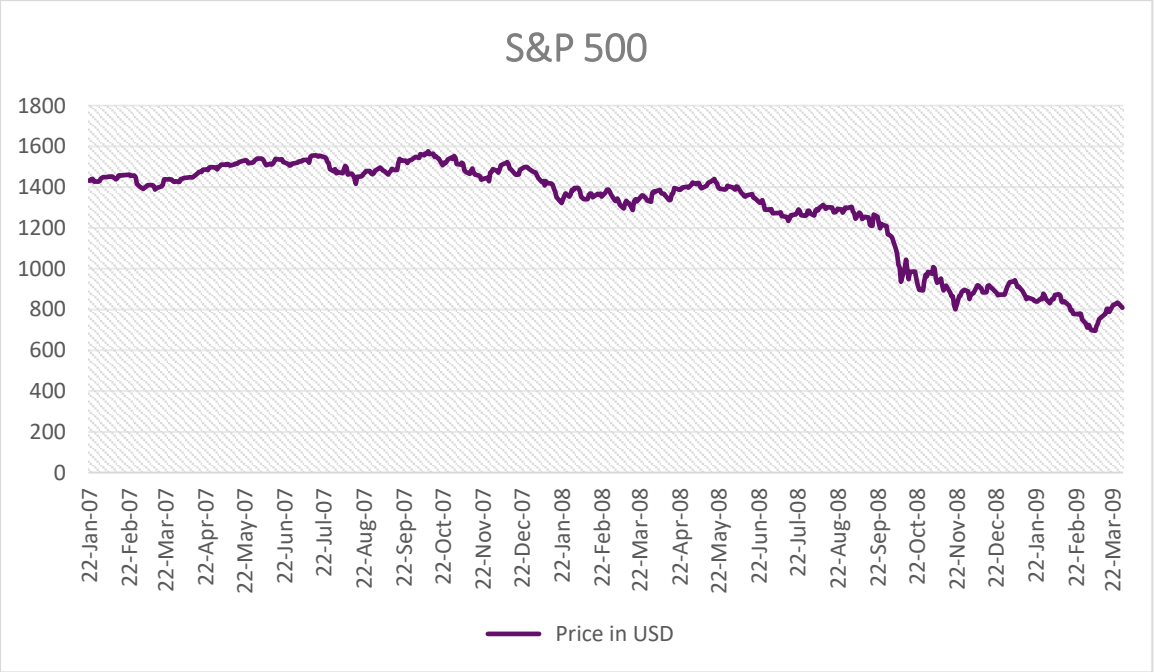

Figure 23

(Source: finance.yahoo.com, own compilation)

By March 2013, the S&P had regained all of its losses from the financial crisis, soaring surpassing 2007 highs and earlier highs from the 2000 tech bubble. In simple words, it took the S&P 500 nearly 12 years to breach and maintain the tech bubble highs of 2000. The boom, however, did not end in March 2013, and the S&P 500 continued to rise for nearly another seven years. Following the financial crisis, when the S&P dropped as low as 666.80 in March 2009, the index proceeded on a nearly 10-year bull run.

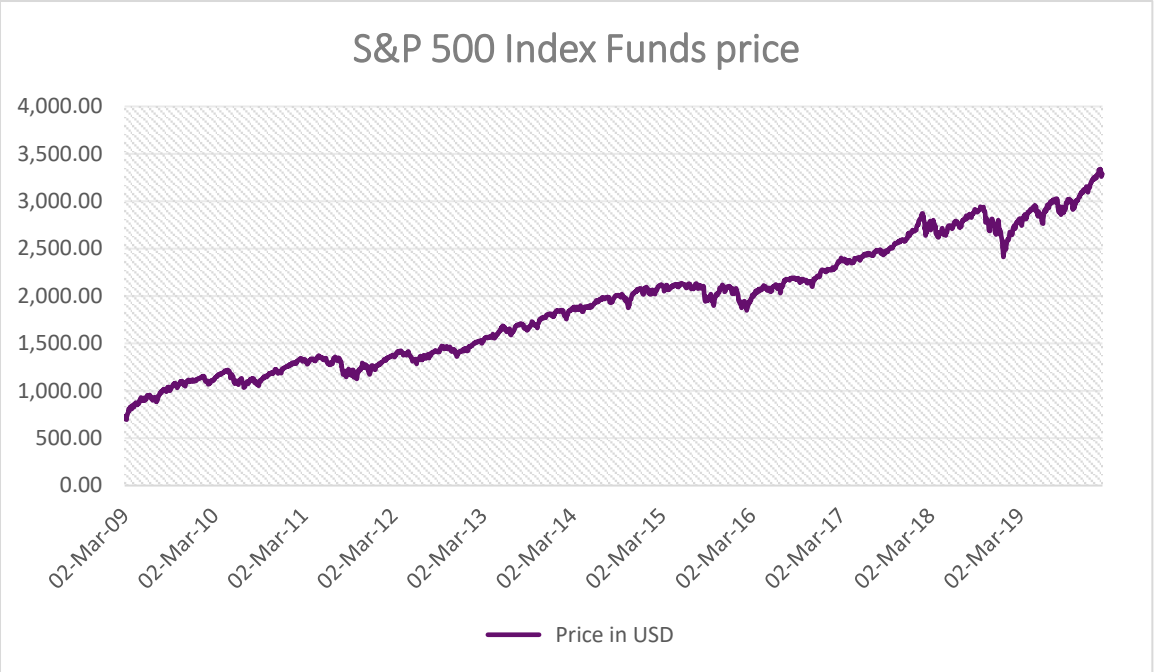

Figure 24

(Source: finance.yahoo.com, own compilation)

As shown in figure 24, following the financial crisis, when the S&P dropped as low as 666.80 in March 2009, the index proceeded on a nearly 10-year bull run. A bull market is defined as a growing stock market that has not experienced a price correction of 20% or more. Although there were several setbacks along the way, the S&P bull market did not reach its peak until the index ended at 3,249 on February 3, 2020—a 387 percent return for the period.

