LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER

MONETARY AND FINANCIAL ECONOMICS

MASTER´S FINAL WORK

DISSERTATION

EXPANSIONARY POLICIES AFTER A RECESSION - A PANEL DATA ANALYSIS OF THE LAST DECADE COMPARED TO A HISTORICAL OVERVIEW OF THE 1920S

ANA MARGARIDA RIBEIRO FERNANDES

OCTOBER- 2021

LISBON
SCHOOL OF
ECONOMICS &
MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER

MONETARY AND FINANCIAL ECONOMICS

MASTER´S FINAL WORK

DISSERTATION

EXPANSIONARY POLICIES AFTER A RECESSION - A PANEL DATA ANALYSIS OF THE LAST DECADE COMPARED TO A HISTORICAL OVERVIEW OF THE 1920S

ANA MARGARIDA RIBEIRO FERNANDES

SUPERVISOR:

PROFESSOR DOUTOR FRANCISCO LOUÇÃ

OCTOBER- 2021

To my parents who made it possible to accomplish this achievement and for all the support in this journey.

ABSTRACT, KEYWORDS AND JEL CODES

In the current economic's context recovery after the pandemic recession, the discussion on specific expansionary policies, namely under conditions of population decline, reemerged in economics. Considering the evidence of a prolonged secular stagnation, this debate may be highlighted by an understanding of historical events and the impact of previous strategies, specifically those adopted after the 1929 crisis. This dissertation presents a brief historical overview of the 1920s, considering the expansionary policies applied at that time, and compares these choices to those prevailing through the last decade. For that, it examines the application of the monetary and fiscal policies in 16 countries for the period between 2009 and 2019 and measures the interactions among these variables, estimating a Fixed Effects (FE) model. The results confirm and measure the impact of public action through fiscal stimuli in order to improve economic activity, including through investment and other spending, or of tax reductions affecting the individuals' disposable income. Through the panel data estimation, we measure the impact of these policies, including on employment and wages.

KEYWORDS: Keynes, Keynesian theory, Central Bank, Secular Stagnation, Crisis, Monetary Policy, Fiscal Policy, Expansionary Policies

JEL CODES: E12, E31, E40, E50, E52, E60, E62, H12

ACKNOWLEDGEMENTS

I would like to thank those who have supported and helped me through this adventure of completing a master's degree while working simultaneously in a full-time job.

First, I want to express my gratitude to my supervisor, Professor Francisco Louçã, for all the patience and support throughout this process.

Additionally, I would like to thank my parents and my brother for their unconditional love and support, and for being my pillars during my academic life.

I also would like to thank to the institution where I work, BNP Paribas Securities Services and to my team for the comprehension and the support they gave me during this process.

Finally, I am grateful to all those who directly or indirectly helped me during the elaboration of this project.

CONTENTS

LIST OF FIGURES AND TABLES

EXPANSIONARY POLICIES AFTER A RECESSION – A PANEL DATA ANALYSIS OF THE LAST DECADE COMPARED TO A HISTORICAL OVERVIEW OF THE 1920s.

By Ana Margarida Ribeiro Fernandes

1. INTRODUCTION

During the 1920s, following a time of belief in global prosperity that was shortly lived after the end of the First World War, the world witnessed a so-called Black Thursday in October 24th 1929, the New York Stock Exchange Crash, that ended up having terrible consequences for the lives of millions of people, giving rise to the Great Depression that lasted for the 1930s, more specifically until the beginning of the Second World War. This event led to an economic as well as financial crisis.

At that time, companies had credit hardships, difficulty in financing, and some even were bankrupt, while at the same time families began to consume less because they had lost income and wealth. The Wall Street Crash was a major financial crisis, which was transmitted to the whole economy.

In contradistinction, in the last decade before the global financial crisis of 2008, the world was supposed to be prepared for an economic slowdown. This crisis had a significant impact, namely on budget deficits, leading to a sharp upward trend on government debt, especially in some European countries. After a prolonged period of austerity aggravating the recession, the ECB opted for monetary stimulus and, therefore, central banks chose unconventional monetary policy, as they had to opt for other monetary tools such as Quantitative Easing. Nonetheless, aggregate demand had fell so much in this crisis that even cuts to zero in Central Banks nominal interest rates were unable to bring economies back to full employment. This is why the European Central Bank was forced to use a persistent tool kit of unconventional monetary policies.

Consistently over the time, each crisis becomes an experienced challenge. How is a crisis managed? It is not possible to have a complete control of its dynamics, but no crisis is invincible. However, it is at these moments that much of what has been learnt and practiced in the past is revealed. It is easy to see that companies that have not prepared themselves in business-as-usual times have more difficulties in managing adversity. The same applies, moreover, to public institutions. In crisis management, there is always a

potential lack of all the information, but decision-making must be quick. It is necessary to have the skill, knowledge, intuition, and wisdom to lead in extreme scenarios that we lived in the recent past.

The aim of this dissertation is to discuss the greatest economic and financial crisis of the 20th century, in order to understand the similarities and differences with the 2008 crisis and the correlation between the policies applied in each decade and, furthermore, their repercussions for the economy. And for that, it is relevant to understand the economic context of each decade, studying the 1929 crisis and evaluating the relationship between the expansionary policies adopted in relation to the 1929 economic and financial crisis and those used to deal with the crisis of the past decade, which we will proceed to do in very short summary. Despite the different causes that led to these crises, one derived from an overproduction crisis and the other from a real estate bubble, both occurred in the United States, and both affected the global economy. In this case, it is also important to mention the importance of the speed of propagation of the economic impacts, since these crises are approximately 100 years apart and, in the case of the 2008 crash, its propagation was much faster than in the first crisis, due to technological developments, financial interconnections and faster globalization. Therefore, the economic activity is operationalized in a historical chronology, that is, understanding that the decisions of economic agents are taken considering the irreversibility of the past, that is, based on observations of the past and the unpredictability of the future. However, given the fact that social, economic, and political conditions change radically over a period, it is impossible to extrapolate future events only based on today's events, since uncertain phenomena may emerge, namely this which probability cannot be calculated. In the case of this dissertation, such limitation is assumed and, in order to assess the relation between expansionary policies and their effects we use a regression technique, that based on the fixed effects (FE) method.

The remainder of this study is organized as follows: Section 2 briefly analyzes the literature by elaborating a summary description of the 1929 crisis, following the authors who stood out since that time, discussing the expansionary monetary and fiscal policies in the 1920s, and finally, by considering the impact of those lessons in the context of the recent financial crisis; section 3 and 4 explain the data set and the methodology

adopted and the results; and finally, section 5 presents the study's conclusions, limitations and suggestions for future research.

2. LITERATURE REVIEW

2.1. Historical, political, economic environment of the 1929 crisis

The 1929 Crisis, igniting what became to be known as the Great Depression, followed by the First World War (1914-1918), which had a tragic impact on European nations since it was by far the most severe contraction in the business cycles and may well have been the most severe contraction in all of US history. The consequences of the World War were disastrous, with repercussions on economic structures, such as paralyzed industries, burnt fields, roads, and all kinds of destroyed structures, reducing the productive capacity of many countries.

In the early 1920s, the instability on the value of money was undermining the social contract on which 20th century capitalism had been developed in developed economies. The acceptance of workers with a modest reward was essential for capitalists, as entrepreneurs and investors, in order to organize production. On the other hand, inflation and deflation cut the moral link between effort and reward, leading to the unjustified enrichment of some and the unjustified impoverishment of others (Skidelsky, 1992).

The First World War was followed by an inflationary boom. But, after July 1920, prices started to fall, the expectation that they would continue to fall prompted many economic agents to act as if they continued to fall. Thus, traders had unloaded their stocks, owners sold their properties and businesses when the banks applied for mortgages, manufacturers stopped hiring labor, workers resisted employers' attempts to cut their wages, so in some cases real wages increased as profits fell, resulting in bankruptcies, and this process went on. The cumulative effects of all its actions were to push economic activity into a downward and deflationary spiral.

