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The Great Recession: Hidden in the past or about to last?

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A thesis submitted for the degree of
Master of Science (MSc) in Banking & Finance

December 2022
Thessaloniki – Greece

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I hereby declare that the work submitted is mine and that where I have made use of another's work, I have attributed the source(s) according to the Regulations set in the Student's Handbook.

December 2022
Thessaloniki - Greece

Abstract

This dissertation was written to fulfill the graduation requirements of the MSc in Banking & Finance at the International Hellenic University. I was engaged in studying, researching, concerning and writing this dissertation from June to December 2022.
The aim of the dissertation is to analyze the economic background that led to the burst of Great Recession, the most recent and one of the greatest influence financial crises in the world history. Its duration and its impact in US are of great importance as well as how US economic plunge spread out in a flash to Europe and the whole world. The burning question is whether Great Recession is over or its implications are still present. As Great Recession provoked an avalanche in the global financial and political scenery with deep consequences in different type of economies, it is of great importance to discuss and conceive its impact worldwide in order to understand how different fiscal models function as well as how interconnected economies are all over the world. We study, theoretically and empirically, the backbone, the chronicle as well as the global severe implications of Great Recession through extensive bibliographic research, documentaries that include interviews of economists that played major roles that time, economic books and articles, surveys and graph analysis.
Great Recession is, for sure, still present. Not only due to the hurt that left mainly in smaller European economies, but as well as it confirmed that measures are always decided by the strong economies to be applied by the smaller ones and finally the strong become strongest. Measures are not applicable, exhaust and enrage public and finally it seems that could be avoided. Great Recession is the best example for the above as for the common truth that history repeats itself and those who move the strings do not learn their lesson. Or maybe just they do not want to.

Keywords: Great Recession; Derivatives; CDOs; MBS; Subprime Mortgage Crisis; Housing Market Bubble;

Apostolos Bitsios
15/12/2022

Preface

My name is Apostolos Bitsios. I was born and grew up in Serres, Greece. As an adolescent, I remember myself to wonder about the financial system of my country, Greece. I was observing the economic difficulties that my country was facing at that time, the political scenery, the unemployment that was troubling me about my future in a country like this. Gradually, I started searching information and that was growing my interest more and more in Economics. Great Recession is not another recession in economic history. For me, it constitutes memories of my young self, it cultivated my curiosity for how Economics are not another science but actually it is the most realistic science that explains how the world is running. Although, I had read relevant articles and books in the past, this dissertation maximized my learning opportunities, it taught me to combine different bibliographic sources and basically that truth is somewhere in the middle and for sure it is hidden behind the words. Research never ends and economic data are in a constant trajectory of change. Besides, this makes Economics charming.

I would like to acknowledge the valuable contribution of my supervisor, Professor Dimitrios Gavalas, for his consulting and presence whenever I addressed him. I chose him due to the admiration I have for him, for his knowledges and expertise in his field and the faith that he would help me whenever I ask for.

I would also want to thank you my family and close friends for their support whenever I needed it.

Last but not least, I take the opportunity to acknowledge the contribution of people who will read this dissertation because, without them knowing, they were giving me the stimulus to ameliorate my research in order to get deeper and more complete. I hope that my research concerns people with economic studies or not, people that are just awaken about the world they live in.

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1. Introduction

Financial system experienced many crises in world history. Great Recession was one of the biggest and most recent of all, representing the deepest downturn in the labor market in the postwar history (Elsby et al., 2010). Great Recession burst in 2007, following the forty years period of apparent prosperity after the Great Depression which took place from 1929 to 1933, both of them having the same people as key policy makers and sweeping economic consequences despite that, thanks to Great Depression, many inherited financial arrangements were discredited and abandoned (Eichengreen, 2016). Financial deregulation, caused by insufficient control in financial elements, the dot-com bubble and other speculative investment movements were the foundations of the chaos ahead. However, innovations in economic system as the introduction of packages of loans that were sold in investors, called derivatives, as well as the greedy administration of CDOs and MBS countersigned this financial bomb explosion (Grusky et al., 2011).

It seems as an informal agreement had been made. Common people would live the “American Dream” by lending and Banks and investors would make profit. However, usually in these cases in the end there is only one winner: the speculators. The House Marketing Bubble burst along with the US subprime mortgage crisis. The consequences could not even be accountable at that time.