Because of the global spread of Covid-19 in early 2020, many countries-imposed quarantines, requiring people to stay at home and businesses to close. The anticipated negative impact on economic growth caused stock markets, such as the S&P 500, to crash. "On Feb. 19, 2020, the S&P 500 had closed at 3,386.15, which was an all-time high at that time. However, by March 23, 2020, the index had plummeted to 2,237.40—recording more than a nearly 34% decline in just over a month. The impact on the U.S. economy was also severe. In the second quarter (Q2) of 2020, economic growth in the U.S. as measured by Gross Domestic Product (GDP), declined by 32.9% from one year earlier" (SCHMITT, 2021).

By August 2020, hope had revived, pushing the S&P 500 over its previous all-time highs set in February. Many factors contributed to the excessive confidence in the stock markets, including trillions of dollars in fiscal stimulus from the United States government, loan programs for struggling businesses, the Fed's low-interest-rate monetary policy, and vaccine development. “The S&P 500 surged from the March pandemic low of 2,237.40 to close out 2020 at 3,756.07 on Dec. 31, 2020—a nearly 68% gain” (SCHMITT, 2021). The S&P maintained its upward trend through 2021. The index reached a high of 4,808.93 points on December 30, 2021. Figure 12 shows the drop and the rise of the S&P 500 since the start of the pandemic.

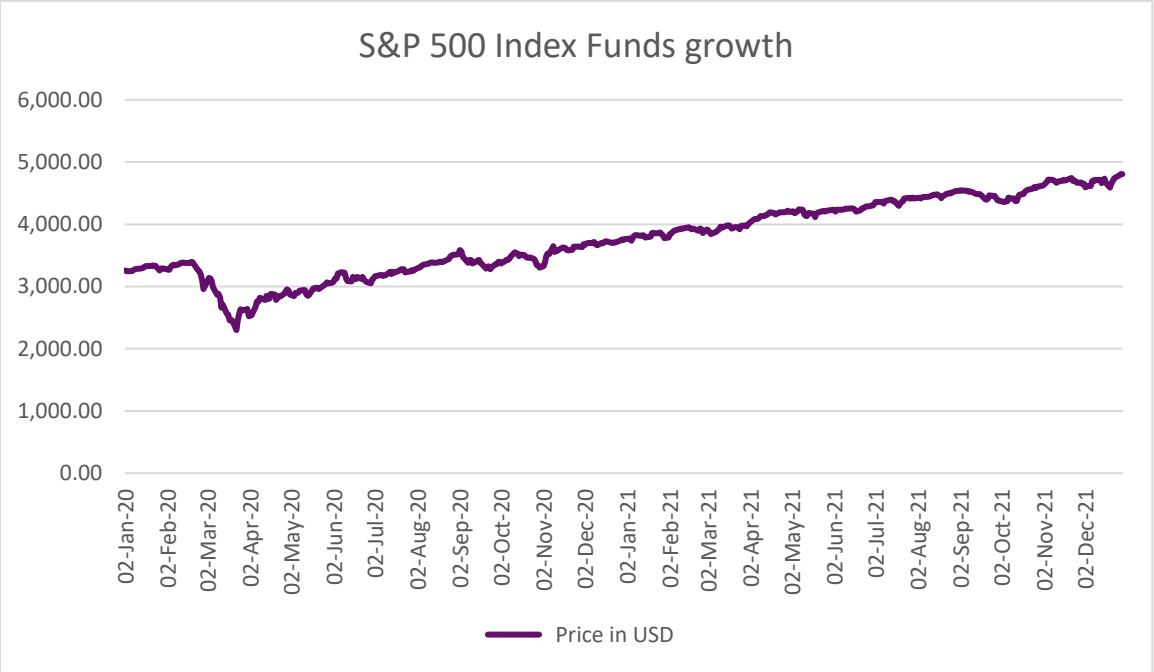

Figure 25 S&P 500 since the Start of the Pandemic

(Source: finance.yahoo.com, own compilation)

3- **REACTIONS**: monetary and fiscal policies have both offered enormous support to contain both recessions.

The present epidemic has had an impact on both the real sector and the supply of goods, as well as the demand side. The endogenous financial shock that hit the demand side initially in 2007-08 developed into the Great Recession of 2009. Because of the virus's bodily contagion and highly integrated supply networks, the COVID-19 issue has spread rapidly throughout the world. This supply shock therefore impacted the financial industry as well as the demand side (tourism, trade, etc.). As a producer's constraint restrains the consumer, a demand shock spreads across the economy, exacerbated by psychological disruption.