Any chance that the world had to recover political stability and economicgrowth was fatally destroyed by the inability of American and European statesmen to solve the related problems of inter-allied war debts and German reparations. The mastery of these issues constrained the economic recovery in the first five years of the post-war period, as they absorbed the energies of world leaders and produced an atmosphere of continuous crisis that stifled attempts to normalize economic relations. In Western Europe, the effects

were especially disastrous, especially in weak economies, such as Germany. In 1933, the year of Hitler's rise to power, hyperinflation eroded the purchasing power of the Deutsche Mark and unemployment reached more than a third of the workers, creating an evident link between the increasing economic chaos in Germany and the strengthening of the Nazi party (Bel, 2010).

Consequently, the monetary instability damages the virtue of the capitalist system and by monetary disorder, the economist Keynes meant inflation, which is a device that allows a community, for a period, to consume its capital without knowing it, which means that allowing workers, entrepreneurs, and governments to temporarily prosper, consuming, or confiscating the real wealth of savers. In addition, deflation is a derivative phenomenon, caused by the inevitable collapse of the inflationary boom. That is why Keynes, like all monetary reformers in the 1920s, attached supreme importance to price stability, since stable money is necessary for stable capitalism (Friedman & Schwartz, 2008). Later, Keynesians such as Galbraith (2009), challenged this interpretation.

The belief of ensuring price stability became the centre of the discussion on the role of monetary policy, as part of the drive to achieve a favorable economic environment and a high level of employment. In fact, the monetarists used several arguments in favor of price stability as the only purpose of monetary policy. On the one hand, the fact that monetary policies affect the economic variables with greater lags and the attempts to stabilize the fluctuations in output are uncertain, since they may not have the desired effects and could be counterproductive. On the other hand, a change in the amount of currency in circulation (*ceteris paribus*) in the long run represents a change in the unit of account, and therefore, in the general level of prices; however, it keeps unchanged the remaining macroeconomic variables, which are essentially determined by real supply-side factors. Moreover, the price stability promotes a better functioning of the economy, as it removes the costs associated to inflation. All of these arguments defended by monetarism, suggest that ensuring price stability contributes significantly to the achievement of economic objectives, such as better standard of living, high levels of economic activity and better employment prospects. These economists felt that most of the problems following the crash could have been prevented if measures to stabilize the situation in the late 1920s, when the inflation rate reached zero, were put into place (Friedman, 1968).

Although Keynes was extremely critical of deflation, no one else thought it would create a problem of permanent unemployment. Thus, in September 1921, he expected a commercial recovery, including of employment. However, there was no return to employment after prices stopped falling in the last quarter of 1922. So, unemployment in the spring of 1923 was almost as bad as the previous year. It was this persistence of high unemployment that alerted the economist to the possibility that deflation costs were more than transitory. The appearance of this line of thinking would make the development of the Keynesian Revolution central after 1929.

The Keynesian theory was developed based on the argument that the capitalist system does not tend towards an equilibrium of full employment. According to Keynes, the resulted underemployment equilibria could be fixed through fiscal or monetary policies designed to stimulate aggregate demand.

Contrarily, the Great War had a positive impact in another country that, even before the conflict, assumed a growing international relevance, the United States of America. Far from the zone of conflict, that took place on European soil, the USA were not directly and immediately affected, and a growing demand from a weakened Europe encouraged even more its production. Thus, emerging the American Way of Life, where consumption is the main factor of happiness, it was the basis for consumerism in the country by linking people's well-being to their purchasing power. Therefore, the belief that happiness would necessarily be linked to consumption, would stimulate the development of American industries (Louçã & Ash, 2017).

The European economy initiated a recovery process in the mid-1920s, reducing imports from the USA. Consequently, the North American market was increasingly saturated, contributing to the slowdown in industrial production, creating a crisis based on the interaction between the increase in production and the stagnation of consumption, generating the crisis of overproduction.

The Hoover's government defended a conservative and anti-New Deal policy, on the other side the New Deal, defended by Roosevelt was a political program determined to experiment with solutions, mobilizing different political segments in the United States. Therefore, Rosevelt was fully convinced that Hoover should follow the political guidelines consolidated by his government, which involved conceptions of individualism, defending the state intervention in the economy. The conflict between Roosevelt and

Hoover dictated different positions of progressives and conservatives in the United States that motivated the disputes of the 1930s.

From 1929 to 1933, Hoover's republican administration embraced the *laissez-faire* philosophy, implying a reduction of public control or regulation, and namely that the administration did not plan or attempt to regulate banking and financial activities, including the trade of stocks, bonds, and other economic aspects. It also failed to gather adequate and well-analyzed statistics, otherwise increasing problems in investments in the stock market, agriculture, international finance, and increased stocks of consumer goods would have been revealed. However, from the point of view of some Keynesian economists, the stabilization macroeconomic policy by the government through fiscal policy and/or by the central bank, and through monetary policy, would lead to more efficient results than the effects of the laissez-faire policy (Friedman & Schwartz, 2008).

In 1929, with the effects of the overproduction crisis, several businessmen went bankrupt, large banks closed their activities and unemployment rates surpassed historical records. Crucial to the American economy, the New York Stock Exchange housed important negotiations by the main companies in the world, being responsible for all the trade in shares in the country. However, the prices of shares were artificially valued to appear promising, increasing speculation and, since the shares did not a sound counterpart, devaluation followed, generating the “crash” of the New York Stock Exchange, on October 24th, 1929. On that day, the prices dropped sharply, so millions of American investors who had put their money on the New York Stock Exchange went bankrupt when the “credit bubble” burst, causing a chain effect. This day would come to be known as "The Black Thursday".

The United States maintained a strong trade and financial relation with most countries in the world, so it was inevitable that the repercussions of the crisis created in North American soil would hit the international market.

However, in 1932, the Democrat Franklin Delano Roosevelt was elected President of the USA and then implemented a plan, known as New Deal, based on a larger intervention of the State in the economy, namely a set of economic measures based on the Keynesian solutions. The New Deal economic plan was primarily responsible for the US economic recovery, being adopted as a model by other economies in crises. This plan helped to minimize the effects of the depression since 1933, although part of the American

workforce remained unemployed until the 1940s and the Second World War (Dallek, 2018).

The New Deal was a package of policies designed to address a wide range of specific problems that arose in a seriously depressed economy. However, in spite of the fact that President Roosevelt role was more activist than many of his predecessors, his commitment to individualism and the belief that the government should not impose aggressive measures, and the measures he took had little impact on the economy than required. Yet, according to some economists, monetary policy was the one that stood out the most, however, fiscal policy failed to achieve the expected results, concluding that the New Deal deviated from the foundations of the Keynesian theory (Fishback, 2017).

According to Keynes, as depressions do not disappear on their own, it is necessary to take aggressive measures to boost the economy and, ideally, these measures should come from the private sector. From its side, the government could also spend money on public works, or other projects, or even approve tax cuts, or both. According to his view, sustaining countercyclical spending would not prevent private expansion or investment, but it may have stopped the deflationary spiral, and could lead to the creation of jobs. According to some economists, the government can make a difference, and a major stimulus is essential to promote recovery, although it is necessary to ensure that the measures do not work in a contradictory way against the stimulus (Zelizer, 2000).

Experience proved that the Great Depression was only overcome with the beginning of the Second World War, and this new war would bring the North American economy back on track, when the state controlled the economy promoting large exports to supply the Allies with means to face the war.

The country's entry into the Second World War caused unemployment rates to drop and industrial production to grow dramatically. The world capitalist economy recovered under the impact of the Second World War.

2.2. Alternative theories in the 1920s

The Keynesian theory consists of a political-economic proposals, opposed to liberal and neoliberal conceptions, aiming at full employment, using public investment and the management of the interest rate, and eventually using public debt to promote investment and job creation. Notwithstanding, conventional economic theory is silent about debt. The

increase in inequality and debt can explain recessions if investment decreases, and if savings are shifted to financial markets.