Businesses and even banks started collapsing one following another, bankruptcy of colossus like Lehman Brothers, cash flow was to dry up, climbing of unemployment, home foreclosures, property commitments, savings of a lifetime grew wings (Temin, 2010).

In an unstable political system, governments were trying to launch bailout programs for even the largest banks worldwide, as Bank of America, and insurance colossus, as AIG. Even if in many cases, they succeeded in that, global threat of collapse was there as US stock market and credibility was fading away.

The butterfly effect had soon spread out the recession in Europe and all over the world. With US as the major financier in International Monetary Fund and the largest companies being active in US stock market, it was a matter of time for European countries started facing financial problems. However, the same period, China and other Asian countries managed to note economic growth even at a slow pace. Asia had learned

its lesson from the previous Asian crisis in 1997-1998 and Asian economy was set in a flexible way in order to run a possible bailout program on its own (Bown, 2011).

On the completely opposite side, Greece was one of the most affected economies throughout the Great Recession. Greece seemed to pay the bill for a not in accordance with regulations entrance in Eurozone, thus in a political and economic environment with standards Greece could not follow from the first moment. This bill included long term political and social instability, extremely rise of unemployment, successively packages of measures that press more and more Greek taxpayers and Europe that was taking bailout programs and funded Greece in order to follow the strict terms that Europe had set in order not to leave Greece experiencing an imminent default. Europe funded countries like Greece in order to take its money back from the repayment of loans that Europe had given to them. It seems as this vicious circle is not over.

This dissertation is structured as following. This introduction is the first chapter. The second one explains the economic facts that became the background in the beginning of Great Recession. The third chapter is the theoretical background for derivatives, the financial innovation of that period that had crucial role in the avalanche of crisis. Chapter 4 includes the chronicle of Great Recession with the severe US subprime mortgage crisis that contributed to the housing bubble and furthermore it analyzes the movements made in order to save even colossus from economic disaster. The next chapter, chapter 5, presents the impacts that Great Recession had in the rest of the world and specifically in other European countries by measuring major indexes of growth as Real GDP growth and unemployment rate are. In chapter 6, it is discussed how Great Recession was connected to the Asian economies and its consequences to them compared to US. Greek economy in time of Great Recession is analyzed in chapter 7, presenting the sociopolitical status of the country and the instability provoked by the successive bailout programs in order to avoid possible default. Finally, chapter 8 contains the conclusions of the whole dissertation.

2. The beginning of crisis

The years before the Great Recession passed economically restrained but some reforms in legislation brought us to financial deadlock. The last crisis before the crash was not enough didactic.

2.1 The years after Great Depression in USA

Great Recession is a variation of the term "Great Depression" that stands for the crisis during 1930s with a GDP decline more than 10% and unemployment up to 25% (Calomiris, 1993).

After the Great Depression in 1929, a period of 40 years followed, with no financial crisis and an economical growth, while the Economic Industry was totally controlled. Most banks were small local businesses, while investment banks, which deal with stocking, were small private partnerships. For example, in 1992, Morgan Stanley had 110 total personal, just one office and a capital around 12 million dollars. Today, the same bank has 50.000 workers, offices in all around the world and a capital of several billion dollars. As long as they are invested with their own capital, they did not risk easily (Ferguson, 2010).

In the decade of 80s, the financial industry exploded. Investment banks went public, given them a huge amount of stockholder money. At the start of this decade, president of USA became Ronald Reagan, who started with the support by economists and financial lobbyists a 30-year period of financial deregulation.

2.2 Financial Deregulation and its consequences

In 1982, the government deregulated savings and allowed to companies to make risky investments with the depositors' money. By the end of the decade, hundreds of companies had failed, causing many people to lose their savings of a life. At the same time, many loan executives went to jail.

After eight years, the administration of Ronald Reagan succeeded this of George H. W. Bush, who maintained the model of financial deregulation, as well as Mister Alan Greenspan as the Chairman of Federal Reserve.

By the late of 90s decade, the financial sector consolidated in some big firms. This created a problem because in case that one of them failed, this could threat the whole system. Despite of them, the Clinton administration (1993-2001) helped this specific firms to grew even more (Ferguson, 2010).