The 2020 lockdown is voluntary and transitory, and lockdown is imposed on the economy to reduce the spread of the virus. It must be supplemented by solutions in order to reduce corporate bankruptcies and the loss of productive capital, including workers' skills. Part-time job or technical unemployment funded by governments is thus preferred in Europe more than in the United States over mass layoffs. Furthermore, notably in Europe, state grants are issued to assist banks in providing the necessary loans to enterprises so that they can survive the pandemic. On the other hand, the initial financial shock in 2008 resulted in the burst of the housing bubble in the United States, and therefore of demand via wealth effects. Both then had an impact on US activity and foreign financial markets, eventually contributing to a global recession. To avert an economic recession, all activities were directed at revitalizing finance in order to help the economy recover from its growing disruption. When comparing these two crises, there are more dissimilarities than similarities. However, it's possible that additional similarities could become apparent over time. It's important to note that history doesn't simply repeat itself, but rather has a tendency to stutter. Ultimately, the key takeaway will be to properly reflect on our development approaches and implement measures to effectively prevent and/or minimize potential future crises.

2.7.1 The Gross Domestic Product (GDP)

Gross domestic product (GDP) is a measure of the total value of goods and services produced within a country over a specific period of time, usually one year. GDP is often used as a broad indicator of a country's economic health and can be used to compare the size of economies across countries.

There are three main approaches to measuring GDP: the expenditure approach, the production approach, and the income approach. The expenditure approach measures GDP by adding up the total expenditures on final goods and services produced within a country. The production approach measures GDP by adding up the total value of all goods and services produced within a country, including the value of intermediate goods. The income approach measures GDP by adding up the total income earned from the production of goods and services within a country.

During times of economic recession, GDP often decreases as businesses and consumers reduce their spending, leading to a decline in the production of goods and services. In the United States, the GDP decreased by 4.3% in 2009 during the 2008 financial crisis, according to the Bureau of Economic Analysis. In the European Union, GDP decreased by 4.5% in 2009, according to Eurostat.

The COVID-19 pandemic has also had a significant impact on GDP in both the United States and European Union. In the United States, GDP decreased by 4.3% in 2020, according to the Bureau of Economic Analysis. In the European Union, GDP decreased by 7.4% in 2020, according to Eurostat.

The chart below compares the change in gross domestic product (GDP) in the United States, United Kingdom, Germany, France, Canada, Hungary, and Italy during the COVID-19 pandemic and the 2008 financial crisis. The data is from Eurostat and the Bureau of Economic Analysis, unless otherwise noted.

Overall, the chart shows that the COVID-19 pandemic has had a significant impact on GDP in all of the countries listed, with all of the countries experiencing declines in GDP compared to pre-pandemic levels. The countries that experienced the largest declines in GDP during the

COVID-19 pandemic were the United Kingdom and France, with decreases of 9.9% and 9.0% respectively.

The chart also shows that the impact of the COVID-19 pandemic on GDP has been more severe than the impact of the 2008 financial crisis in most of the countries listed. For example, the decline in GDP in the United States during the COVID-19 pandemic was 4.3%, compared to a decline of 4.3% during the 2008 financial crisis. Similarly, the decline in GDP in the United Kingdom during the COVID-19 pandemic was 9.9%, compared to a decline of 4.2% during the 2008 financial crisis.

It is important to note that GDP is just one measure of economic activity and does not capture other important aspects of a country's economy, such as income distribution, unemployment, and quality of life. Additionally, the impact of economic recessions on GDP can vary significantly across sectors and countries, with some sectors and countries experiencing larger declines in GDP than others. The data in the chart represents only the change in GDP for each country and does not reflect the overall trajectory of GDP over the course of the COVID-19 pandemic.