According to Alvin Hansen, president of the American Economic Association, an adviser of Franklin Roosevelt, who was a specialist in the theory of economic cycles, the Keynesian theory provided the necessary strategy to solve the depression problem, at the Detroit meeting of the AEA, in 1930, he presented an etiological analysis and his prognosis on the current state of the economies (Louçã & Ash, 2017). Although Hansen thought that economic progress was possible, he acknowledged that the reduction of investment, combined with rigid costs and a static population, spawned the phase of secular stagnation.

Despite some recovering signs with the New Deal measures, and in the face of the collapse of international cooperation in the post-war period, Hansen predicted an evolution of "secular stagnation", a term that describes the slowdown induced by low demographic growth, characterized by strong unemployment with recession, as well as a failing recovery due to the decrease in population growth, in demand and in incentives for investment.

The solution proposed by Hansen to a secular stagnation was to promote innovation. However, even innovation can prove to have its obstacles, aggravating the effect of the lack of educational changes, of income inequalities that reduce aggregate demand, which reduces the investment, consumption and finally, of the public debt that is mobilized to pressure for restrictive measures.

The New Deal measures did not follow Hansen's priorities. Yet, amongst the main measures taken by that administration there were: the devaluation of the dollar to make exports more competitive, loans to banks to avoid bankruptcies in the financial system, the creation of the social security system, as well as the acceptance of the right to union organization, and finally, the stimulus of agriculture production and the construction of many public infrastructures, with emphasis on hydropower and highways. This perspective of economic activity saw capitalism as an integrated way of production, in which increased consumption, especially by workers, would stimulate the development of all economic sectors.

In any case, Milton Friedman, as other neoclassical economists, did not consider these factors or the evidence for stagnation; he preferred to blame the Federal Reserve

Board for its failure to prevent the collapse of the US money stock, and pointed that as the crucial ignition for the Great Crash and the following depression. Milton Friedman's analysis of the Great Depression blamed the Fed's failure, from 1929 to 1933, to prevent reductions in the money supply, since he saw changes in the money supply as a major cause of fluctuations (the reason why they could be an option for policy makers as a variable control). Given the potential destabilization of monetary policy and its susceptibility to short-term manipulation, Friedman looked for a better way to manage the money supply. So, he rejected the Keynesian view of aggregate demand, concluding instead that money is neutral in the long run and that even large monetary shocks are unable to permanently affect the aggregate demand and, therefore, in his theory, he assumed the Phillips long-term curve to be vertical, rejecting a stable exchange between inflation and unemployment.

Moreover, there were implications for Friedman's fundamental policies, based on money stock control; first, he argued that such policy should be carried out by an independent central bank, which applies a monetary rule to accommodate the evolution of the economy; and, secondly, he suggested measures on the supply side, such as tax cuts, which should be used to promote profitability and investment (Friedman & Schwartz, 1963).

Academics like Hansen, Krugman and Summers show that action must be taken to save the world from permanent depression. This remains a controversial theme, since monetarists stood by their opinion that slowdown and depressions are due to economic policies that protect regulation, whereas the Keynesians consider that the action of corporate interests promotes such depressions and recessions (Louçã & Ash, 2017).

2.2.1. Scheme of dynamics of etiological factors

The great forces of economic growth, according to the mainstream of classical economic, are technological innovations, the opening of new territories, the discovery of new resources and increase in population. The Great Depression after 1929 suggested that the

forces were largely limited and henceforth that future economic prospects were gravely imperiled. The Keynesian revolution in economics was a response to this evident malfunctioning of the capitalist economic system, although the policy recipes it offered (to increase demand and investment to levels capable of generating a balance consistent with the full use of productive resources, especially the work) have been controversial from their first enunciation. The most prominent American contributor to and spokesman for the new line of economic analysis — often called "the American Keynes" — was Alvin H. Hansen (1887–1975), who interpreted the economic problems of the 1930s not just as the manifestation of a particularly sharp cyclical downturn, but as evidence of secular stagnation caused by the closing of the economic frontier, sluggishness in technological innovation, and, not least, a severe decline in population growth. Hansen's analysis of the effects of the decline in population growth noted that a demographic slowdown reduces profitable investment opportunities and increases the levels of savings, thus pushing the economy into a low-growth equilibrium in which resources are underutilized and unemployment is high.

In other words, Hansen emphasized especially the demographically induced changes in the composition of output, suggesting that, in addition to its direct positive effect on investment and production, population growth also has a positive indirect effect on these factors, facilitating technological progress. In his policy proposals, Hansen was more interventionist than Keynes, advocating a more intrusive government role in the economy as a possible means of escaping the vicious cycle of low demand and high unemployment. As to government action to reverse demographic trends, seen as deleterious, neither Keynes nor Hansen argued for policies to increase fertility, presumably because they saw them as both inappropriate and, in comparison to remedial economic policy measures, inefficient or unfeasible (Hansen, 1939). The requirements of the war economy in the following years took care of the employment problem, and the immediate postwar decades brought the stimulus of the rapid growth of consumer demand, an outpouring of technological innovations, a reopening of the economic frontier produced by a more open trade regime, and, also, an acceleration of population growth giving rise to a Baby Boom. The result was rapid overall economic growth and increasing levels of per capita income in the developed economies. Henceforth, Keynesian demand management played a role in this economic success story, but it offered no remedy for

the stagflation that eventually followed in the 1970s. Additionally, Hansen is well-known for advocating public expenditure to maintain full employment, not only to counter the cyclical recession but also to escape long-run stagnation. In this manner, he was very conscious of the capital deficiencies inherited from depression, war and also national neglect. The same sense led him to give priority to private investment over consumption in postwar economic planning (Tobin, 1976). In the absence or failing those alternatives, Hansen predicted a drastic decline in population growth and a convergence towards a stationary population, based on a comparison of western demographic changes in the nineteenth and twentieth centuries.

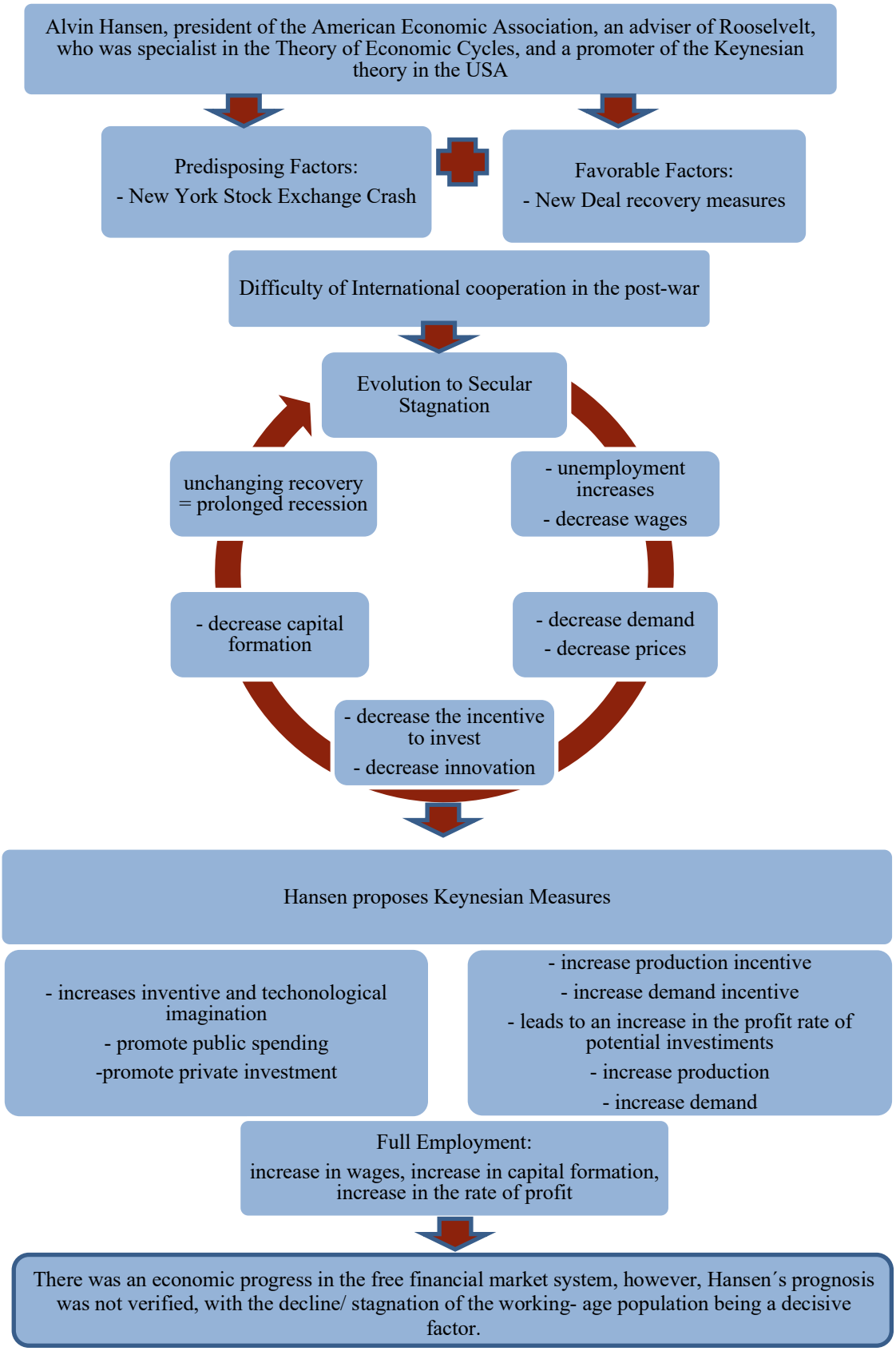

Figure 1 - Scheme of dynamics of etiological factors

2.3. The expansionary monetary and fiscal policies in the 1920s

In order to face the depression, Hoover requested the Federal Reserve to increase credit and continued to encourage states and private companies to generate new jobs. For this reason, the Federal Reserve Board deliberately created credit inflation, stating that, by controlling discount rates, open market operations and exchange rate initiatives, the crisis could be eliminated. His administration also considered that the increased rediscount rates and credit restrictions through the sale of government bonds by reserve banks ("open market operations") would restrict speculation and that the opposing actions of reserve banks would stimulate business activity (Galbraith, 2009). However, the consequences of the Federal Reserve Board action were disastrous for the economy, as well as it induced unwise investment in European loans and bank advances and additionally, it stimulated speculation in common stocks on American exchanges by making large funds available to those who wanted to borrow on small margins. Given the fact that the American people lived for a few years in the illusion of absolute security obtained from the Federal Reserve System, it took time to realize that the dangers were present in the structure of bank deposit, credit, and the promotion of inexpressibly weak and ill-organized security, reinforced due to the lack of scruple among some financiers, making the banking system the weakest link in the entire economic system (Hoover, 1952).

Looking for tools to promote stability in aggregate economic activity, a consistent effort to manage fiscal policy is largely a post-Second World War phenomenon. Prior to 1930, the federal government's spending and taxing decisions were largely, although not entirely, based on the consumption of public goods and services provided by the government. Although the fiscal policy concept had not been developed, this does not mean that during the twenties no concept of the government's role in stimulating economic activity existed. During the 1920s, Herbert Hoover and some of his contemporaries shared some ideas about the proper role of the federal government, although the view of liberalization of markets and of the decisive role of private investment was dominaned at the time. In any case, a discussion on if federal spending on public works could be an important force in reducing investment.

Both concepts fit the ideas held by Hoover and others of his persuasion that the U.S. economy of the twenties was not the result of laissez-faire workings but of

"deliberate social engineering", and his Secretary of Treasury, Mellon, became famous for his claims that only laissez-faire solutions could address the crisis. This corresponded to an old conflict on the fiscal strategies to be adopted by government.

The federal personal income tax had been declared in 1913. Although moderately progressive, its rates were low and amounted at 7 percent on taxable income more than $750,000. As the United States prepared for war in 1916, rates were raised and reached a maximum marginal rate of 12 percent. Therefore, to obtain additional revenue in 1918, marginal rates were again increased and due to this, the share of federal revenue generated by income taxes rose from 11 percent in 1914 to 69 percent in 1920. The tax rates had been extended downward so that more than 30 percent of the nation's income recipients were subject to income taxes by 1918. However, until the purchase of tax-exempt state and local securities and through steps taken by corporations to avoid the cash distribution of profits, the number of high-income taxpayers and their share of total taxes paid declined as Congress kept increasing the tax rates. The normal tax rate was reduced slightly for 1919 but the surtax rates, which made the income tax highly progressive, were maintained (Smiley & Keehn, 1995)**.** Thus, President Harding's new Secretary of the Treasury, Andrew Mellon, proposed cutting the tax rates, arguing that the rates in the higher brackets had passed the point of productivity, since rates that were more than 70 percent simply could not be collected.

However, there was sharp disagreement on how the rates should be cut. Accordingly, Democrats and progressive Republicans argued for rate cuts targeted for the lower income taxpayers while maintaining most of the steep progressiveness of the tax rates, as they believed that remedies could be found to change the laws in order to stop the legal avoidance of federal income taxes. On the other hand, Republicans argued for sharper cuts that reduced the progressiveness of the rates. In this manner, Mellon proposed a maximum rate of 25 percent. As the federal income tax rates were reduced and the system became less progressive, there were three tax rate cuts in 1921, 1924, and 1925 before Mellon's goal was finally achieved. The highest marginal tax rate was reduced from 73 percent to 58 percent, then to 46 percent and finally to 25 percent for the 1925 tax year. All the other rates were also reduced, and exemptions were increased. By 1926, only about the top 10 percent of income recipients were subject to federal income taxes. As tax rates were reduced, the number of high-income tax returns increased, the

share of total federal personal income taxes paid rose, and even with the dramatic income tax rate cuts and reductions in the number of low-income taxpayers, federal personal income tax revenue continued to rise during the 1920s, in the framework of a global expansion of the economy. In any case, as a consequence of these changes, the distribution of personal income showed sharp increases in income inequality during the 1920s (Kuznets, 1953; Holt, 1977)**;** yet, more recent estimates have found that the increases in inequality were considerably less than suggested by these authors, and these appeared largely to be related to the sharp rise in capital gains due to the booming stock market in the late twenties (Smiley, 2000). This way, each year in the twenties the federal government generated a surplus, in some years as much as 1 percent of GDP. The surpluses were used to reduce the federal deficit, which declined by 25 percent between 1920 and 1930. The American economy operated at full-employment or close to it throughout the twenties and experienced a significant economic growth. In this case, the surpluses were not contractionary because the dollars were circulated back into the economy through the purchase of outstanding federal debt rather than pulled out as currency and held in a vault somewhere.

Regarding the monetary policy, the Great Depression (1929-33) was mainly caused by the collapse in the money supply and the original recession was caused by a tight monetary policy in the late 1920s, according to Friedman. However, the Reserve System had a remarkable performance in monetary management and excellent economic stability, as it prevented the stock of money from rising as much as it would have if gold movements were allowed to exert all its influence (Friedman & Schwartz, 1963). Overall, from June 1921 to June 1929, member bank reserves increased 46.88% and member bank deposits 57.41%. In this period, the increase in the monetary multiplier was responsible for 18.45% of the increase in bank credit, while the increase in reserves represented 81.55%. The first was due to the reduction in the relative reserve requirements on time deposits compared to demand deposits at member banks, while the second was due to an increase in member bank reserves from an increase in the Federal Reserve's controlled factors which worked with the biggest money multiplier (Friedman & Schwartz, 1963). Following this explanation, at the beginning of the decade there were respective increases of 46.88% and 57.41% in reserves and deposits of member banks because, from June 1921 to June 1925, reserves and deposits increased, respectively, by 35.41% and 38.38%,

but from June 1925 to June 1929 only 8.47% and 13.74%. The money multiplier had increased mostly in the last period. In the first half, that growth is predominantly explained by the increase in reserves by 92.11%, compared to 7.89% for the monetary multiplier. However, the impact of the monetary multiplier was larger, accounting for 38.84% of the growth, while the increase in bank reserves only accounts for 61.16%. In other words, the money growth at the beginning was primarily from the increase in total bank reserves. Over the decade, bank reserves stopped increasing as much and so did member bank deposits. However, due to the intricately pyramidal structure of the banking system, the reserves worked with the money multiplier (recall that the deposit to reserve ratio rose during this period) to prolong the expansion. Thus, it was the increase in member bank reserves that accounted for most of the growth of member bank deposits and ultimately for the expansion of the entire money supply.