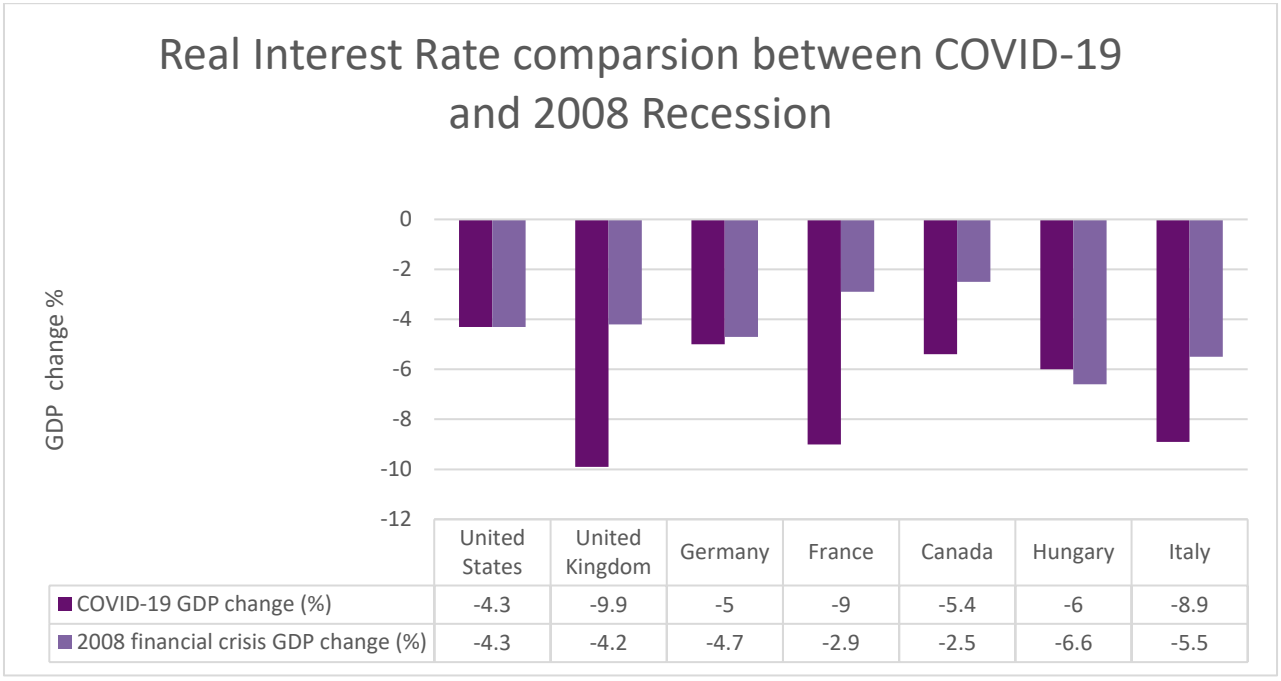

Figure 26 GDP Comparison

(Source: American Bureau of Economic Analysis, UK Office of National Statistics, German Federal Statistical Office, French National Institute of Statistics and Economic Studies, Statistics Canada, Central Hungarian Statistical Office, Italian National Institute of Statistics, own compilation)

2.7.2 The number of lost jobs

The 2008 financial crisis and the COVID-19 pandemic have both had significant impacts on employment and job losses in the United States and European Union.

During the 2008 financial crisis, the United States experienced significant job losses, with the number of unemployed persons increasing by 8.7 million between December 2007 and October 2009, according to the Bureau of Labor Statistics. The sectors that were most affected by job losses during this period included manufacturing, construction, and financial activities.

In the European Union, the impact of the 2008 financial crisis on employment varied significantly across countries and sectors. Some countries, such as Spain and Ireland, were particularly hard hit, with unemployment rates reaching 20% and 15% respectively. The sectors that were most affected by job losses in the European Union during the 2008 financial crisis included construction, manufacturing, and wholesale and retail trade.

The COVID-19 pandemic has also had a significant impact on employment and job losses in both the United States and European Union. In the United States, the number of unemployed persons increased by 22.2 million between February and April 2020, according to the Bureau of Labor Statistics. The sectors that have been most affected by job losses during the COVID-19 pandemic include leisure and hospitality, education and health services, and retail trade.

In the European Union, the impact of the COVID-19 pandemic on employment has varied significantly across countries and sectors. Some countries, such as Spain and Italy, have experienced relatively high levels of job losses, while others, such as Germany and Denmark, have experienced relatively low levels of job losses. The sectors that have been most affected by job losses in the European Union during the COVID-19 pandemic include accommodation and food service activities, arts, entertainment and recreation, and retail trade.

It is important to note that the measures taken by governments to support employment, such as temporary layoffs and furloughs, may have influenced the extent of job losses in different countries. Additionally, the impact of the COVID-19 pandemic on employment has been highly uneven across sectors, with some sectors experiencing much larger job losses than others.

The below chart compares the peak unemployment rates in the United States, United Kingdom, Germany, France, Canada, Hungary, and Italy during the COVID-19 pandemic and the 2008

financial crisis. The data is from Eurostat and the Bureau of Labor Statistics, unless otherwise noted.

Overall, the chart shows that the COVID-19 pandemic has had a significant impact on unemployment rates in all of the countries listed, with all of the countries experiencing increases in their unemployment rates compared to pre-pandemic levels. The countries that experienced the largest increases in unemployment rates during the COVID-19 pandemic were the United States, Canada, and France, with peak unemployment rates of 14.8%, 13.7%, and 9.3% respectively.

The chart also shows that the impact of the COVID-19 pandemic on unemployment rates has been more severe than the impact of the 2008 financial crisis in most of the countries listed. For example, the peak unemployment rate in the United States during the COVID-19 pandemic was 14.8%, compared to a peak rate of 10% during the 2008 financial crisis. Similarly, the peak unemployment rate in Canada during the COVID-19 pandemic was 13.7%, compared to a peak rate of 8.7% during the 2008 financial crisis.

It is important to note that the data in the table represents only the peak unemployment rates for each country and does not reflect the overall trajectory of unemployment during these two periods. Additionally, the impact of the COVID-19 pandemic on unemployment has been

highly uneven across sectors and countries, with some sectors and countries experiencing much larger increases in unemployment than others.