Therefore, the movements in member bank reserves and high-powered money during the 1920s have been described as being largely influenced by the Federal Reserve's contractionary "gold sterilization" policy. The process can be described as follows: when there is a gold inflow (outflow) which would cause expansionary (contractionary) pressure on the money supply, the Fed can offset it by decreasing (increasing) Federal Reserve Credit in order to neutralize its effects. At the beginning of the decade, the Fed "allowed" gold to enlarge the stock of high-powered money by not reigning in Reserve Credit enough. However, after a couple of years "gold movements were largely offset by movements in Federal Reserve credit so that there was essentially no relation between the movements in gold and in the total of high-powered money; the fairly irregular dips and rises in the gold stock were transformed into a horizontal movement in total high-powered money" (Friedman & Schwartz, 1963). For this reason, since gold increased and Federal Reserve Credit did not decrease enough, gold was partially able to affect the monetary base and member bank reserves and hence the money supply. The gold inflow is what caused the increase in member bank reserves as it was the expansionary factor and Federal Reserve Credit was the less powerful contractionary factor (Friedman & Schwartz 1963).

According to Friedman, in the presence of great national danger, the Federal Reserve should have used its power to insist on individual, community and state responsibility to act people. Therefore, the federal government should have used all of its

power to avoid the bank and credit depositor panic that so often accompanied the previous violent recessions, so that it would become possible to slowly cushion, through various devices, the inevitable liquidation of false values, in order to avoid generalized bankruptcies and losses of housing and productive power, to give aid to agriculture, to mitigate unemployment and alleviate people in real danger, to prevent industrial conflicts and social disorder, to preserve the financial strength of the United States government, credit and currency, to promote much-needed economic development and social reforms as soon as possible, without drastic actions that intensify the disease of an already sick economy.

2.4. The use of the lessons from the 1920s expansionary policies in the context of the last decade

The Great Depression of 1929 was an economic and financial crisis, marked mainly by abundant credit, uncontrolled consumption, as well as the excessive optimism of the growth of the New York Stock Exchange, favored by the financial market without any regulation, resulting in speculation, difficult financing of companies, some of which even went bankrupt, and to the loss of wages and income, thus leading to the reduction of consumption, since they had lost wealth.

On the other hand, the later Great Recession became an international financial crisis originated in the US, since, in the summer of 2007, the subprime crisis exploded. The US economy reached its most critical point in 2008, with the bankruptcy of Lehman Brothers, one of the country's leading financial institutions. The effects of the recession on the US economy quickly spread to the world economy, with global exports falling by nearly 20% between 2007 and 2009.

Therefore, as banks are symbols of capitalism and despite considering that there was a lack of regulation before the 2008 crisis, the State has for decades an interference in the banking market without parallel in other sectors, so there was the nationalization of banks in Europe and these banks are heavily intervened by the State unlike the United States.

The European response to the international crisis was carried out in a coordinated manner, using mainly fiscal and monetary policy. At first, governments with fiscal room

for maneuver were advised to increase public spending, especially investment. The European Central Bank proceeded with a rapid cut in interest rates to stimulate the economy but then, surprisingly, these strategies were abandoned, and the ECB proceeded to raise the interest rate and the European Commission proposed restrictive measures.

Therefore, in the space of just a decade, the world has faced the most serious recession since the 1930s, leading conservative economists (Cochrane, 2008; Barro, 2020), firmly opposed to the fiscal and monetary stimuli, challenging the option by the Federal Reserve to cut nominal short-term interest rates, or to conduct large-scale asset purchases. As the Fed's actions stimulated the economy, compensating for the fall in GDP, these economists suggested that there would be a threat of inflation in response to the negative supply shock and the expansionary policy of the Federal Reserve.

These criticisms did not prevail. Quantitative Easing (QE) and other unconventional monetary policy tools were first adopted in the US and then in Europe, with the purpose of generating the fiscal stimulus required to increase aggregate demand. After the 2008 crisis and the ensuing recession, QE became a common monetary policy tool.

The Trichet's replacement at the head of the ECB was Mario Draghi, who argued that the world was changing, and so instead of Friedman's theory (or Taylor's rule), which is designed to control inflation, and given that the political structure was expressly conceived to build strong anti-inflationary credibility, what would be required was a massive expansion in the balance of the Central Bank. And therefore, a new paradigm for the Central Bank was suggested, based on, first, the determination to fight deflation with the same strength as inflation and second, accepting flexibility in the choice of instruments (Draghi, 2019). Furthermore, Draghi defended national expansionary fiscal policies by the dominant European economies as the only solution to the scarcity of demand, in addition to the QE.

On the other hand, Ben Bernanke argues that QE is a necessary alternative to traditional monetary policies (Bernanke, 2020), and so, if monetary policy remains relevant, policymakers should adopt new tools and structures. In this case, according to Bernanke, after cutting short-term interest rates to zero (or nearly zero), the Federal Reserve and other central banks should turn to alternative tools to provide stimulus. In addition, QE and future guidance, together with other tools, were used by different central

banks as new instruments, with a sharp contrast to the monetary policy rules advocated by Taylor and other monetarist economists. This way, monetary policy has been redefined, and according to Bernanke, it should be combined with fiscal policy if the "neutral interest rate" falls below 2%, although the economist wrote that the imposed monetary policy would be enough to provide a stabilization.

Despite this, QE may have other consequences: in fact, it can create financial instability when asset bubbles emerge and risk taking is encouraged with the expansion of liquidity under low interest rates. Some monetarist economists persisted challenging the unorthodox monetary measures, such as Taylor and Cochrane, who always opposed to the QE method, arguing that it changed maturity costs, and that short-term bonds were a perfect substitute for reserves, when interest rates are zero (Cochrane, 2013). Furthermore, according to them, QE creates a change in the government's debt maturity structure, but it is also a dangerous fiscal and regulatory policy, since it only means a political stance by central banks (Cochrane, 2020). The argument is that this policy change attempts to combine elements of the pre-crisis consensus with the need to justify the adoption of pragmatic practices and activist political actions. Regarding fiscal policy, these adaptations took the form of a constant balance between the countercyclical calls for fiscal stimulus, which was increasingly seen as a necessary complement to monetary expansion, and responsible fiscal consolidation (Cochrane & Taylor, 2020).

The successor of Bernanke as the president of the Fed, Janet Yellen, did not challenge the previous course, considering that a wide range of fiscal policy tools and approaches could increase the cyclical stability of the economy and in this regard, measures could be taken to increase efficiency of automatic stabilizers, promoting a continuous assessment of a wide range of information in the context of understanding the constant evolution of the economy, as well as ensuring that any changes in fiscal policy would not affect long-term sustainability (Yellen, 2014). Therefore, some economists proposed that greater fiscal support could be usefully provided to state and local governments during recessions.

Yellen argued that for pragmatism and embraced the unconventional monetary policy, the Quantitative Easing, in order to put considerable downward pressure on long-term interest rates, which, as a result, helped boosting the growth in demand for goods and services, reducing the unemployment rate, thus preventing inflation from falling

below 2%, which was the objective to be achieved (Yellen, 2016). Thus, she emphasized the need to coordinate and stimulate monetary and fiscal policies, since the coordinated actions of central banks and governments played a key role in mitigating the crisis.

The explicit indication that the ECB should seek keeping the inflation rate below, but close to 2.0%, aimed to provide an adequate margin to avoid risks of deflation, considering that, in a deflationary environment, monetary policy may not be able to sufficiently stimulate aggregate demand, especially when nominal interest rates are already very close to zero (or close to a liquidity trap). This liquidity trap may occur when the nominal interest rate approaches zero, preventing the monetary authority from continuing to stimulate the economy using traditional instruments. In these circumstances, any attempt to reduce the nominal rate to below zero would fail, since economic agents preferred holding cash rather than granting loans or holding deposits at a negative rate (Gerlach, 2007). In this sense, deflation can be more difficult to fight than inflation and, although it is possible to adopt other unconventional monetary policy measures with nominal interest rates close to zero (for example, credibly signaling the maintenance of interest rates), or very low for an extended period of time, buying public and private debt securities ("credit easing") and massively injecting liquidity into the financial system at a reduced cost ("quantitative easing"), however its effectiveness were at the time considered to be highly uncertain (Banco Central Europeu, 2009), they were alternative strategies to be considered.

The last few years have witnessed a constant search for models to adapt to a new economic reality. Over the past decade, many economists have sought to come to terms with the recent past, that is, accepting that these tools are necessary.

In the face of the recession in the 2020s, under zero or negative benchmark interest rates, a new phase appears with the studies and the interpretations of economists of other past recessions, and certain principles, such as the fact that strategic monetary policies are indispensable instruments for countercyclical action. It is also important to understand that low long-term interest rates are due to the fact that there is low aggregate demand (and a stagnating population, as Hansen feared), as well as chronically low inflation, which provides an increase in savings at times of uncertainty and therefore inflation seems insensitive to unemployment, promoting an increase in inequality, an increase in indebtedness and a decrease in nominal interest rates that emerge as secular trends.

Other important principles demonstrated by recessions are the disappearance of crowding out in the presence of zero or negative interest rates, and the perception of the dangers of unregulated financial markets. This is why some economists argue that traditional banks should have a more important role in the intermediation of capital markets and, on the other hand, budget and fiscal policies tend to become central instruments for stabilization and, considering the costs of ageing and climate change adaptation, become part of the public decision agenda. Some pieces of research show that in previous centuries it took decades to restore the economy after a major crisis. This may be a reason for active fiscal action as an important tool for countercyclical policies. Consequently, it is crucial to pay attention to banking and credit, or to the monetary and financial markets, in order to measure instability, as well as to define an agenda for countercyclical and structural tools, such as aggregate demand impulses, namely the creation of investment stimuli, industrial strategies and innovation, both at the macroeconomic level and at the company company level (Louçã et al., 2021).

However, in particular, when we face a recession, economists exhibit different opinions with immediate consequences, for policies hailed as saviors by some are denigrated by others as severe threats. This discord certainly expresses the different worldviews, but also the fate of theories and models when confronted to reality.

In addition to all possible measures to be taken to minimize the damage of recessions, it is imperative to define at each moment the measures necessary to promote investment and to avoid the prolonging recession into a depression. Under the adverse circumstances in which we live, alongside the whole world, is a challenge to take measures to minimize an economic recession. Over the business cycle, we also need coordinated fiscal policies to be sufficiently countercyclical, thereby contributing to economic stabilization. Until now, the burden of countercyclical stabilization has been mainly left to monetary policy. This situation is not sustainable, particularly in the context of a recession. Monetary policy will certainly require the combination of strong fiscal and other policies.

3. DATA AND METHODOLOGY

3.1. Data

The following analysis gathers annual data from 2009 to 2019 for 16 countries. We splitted these countries into three groups, the ones that belong to the euro area (Austria, Belgium, France, Finland, Germany, Greece, Italy, Luxembourg, Portugal, Spain), the ones that did not adopt the common currency (Czech Republic, Denmark, Norway, Sweden, Switzerland), and finally the one that in 2019 belonged to the European Union and since 2020 abandoned it (United Kingdom).

The data used in this study was extracted from the European Commission database. The dataset includes the following variables:

- direct investment;
- disposable income;
- consumption;
- exports;
- consumer price index (inflation);
- GDP per capita growth rate;
- long-term nominal interest rate;
- public expenditure;
- tax revenue;
- and unemployment.

This study aims to assess the impact of monetary and fiscal policies, and the interaction between them, from after the financial crisis of 2009 to the year before the corona-crisis in 2020. We measure the increase in public expenditure, the decrease of tax revenue, the increase in disposable income, the increase in consumption and investment of companies, as well as the increase of employment, showing, through the application of fixed effects model using the panel data, that expansionary policies lead to the increase of production and investment and to the decrease of unemployment.

3.2. Methodology

This study uses a balanced panel data of 16 countries in the period from 2009 to 2019. Some panel techniques are used to estimate the empirical model and there are some advantages in using this kind of empirical approach. The most important is that it highlights the individual heterogeneity as all parameters (constant and slope coefficients) vary across individuals. To estimate the empirical model, we used the Fixed Effects (FE) model. Some issues arose when deciding to estimate through Fixed Effects (FE), there are some associated problems, like missing data for some particular countries. In any case, FE seems to be the best way to estimate a model where omitted variables and explanatory variables are correlated.

Therefore, the panel data model is represented by the equation (1):

$$(1) \quad y_{ti} = X_{ti}\beta + \alpha_i + \epsilon_{it} \ , \qquad i = 1,2, \dots, n; t = 1,2, \dots, T$$

Where y_{ti} is any dependent variable for country *i* in the period *t.* X_{ti} represents the vector of control or independent variables and β are unknown coefficients to be estimated, which means, the estimated effects of the independent variables on the dependent variables. α_i and ϵ_{it} are unobservable residual variables. ϵ_{it} is a random error term which is called an idiosyncratic error, representing the possible effects of the omitted variables. Also, α_i is an unobservable variable that does not depend on time, which represents, each country's heterogeneity.

4. EMPIRICAL ANALYSIS

The empirical analysis of this study is divided into two different parts. We estimated the individual regressions for monetary and then for fiscal policy, in order to observe the application of the expansionist policies of the last decade, through the application of fixed effects model using the panel data.

4.1. Monetary Policy

Regarding the conduction of monetary policy, where it refers to the actions undertaken by a nation´s Central Bank to control money supply and achieve sustainable economic growth and nevertheless, the interest rate smoothing is an important role in the design of monetary policy (Silva & Vieira, 2017). Therefore, monetary authorities are typically given policy mandates to achieve a stable rise in GDP, keep unemployment low, and maintain foreign exchange and inflation rates in a predictable range. Hence, the monetary policies regression is given by the following expressions:

$$unemp_{ti} = \beta_0 + \beta_1 wage_{ti} + \alpha_i + \epsilon_{ti} \quad (2)$$

$$investp_{ti} = \beta_0 + \beta_1 longinterest_{ti} + \alpha_i + \epsilon_{ti} \quad (3)$$

$$inflation_{ti} = \beta_0 + \beta_1 longinterest_{ti} + \alpha_i + \epsilon_{ti} \quad (4)$$

where the index *i* (*i*=1, 2, ..., *I*) represents the country, the index t (t=1, 2,….,T) denotes the time period. Moreover β_0 and β_1 stands for the estimated effects of each country *i;* Furthermore, ϵ_{it} and α_i are the idiosyncratic error and unobservable heterogeneity effect respectively.

In Table I, the estimated results for regressions (2), (3) and (4) are presented. For regression (2), we verify that an increase on the independent variable, which is wage, on average, implies a decrease on the dependent variable, which is unemployment. The independent variable is statistically significant at 1% level, and it has positive impact over unemployment. For regression (3), regarding all variables, we verify that a decrease on the independent variable, that is the long-term nominal interest rate, on average, implicates an increase on the dependent variable, which is investment. Regarding the

variable, which appears to have a positive impact over investment, it is to be noted that it is not statistically significant at 1% level. For the estimated result for the last regression (4), we note that an increase on the independent variable, that is the long-term nominal interest rate, on average, implies a decrease on the dependent variable, which is inflation. Again, it is not statistically significant 1% level. Thia was to be expected and shows how a policy based on the increase of disposable income and the incentive to investment is adapted to times of recession, increasing aggregate demand and generating jobs as in the period between 2009 and 2019. This outcome was predictable since most countries have been dealing with low inflation rates, leading to central banks to respond with low interest rates.