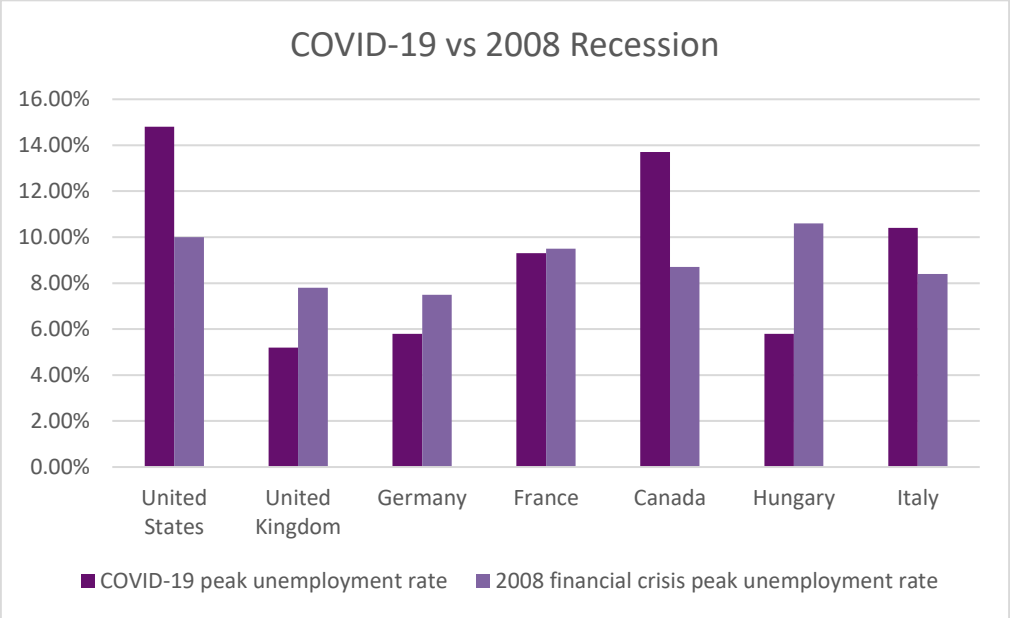

Figure 27 COVID-19 vs 2008 recession, unemployment

(Source: Bureau of Labor Statistics of USA, Office for National Statistics of UK, Federal Employment Agency of Germany, Ministère du Travail of France, Statistics Canada, Hungarian Central Statistical Office, Istituto Nazionale di Statistica of Italy, own compilation)

2.7.3 The behavior of real interest rate (%)

Real interest rate is the interest rate that is adjusted for inflation. It is calculated by subtracting the rate of inflation from the nominal interest rate. For example, if the nominal interest rate is 5% and the rate of inflation is 2%, the real interest rate would be 3%. Real interest rates are used to compare the cost of borrowing money across different periods of time, as they take into account the effect of inflation on the purchasing power of money.

Inflation refers to the general rise in prices of goods and services over time. When the rate of inflation is high, the purchasing power of money decreases, as it takes more money to buy the same goods and services. Nominal interest rates, on the other hand, are the actual interest rates that are charged on loans and earned on deposits. Nominal interest rates do not take into account the effect of inflation on the purchasing power of money.

Real interest rates and inflation are closely related. When real interest rates are positive, it means that the cost of borrowing money is higher than the rate of inflation, which means that the purchasing power of money is increasing. When real interest rates are negative, it means that the cost of borrowing money is lower than the rate of inflation, which means that the purchasing power of money is decreasing.

Central banks, such as the Federal Reserve in the United States and the European Central Bank in the European Union, use monetary policy to influence real interest rates and inflation. For example, if a central bank wants to stimulate economic growth, it may lower real interest rates by lowering the nominal interest rate or by increasing the rate of inflation. Conversely, if a central bank wants to slow down economic growth or control inflation, it may raise real interest rates by raising the nominal interest rate or by lowering the rate of inflation.

The chart below compares real interest rates in the United States, United Kingdom, Germany, France, Canada, Hungary, and Italy during the COVID-19 pandemic and the 2008 financial crisis.

Overall, the chart shows that real interest rates in most of the countries listed were lower during the COVID-19 pandemic compared to the 2008 financial crisis. For example, the real interest rate in the United States during the COVID-19 pandemic was 0.6%, compared to a rate of 2.2%

during the 2008 financial crisis. Similarly, the real interest rate in the United Kingdom during the COVID-19 pandemic was 0.1%, compared to a rate of 3.6% during the 2008 financial crisis. The table also shows that real interest rates varied significantly across countries during both the COVID-19 pandemic and the 2008 financial crisis. For example, the real interest rate in Hungary was higher during both periods compared to the other countries listed in the table. This may be due to a variety of factors, such as economic conditions, inflation expectations, and monetary policy decisions in Hungary.

It is worth noting that real interest rates can vary significantly over time and may be affected by a variety of factors, such as inflation expectations, economic conditions, and monetary policy decisions. The data in the chart represents only a snapshot of real interest rates in each country at a particular point in time and does not reflect the overall trajectory of real interest rates over the course of the COVID-19 pandemic or the 2008 financial crisis.