Table I - *Monetary Policy (the relation among unemployment, investment and inflation)*

	Dependent variable:		
	Unemployment (1)	Direct_Investment (2)	Inflation (3)
Wage_Salary	-0.526*** (0.045)		
Long_Interest		-0.488 (0.328)	-0.007 (0.027)
Observations	165	176	176
R2	0.476	0.013	0.0004
Adjusted R2	0.438	-0.053	-0.067
F Statistic	139.072*** (df = 1; 153)	2.211 (df = 1; 164)	0.072 (df = 1; 164)

4.2. Fiscal Policy

Regarding the conduction of fiscal policy, or the changes to public policies in order to influence the economy by adjusting the level of spending and tax revenues, our data shows that expansionary fiscal policy was generally used to boost GDP growth and the economic variables that tend to move with GDP, such as employment and disposable income. The fiscal policies regression is given by the following expressions:

$$Investment_{ti} = \beta_0 + \beta_1 disposable\ income_{ti} + \alpha_i + \epsilon_{ti} \quad (5)$$

$$Unemp_{ti} = \beta_0 + \beta_1 GDP_{ti} + \alpha_i + \epsilon_{ti} \quad (6)$$

$$GDP_{ti} = \beta_0 + \beta_1 exports_{ti} + \beta_2 \Delta G_{ti} + \alpha_i + \epsilon_{ti} \quad (7)$$

$$Unemp_{ti} = \beta_0 + \beta_1 \Delta G_{ti} + \alpha_i + \epsilon_{ti} \quad (8)$$

$$Consumption_{ti} = \beta_0 + \beta_1 disposableincome_{ti} + \alpha_i + \epsilon_{ti} \quad (9)$$

$$GDP_{ti} = \beta_0 + \beta_1 consumption_{ti} + \beta_2 exports_{ti} + \alpha_i + \epsilon_{ti} \quad (10)$$

$$Disposableincome_{ti} = \beta_0 + \beta_1 taxrevenue_{ti} + \alpha_i + \epsilon_{ti} \quad (11)$$

where the index *i* (*i*=1, 2, ..., *I*) represents the country, the index *t (t*=1,2,….,*T)* denotes the time period. Moreover β_0 and β_1 stands for the estimated effects of each country *i;* Additionally, ϵ_{it} and α_i are the idiosyncratic error and unobservable heterogeneity effect respectively.

In Table II, the estimated results for regressions (5), (6) and (7) are presented. For regression (5), we verify that an increase on the independent variable, that is disposable income, on average, implies an increase on the dependent variable, which is direct investment. This independent variable is statistically significant at 1% level, and it shows a positive impact over investment. Regarding the regression (6), we prove that an increase on the independent variable, which is the growth GDP per capita, on average, generates a decrease on the dependent variable, that is unemployment. It is statistically significant at 1% level, and it shows a positive impact over unemployment. For the regression (7), we verify that an increase on the independent variables, which are exports, on average, and the variation in public spending, on average, imply an increase on the dependent variable, that is the growth GDP per capita. All variables are statistically significant at 1% level, and they have a positive impact over the growth GDP per capita.

In Table III, the estimated results for regressions (8) and (9) are presented. For regression (8), we can observe that an increase on the independent variable, which is the variation in public spending, on average, implies a decrease on unemployment, the dependent variable. This is statistically significant at 1% level, and it has positive effect over the dependent variable. Regression (9) suggests that an increase on the independent variable, which is the disposable income, on average, implicates an increase on the dependent variable, that is consumption. This is statistically significant at 1% level, and it has positive impact over consumption.

The estimated results for regressions (10) and (11) are presented in Table IV. For regression (10), we note that an increase on the independent variables, which are exports

and consumption, on average, which implies an increase on the dependent variable, the growth GDP per capita. The independent variables are all statistically significant at 1% level, and both have a positive effect over the growth GDP per capita. Regarding the regression (11), we notice that an increase on the independent variable, which is tax revenue, on average, implies a decrease on the dependent variable, disposable income. However, it is not statistically significant at 1% level in the period in study, between 2009 and 2019.

This suggests that government can use fiscal stimulus to improve economic activity. As increasing government spending that tends to encourage economic activity through the purchase of additional goods and services or decreasing tax revenues, which tends to encourage economic activity indirectly by increasing individuals´ disposable income, which can lead to increase consumption. This sort of expansionary policies can be advantageous when the economy is in recession, as it lessens the negative impact, such as the high unemployment and stagnant wages. However, expansionary fiscal policy can increase interest rates, growing trade deficits and accelerating inflation, particularly if applied during periods of economic expansions.

The results of the estimation of the panel as a whole strongly suggest that anti-cyclical policies were required and were successful. However, it is to be noted that some of the countries in the sample used pro-cyclical policies, namely those under the jurisdiction of austerity rules, leading to deep and, in some cases, prolonged recessions.

Table II - *Fiscal Policy (the relation among investment, unemployment and GDP)*

	Dependent variable:		
	Direct_Investment (1)	Unemployment (2)	GDP (3)
Disp_Income	0.141*** (0.036)		
GDP		-1.388*** (0.221)	
var_G			0.019*** (0.0003)
Exports			0.003*** (0.001)
Observations	175	165	176
R2	0.086	0.205	0.972
Adjusted R2	0.025	0.147	0.970
F Statistic	15.377*** (df = 1; 163)	39.368*** (df = 1; 153)	2,820.463*** (df = 2; 163)
Note:			*p<0.1; **p<0.05; ***p<0.01

Table III - *Fiscal Policy (the relation among unemployment and consumption)*

	Dependent variable:	
	Unemployment (1)	Consumption (2)
var_G	-0.027*** (0.004)	
Disp_Income		0.045*** (0.004)
Observations	165	174
R2	0.203	0.382
Adjusted R2	0.145	0.340
F Statistic	38.866*** (df = 1; 153)	100.013*** (df = 1; 162)
Note:		*p<0.1; **p<0.05; ***p<0.01

Table IV - *Fiscal Policy (the relation among GDP and disposable income)*

	Dependent variable:	
	GDP (1)	Disp_Income (2)
Consumption	0.181** (0.085)	
Exports	0.012*** (0.003)	
Tax_Revenue		-0.316 (0.279)
Observations	175	175
R2	0.136	0.008
Adjusted R2	0.072	-0.059
F Statistic	12.757*** (df = 2; 162)	1.286 (df = 1; 163)
Note:		*p<0.1; **p<0.05; ***p<0.01

5. CONCLUSION, LIMITATIONS AND FUTURE RESEARCH

This study is focused on an historical overview of the 1920s expansionary policies, as well as on the authors of that time who gave rise to the fundamental theories on the growth in order to compare its lessons to the contemporary choices of political economy.

Both crises started in the US and both crises led to the collapse of credit-based economic and financial systems and weak financial regulation. However, the 2007-2008 Crisis was caused by Subprime while the 1929 Economic Crisis was caused by the American overproduction. The collapse was due to falling domestic demand and Europe's recovery from the post-war crisis that led to a drop in USA exports. In both crises the consequences were similar - bank failures, credit contraction, cuts in business expenses / business bankruptcies, unemployment, household indebtedness, reduced consumption, prices falling, leading to the global contagion of the economy.

Through the last decade, the developed countries are facing a situation of population declining, with slow economic growth, in some cases high levels of unemployment, so we face conditions conducive to prolonged stagnation. Additionally, there is a demographic slowdown, and given unemployment and conditions for a decrease in demand and in the incentives to invest, a secular stagnation has been predicted. Furthermore, if associated with policies and austerity to fight inflation, with targeted privatization policies or rescue of private companies with public spending, this may lead to a self-fulfilling prophecy. Contradictorily, experience proves that, in post-collapse conditions, it is required to decrease the interest rate to promote investment and employment. However, it is not feasible to have a long period of an interest rate below zero, since it implies recovery without jobs, without sufficient investment and increasing the risk of deflation, and therefore the tendency of depression. The attenuation of economic growth leads to a decrease in total production today and a decrease in potential production in the future. The scarcity of investments that leads to excess savings, has added new risks, since funds that are not used to buy goods and services, and instead are used in speculative markets in search of high rates of return.

In some European countries, including Portugal, the measures taken to respond to the 2008 crash were, with the exception of a budget expansion for 2009, based on imposing austerity, first, lowering wages and increasing taxes, reducing aggregate

demand; second, decreasing total production, as well as, employability, leading to an increase in the recession; and lastly, leading to an excess savings without investment, generating new bubbles. Contrary to certain countries, Portugal adopted austerity measures as there was a gradual process of loss of competitiveness, with the increase in wages and the reduction of tariffs on low-value exports from Asia to Europe. Facing low economic growth, the Portuguese government found it difficult to obtain the necessary revenue to cover public spending, as well as government spending that was relatively high. Thus, when the global financial crisis broke out, Portugal faced a large public debt, which became increasingly difficult to finance. Portugal has found it increasingly difficult to manage its debt, with interest rates rising, due to investors' concerns that the country will be unable to repay its loans. To boost confidence in the economy, Portuguese Prime Minister José Sócrates tried to adopt austerity measures to reduce government spending.

In addition to the identification of historical factors, the aim of the applied methodology is to understand if expansionary policies are correlated to positive results in the economy. For this, an analysis of panel data was performed using fixed effects estimation (FE) for a set of 16 countries in the period between 2009 and 2019.

The results obtained in the estimate for the FE model are all statistically significant results and have a positive impact on the dependent variable, except for three correlations, disposable income, investment and inflation, that did not show statistically significant results for the respective period of time, however they have a positive impact on the dependent variable. Given this, we can conclude that expansionary policies can be advantageous when the economy is in recession, stimulating economic activity and reducing negative impacts such as unemployment and wage stagnation. If the government uses fiscal stimuli to improve economic activity, it tends to encourage economic activity through the expansion of aggregate demand and by increasing the individuals´ disposable income.

Some limitations of the previous research are obvious, given the extreme aggregation of data, the inclusion of economies with very different economic structures, institutional capacities, and dynamics, and also the evidence of uncertainty when different policies are adopted, forcing the consideration of the concrete cases of each economy and political setting.

For future research, the interaction between historical events of the past and the future should be explored, since it is necessary to discover the more adequate and specific expansionary policies, namely of strategies of investment and financial management in conditions of population decline, facing the danger of prolonged secular stagnation, having a fundamental role for the correct and immediate resolution of new events in the economy.

REFERENCES

Banco Central Europeu. (2009). (Banco Central Europeu) Obtido em March de 2021, de Porque é importante a estabilidade de preços?: https://www.ecb.europa.eu/explainers/tell-me-more/html/stableprices.pt.html

Barro, R. (2020, March 26). *Cutting GDP to counter the Coronavirus pandemic*. (National Reviews) Retrieved from https://www.aei.org/articles/cutting-gdp-to-counter-the-coronavirus-pandemic/

Bel, G. (2010). Against the mainstream: Nazi privatization in 1930s Germany. *Economic History Review, 63 (1)*, 34-55.

Cochrane, J. (2008, Outubro 2). *John Cochrane on why the bailout plan would be a disaster*. Retrieved Fevereiro 2021, from https://freakonomics.com/2008/10/02/john-cochrane-on-why-the-bailout-plan-would-be-a-disaster/

Cochrane, J. (2013). Retrieved February 2021, from Interview, Richmond Fed Econ Focus: https://www.richmondfed.org/publications/research/econ_focus/2013/q3/full_interview

Cochrane, J. (2020, March 18). *Strategic review and beyond: rethinking monetary policy and independence*. (Federal Reserve Bank of St Louis Review) Retrieved February 2021, from https://research.stlouisfed.org/publications/review/2020/03/20/strategic-review-and-beyond-rethinking-monetary-policy-and-independence

Cochrane, J., & Taylor, J. (2020). *Strategies for Monetary Policy.* Stanford: Hoover Institution Press.

Cochrane, J., & Taylor, J. (2020). *Strategies for Monetary Policy.* Stanford University: Hoover Institution Press.

Dallek, R. (2018). *Franklin D. Roosevelt - A political life.* US: Penguin Books.

Draghi, M. (2019, October 28). *Farewell remarks*. Retrieved February 2021, from https://www.ecb.europa.eu/press/key/date/2019/html/ecb.sp191028~7e8b444d6f.en.html

Fishback, P. (2017, December). How successful was the New Deal? The microeconomic impact of New Deal spending and lending policies in the 1930s. *Journal of Economic Literature, 55 (4)*, 1435-85.

Friedman, M. (1968). The Role of Monetary Policy. *American Economic Review, 58 (1)*, pp. 1-19.

Friedman, M., & Schwartz, A. (1963). *A Monetary History of United States, 1867-1960.* New York: National Bureau of Economic Research.

Friedman, M., & Schwartz, A. (2008). *The Great Contraction 1929-1933.* USA: Princeton University Press.

Galbraith, J. (2009). *The Great Crash 1929. The classic account of financial disaster.* UK: Penguin Books.

Gerlach, S. (2007). Interest Rate Setting by the ECB, 1999-2006: Words and Deeds. *International Journal of Central Banking, 3 (3)*, 1-46.

Hansen, A. (1939). Economic Progress and Declining Population Growth. *The American Economic Review, 29(1)*, 15.

Holt, C. (1977). Who Benefited from the Prosperity of the Twenties? *Explorations in Economic History, 14*, 277-289.

Hoover, H. (1952). The Memoirs of Herbert Hoover: The Great Depression 1929-1941. *Macmillan Company*.

Krugman, P. (2011). Prepared for the Cambridge Conference Commemorating the 75th Anniversary of the Publication of the General Theory of Employment, Interest and Money. *Mr. Keynes and the Moderns,*, pp. 1-28.

Kuznets, S. (1953). Shares of Upper Income Groups in Income and Savings. *NBER*.

Louça, F., & Ash, M. (2017). *Sombras. A Desordem Financeira na Era da Globalização.* Lisboa: Bertrand Editora.

Louca, F., Abreu, A., & Costa, G. (2021). Disarray at the headquarters: Economists and central bankers tested by the subprime and the COVID recessions. *30(2)*, 273-96.

Silva, C., & Vieira, F. (2017). Monetary and Fiscal policy in advanced and developing countries: An analysis before and after the financial crisis. *The Quarterly Review of Economics and Finance, 63*, 13-20.

Skidelsky, R. (1992). *John Maynard Keynes: The Economist as Saviour 1920-1937.* London: Macmillan.

Smiley, G. (2000). A Note on New Estimates of the Distribution of Income in the 1920s. *The Journal Economic History , 60(4)*, 1120-1128.

Smiley, G., & Keehn, R. (1995). Federal Personal Income Tax Policy in the 1920s. *The Journal of Economic History, 55 (2)*, 285-303.

Solow, R. (2008). The state of macroeconomics. *Journal of Economic Perspectives, 22 (1)*, pp. 243-246.

Taylor, J. (1993). Discretion versus policy rules in practice. *39*, pp. 195-214.

Tobin, J. (1976). Hansen and Public Policy. *The Quarterly Journal of Economics, 90(1)*, 32-37.

Yellen, J. (2014, August 22). *Board of Governors of the Federal Reserve System*. Retrieved February 2021, from Labor Market Dynamics and Monetary Policy: https://www.federalreserve.gov/newsevents/speech/yellen20140822a.htm

Yellen, J. (2016, August 26). *Board of Governors of the Federal Reserve System*. Retrieved February 2021, from The Federal Reserve's Monetary Policy Toolkit: Past, Present, and Future: https://www.federalreserve.gov/newsevents/speech/yellen20160826a.htm

Zelizer, J. (2000). Zelizer, J. (2000). The Forgotten Legacy of the New Deal: Fiscal Conservation and the Roosevelt Admnistration, 1993-1938. *Presidential Studies Quarterly, 30 (2)*.