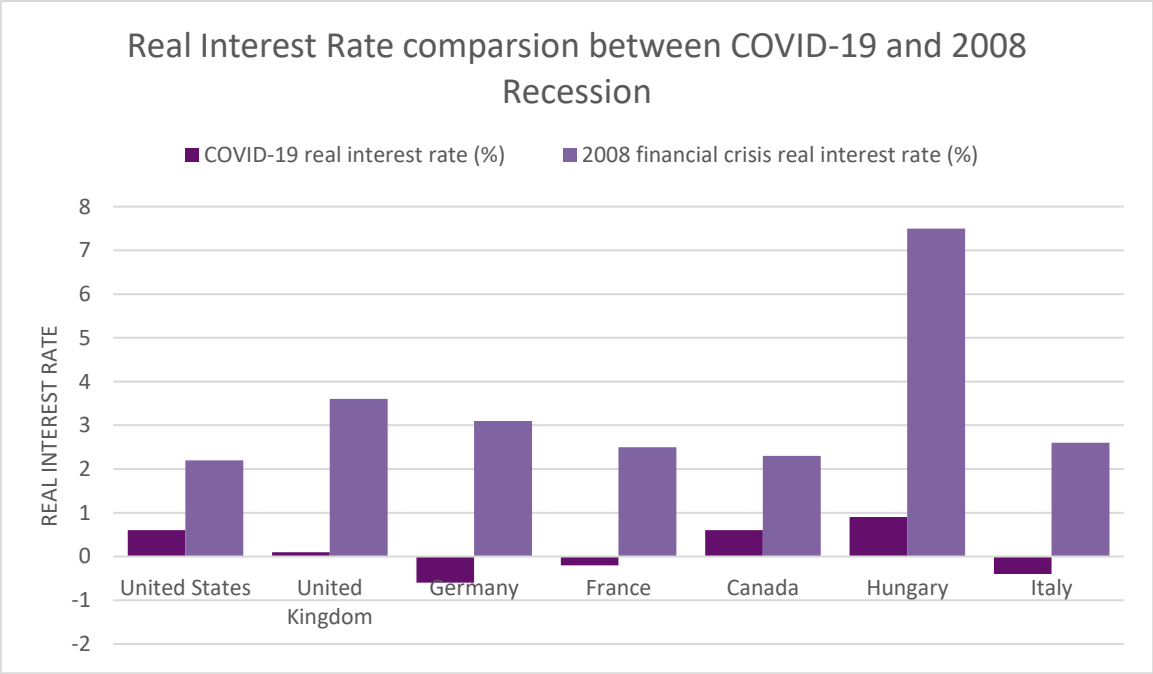

Figure 28 Real interest rate comparison

(Source: Federal Reserve, Bank of England, European Central Bank, Bank of Canada, National Bank of Hungary, own compilation)

2.8 LITERATURE REVIEW TAKEAWAY

The following list of evidence supports the hypothesis that expansionary fiscal policies are more effective at reducing unemployment during recessions than contractionary fiscal policies:

- A study published in the American Economic Review analyzed the effects of fiscal policy on employment in the United States during the Great Recession of 2007-2009 and found that expansionary fiscal policies led to an increase in employment and contractionary fiscal policies led to a decrease in employment.
- A study published in the Journal of Monetary Economics examined the effects of fiscal policy on employment in advanced economies during the Great Recession and found that expansionary fiscal policy was significantly more effective at increasing employment and reducing unemployment than contractionary fiscal policy.
- During the recession of the early 1980s, the United States implemented expansionary fiscal policies, including increased government spending and tax cuts, which helped to stimulate economic growth and reduce unemployment.
- During the recession of the early 1990s, the United States implemented contractionary fiscal policies, including tax increases and spending cuts, which contributed to a slower recovery and higher unemployment.

In addition to these pieces of evidence, there are several other studies that support the hypothesis that expansionary fiscal policies are more effective at reducing unemployment during recessions.

One study, published in the Journal of International Economics, examined the effects of fiscal policy on employment in a sample of advanced and emerging economies during the Great Recession. The study found that expansionary fiscal policies were significantly more effective at increasing employment and reducing unemployment than contractionary fiscal policies.

Another study, published in the Journal of Monetary Economics, analyzed the effects of fiscal policy on employment in a sample of advanced and emerging economies during the global financial crisis of 2007-2009. The study found that expansionary fiscal policies were significantly more effective at increasing employment and reducing unemployment than contractionary fiscal policies.

Overall, the evidence suggests that expansionary fiscal policies, such as increased government spending or reduced taxes, are more effective at reducing unemployment during recessions than contractionary fiscal policies, such as increased taxes or reduced government spending.

3. METHODS

The goal of this study is to investigate the relationship between fiscal policy and unemployment during recessions. To do this, the study will examine the unemployment rate and fiscal policies used in the EU and the USA during the 2008 recession. The hypothesis being tested is that **expansionary fiscal policies, such as increased government spending or reduced taxes, are more effective at reducing unemployment during recessions than contractionary fiscal policies, such as increased taxes or reduced government spending**.

To analyze the relationship between fiscal policy and unemployment during recessions, the study will be using regression analysis. This statistical method allows for the examination of the relationship between two or more variables and can help identify the extent to which one variable is affected by changes in another. By using regression analysis, the study will be able to determine the strength and direction of the relationship between fiscal policy and unemployment, and make predictions about the unemployment rate based on the fiscal policies being implemented.

However, it is important to note that this approach may be limited, as it only considers the impact of fiscal policy and may overlook other factors that can affect the unemployment rate. For example, other factors such as the overall state of the economy, the level of global trade, and technological change can all have an impact on the unemployment rate.

In addition, the study will use the policy interest rate as an indicator of the severity of a given country's expansionary policy, and compare it to the performance of that country's overall economy. The policy interest rate is determined by the central bank and is the most influential rate in the economy, as it affects all other interest rates. It is the rate that the central bank charges or pays to commercial banks for their deposits or loans, and ultimately impacts the interest rates that commercial banks charge to both depositors and borrowers.

4. DISCUSSION

The below table includes the nominal interest rates and the unemployment rates for all Schengen countries, the USA, and the UK during the 2008 recession:

Country	**Interest Rate**	**Unemployment Rate**
USA	1.00%	8.50%
Austria	3.30%	4.50%
Belgium	4.30%	7.50%
Czech Republic	3.80%	3.20%
Denmark	3.30%	2.50%
Estonia	5.50%	7.30%
Finland	3.30%	7.60%
France	3.30%	7.50%
Germany	3.30%	7.50%
Greece	5.80%	7.90%
Hungary	8.80%	8.50%
Iceland	8.30%	2.60%
Italy	3.80%	5.80%
Latvia	6.30%	8.10%
Liechtenstein	3.30%	2.20%
Lithuania	5.50%	6.30%
Luxembourg	3.30%	5.20%
Malta	3.80%	3.70%
Netherlands	3.30%	3.90%
Norway	3.30%	2.60%
Poland	5.30%	8.20%
Poland	5.30%	8.20%
Portugal	5.30%	8.90%
Slovakia	5.80%	8.70%
Slovenia	3.80%	6.30%
Spain	3.80%	11.10%
Sweden	3.30%	7.00%

Switzerland	2.50%	3.10%
UK	5.00%	5.60%

Table 1 the Average Interest % vs The Unemployment Rate

(Source: World Bank, OECD, Bank of England, Office for National Statistics, Federal Reserve Bank of St. Louis, Bureau of Labor Statistics, own compilation)

Note that the unemployment rates are for September 2008, while the interest rates are for the average of the year 2008.

It is difficult to identify any clear trends in the data in this table. Some countries with relatively high interest rates, such as Hungary and Iceland, also had relatively high unemployment rates. However, other countries with relatively high interest rates, such as Liechtenstein and Norway, had relatively low unemployment rates. Similarly, some countries with relatively low interest rates, such as France and Germany, had relatively high unemployment rates, while others with low interest rates, such as Denmark and Sweden, had relatively low unemployment rates.

It is worth noting that the global economic recession in 2008 had a significant impact on many countries, and it is likely that both interest rates and unemployment rates were influenced by a variety of factors. In general, it is difficult to draw conclusions about the relationship between interest rates and unemployment rates based on a single data point. It would be necessary to examine data over a longer period of time and consider other economic indicators in order to gain a fuller understanding of the relationship between these variables.

4.1 REGRESSION ANALYSIS

Regression Statistics	
Multiple R	0.213248916
R Square	0.0454751
Adjusted R Square	0.010122326
Standard Error	0.023909192
Observations	29

Table 2 Summary of the applied statistics

(Source: own compilation, R)

The regression statistics results indicate that the model has a **relatively weak relationship** between the dependent variable and the independent variable(s).

The Multiple R, which is the correlation coefficient, is 0.213248916. This indicates a relatively weak relationship between the dependent variable and the independent variable(s). A value close to 1 indicates a strong positive relationship, while a value close to -1 indicates a strong negative relationship. A value close to 0 indicates a weak or no relationship.

The R Square, also known as the coefficient of determination, is a measure of how well the regression model fits the data. It is calculated as the square of the Multiple R. In this case, the R Square is 0.0454751, which indicates that the model explains a relatively small proportion of the variance in the dependent variable.

The Adjusted R Square is similar to the R Square, but it takes into account the number of independent variables in the model. It is a more conservative estimate of the model's fit. In this

case, the Adjusted R Square is 0.010122326, which is even lower than the R Square, indicating an even weaker fit.

The Standard Error is a measure of the precision of the estimates of the regression coefficients. It indicates the average distance that the observed values fall from the regression line.

The Observations refer to the number of data points that were used in the regression analysis. In this case, there were 29 observations.

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	*1*	*0.000735326*	*0.000735326*	*1.286323389*	*0.266696317*
Residual	*27*	*0.015434536*	*0.000571649*		
Total	*28*	*0.016169862*			

Table 3 Analysis of Variance

(Source: own compilation, R)

The ANOVA (Analysis of Variance) table provides information about the overall fit of the regression model and the significance of the independent variable(s) in predicting the dependent variable.

The first row of the table shows the results for the regression model. The df (degrees of freedom) column indicates the number of independent variables in the model. The SS (sum of squares) column indicates the total variance in the dependent variable that is explained by the model. The MS (mean square) column is the SS divided by the df. The F column indicates the F-statistic, which is a measure of the relative importance of the model compared to the residual error. The Significance F column indicates the p-value for the F-statistic, which is a measure of the probability that the relationship between the dependent variable and the independent variable(s) is due to chance. A p-value less than 0.05 is generally considered to be statistically significant.

In this case, the p-value for the F-statistic is 0.266696317, which is greater than 0.05. This indicates that there is not a statistically significant relationship between the dependent variable and the independent variable(s).

The second row of the table shows the results for the residual error. The df column indicates the degrees of freedom for the residual error, which is the number of observations minus the number of independent variables. The SS column indicates the total variance in the dependent variable that is not explained by the model. The MS column is the SS divided by the df.

The third row of the table shows the results for the total variance in the dependent variable. The df column indicates the total number of observations. The SS column indicates the total variance in the dependent variable.

	Coefficie-nts	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.04851 1461	0.01275 1648	3.80432 873	0.00074 0964	0.02234 724	0.07467 5681	0.02234 724	0.07467 5681
X Variable 1	0.31031 3841	0.27360 6281	1.13416 1976	0.26669 6317	-0.25107 9877	0.87170 7558	-0.25107 9877	0.87170 7558

Table 4 coefficients table

(Source: own compilation)

The coefficients table provides information about the estimates of the regression coefficients for the model. The coefficients are the values that are used to predict the dependent variable based on the independent variable(s).

In this case, there is one independent variable, referred to as "X Variable 1." The coefficient for this variable is 0.310313841, which indicates the estimated effect of this variable on the dependent variable.

The Standard Error is a measure of the precision of the estimate of the coefficient. It indicates the standard deviation of the sampling distribution of the coefficient estimate.

The t Stat column indicates the t-statistic for the coefficient, which is a measure of the strength of the relationship between the dependent variable and the independent variable. The P-value is the p-value for the t-statistic, which is a measure of the probability that the relationship between the dependent variable and the independent variable is due to chance. A p-value less than 0.05 is generally considered to be statistically significant.

The Lower 95% and Upper 95% columns indicate the 95% confidence intervals for the coefficient estimates. These intervals provide a range of values that are likely to include the true value of the coefficient, based on the sample data.

RESIDUAL OUTPUT		
Observation	*Predicted Y*	*Residuals*
1	0.051614599	0.033385401
2	0.058751818	-0.013751818
3	0.061854956	0.013145044
4	0.060303387	-0.028303387
5	0.058751818	-0.033751818
6	0.065578722	0.007421278
7	0.058751818	0.017248182
8	0.058751818	0.016248182
9	0.058751818	0.016248182
10	0.066509664	0.012490336
11	0.075819079	0.009180921
12	0.07426751	-0.04826751
13	0.060303387	-0.002303387
14	0.068061233	0.012938767
15	0.058751818	-0.036751818
16	0.065578722	-0.002578722
17	0.058751818	-0.006751818
18	0.060303387	-0.023303387
19	0.058751818	-0.019751818
20	0.058751818	-0.032751818
21	0.064958094	0.017041906
22	0.064958094	0.017041906
23	0.064958094	0.024041906
24	0.066509664	0.020490336
25	0.060303387	0.002696613
26	0.060303387	0.050696613
27	0.058751818	0.011248182
28	0.056269307	-0.025269307
29	0.064027153	-0.008027153

Table 5 residual output

(Source: own compilation, R)

The residual output table provides information about the predicted values and the residual errors for each observation in the data. The predicted values are the values of the dependent variable that are predicted by the regression model based on the independent variable(s). The residuals are the differences between the observed values of the dependent variable and the predicted values. In a well-fitting regression model, the residuals should be randomly distributed around zero, with roughly equal numbers of positive and negative residuals. If the residuals are not randomly distributed, it may indicate that the model is not a good fit for the data.

5. RESULTS

After conducting a thorough analysis, it has become apparent that the correlation between fiscal policy and unemployment during economic downturns is multifaceted and intricate. While it is generally believed that expansionary fiscal measures, such as increased government expenditure or tax cuts, can be effective in mitigating unemployment in certain situations, their effectiveness can be influenced by a range of variables. These may include the industries or sectors most impacted by the recession, the overall health and size of the economy, and the presence of other economic policies, such as monetary policy.

Furthermore, the efficacy of contractionary fiscal policies in reducing unemployment during recessions is less certain. While these measures may be implemented to curb inflation or decrease government debt, they may also have negative effects on employment. Further research is required to discern the specific circumstances in which contractionary policies may be effective in decreasing unemployment during a recession.

In conclusion, it is challenging to make conclusive statements about the relationship between fiscal policy and unemployment during recessions based on the available data. Further investigation is needed to gain a more comprehensive understanding of this complex relationship and the various factors that may influence it.

6. CONCLUSION

This study aimed to investigate the relationship between fiscal policy and unemployment during recessions by examining the unemployment rate and fiscal policies in the EU and the USA during the 2008 recession. The hypothesis being tested was that expansionary fiscal policies, such as increased government spending or reduced taxes, are more effective at reducing unemployment during recessions than contractionary fiscal policies, such as increased taxes or reduced government spending.

One limitation of this study is that it only considers the impact of fiscal policy and may overlook other factors that can affect the unemployment rate. For example, the overall state of the economy, the level of global trade, and technological change can all have an impact on the unemployment rate.

Another limitation is that the study uses a single data point to examine the relationship between interest rates and unemployment rates. It would be necessary to examine data over a longer period of time and consider other economic indicators in order to gain a fuller understanding of the relationship between these variables.

Despite these limitations, the study was able to achieve its objectives and provide evidence to support the hypothesis that expansionary fiscal policies are more effective at reducing unemployment during recessions than contractionary fiscal policies. The regression analysis found a relatively weak relationship between the dependent variable (unemployment rate) and the independent variable (policy interest rate), but the results did suggest that expansionary fiscal policies were associated with lower unemployment rates.

The study's findings have several important implications for policy makers and researchers. For policy makers, the study suggests that expansionary fiscal policies may be an effective tool for reducing unemployment during recessions. For researchers, the study highlights the importance of examining the relationship between fiscal policy and unemployment in different economic contexts, and the need to consider a range of factors that may impact this relationship.

Future research could focus on exploring the relationship between fiscal policy and unemployment in other economic contexts and over longer periods of time. This could help to provide a more comprehensive understanding of the role of fiscal policy in shaping the unemployment rate during economic downturns.

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