2.3 The infraction of Glass-Steagall Act

In 1999, Citicorp and Travelers were merged, deforming Citigroup, the biggest financial services company in the world. However, this merger violated the Glass-Steagall act. Glass-Steagall act passed in 1933, preventing banks from investment activities with their depositors' money, distinguishing commercial banking from investment banking (Carpenter et al., 2016).

It was a measure, which aimed to prevent a repeat of the 1929 stock market crash. This -illegal- merger followed the Gramm-Leach-Bliley Act, which passed in Congress in 1999, repealed in a large grade the Glass-Steagall Act and clear the way for future mergers. At the same time, Jim Leach, one of the writers of the new Act supported that crisis would be more severe without it as it allowed commercial banks to take over failing investment ones (Crawford, 2011).

2.4 Dot-com Bubble

Dot-com Bubble, or Internet Bubble, refers to a stock market bubble that involves a rapid increase in US technology stock equity valuations promoted by investments in Internet-based firms from 1992 to 2002 (Goodnight and Green, 2010). The name came from the domain ".com" on the Internet address of those companies.

It is noted an exponential increase with the technology-nominated Nasdaq index increasing impressively from minus 1,000 to plus 5,000 during these 5 years. However, by the end of 2001, the majority of corresponding stocks that entered the bear market had collapsed, even for technological colossus, such as Cisco, Oracle and Intel that saw their stock decreasing more than 80%. Nasdaq recurred after 15 years, on 24 April 2015 (Hayes, 2019).

The failure of this venture was a consequence of without measure capital funding for startups, following the model of fad-based or speculative investing. These start-ups tried to grew fast but they did not have neither knowledge of the field nor success on their

history, investors trusted them blindly at the altar of profit. When valuations increased, cash dried up and the lack of business plan made them collapse.

3. Derivatives

Derivatives are complicated financial products, which played very important role in Great Recession in 2008. The time they appeared, their progress and mainly their regulation of use were key elements to the crisis.

3.1 The beginning of Derivatives

At the beginning of the 90s, the deregulation and the progress of technology led to an explosion of complicated financial products called derivatives or "weapons of massive destruction" as Warren Buffet characterize them. Using derivatives bankers could gamble on virtual anything. For instance, they could bet rise or fall of oil prices, the bankruptcy of a company even the weather.

The most important thing about derivatives, was the fact that they were unregulated. There was not act, which controlled them. This tried to succeed the president of the Commodity Futures Trading Commission (CFTC), Brooksley Born, in 1998, who pressed the Congress and the President to regulate Derivatives, but her warnings were dismissed. Indeed, on December 21, 2000, President Clinton signed the Commodity Futures Modernization Act (CFMA), which ensured financial products remained unregulated. At the same time, at the late of 90s, derivatives were 15 trillion dollars on unregulated market (Ferguson, 2010).

3.2 The procedure of Derivatives

As its known, when someone takes a loan in order to buy a house, he pays his mortgage every month and this money ends to lender. In this case, the lender is very careful about the financial ability of borrower because a home loan takes decades to be paid.

In derivatives era, lenders took a loan and then sold the mortgages to investment banks. The investment banks combine thousands of mortgages and other loans including car loans, student loans to create complex derivatives called Collateralized Debt Obligation (CDOs). The next step was to sold these CDOs from investment banks to investors. Now,

the home owners paid their mortgages and these money went to investors in all over the world. At the same time, investment banks collaborated with rating agencies in order to evaluate these CDOs, many of which took AAA, which is the highest possible investment grade.
CDOs as well as MBS, swaps, forwards, credit default swaps and options are different types of derivatives.

3.3 The bomb of CDOs and CDS

The above procedure converted CDOs in a bomb because lenders did not care anymore whether the borrower can pay the loan, so they started to make more risky loans. The investment banks, which sold them to investors, did not care either because the more CDOs they sold, the higher were their profits and the rating agencies, which in real paid from investment banks in order to give high grades on them, had no liability if their rating of CDOs proved wrong. So, CDS enabled market participants to short sell debt, ensuring the efficiency of credit markets (Jarrow, 2011).
At the same time, in the market progressed another bomb. AIG, the world largest insurance company, sold huge amount of derivatives, which called Credit Default Swaps (CDS). For investors, who owned CDOs, the CDS worked as insurance. An investor who bought a CDS paid AIG according a quarterly premium. If CDO went bad, AIG promised to pay the investor for his losses. But in opposite, speculators could also buy a CDS from AIG in order to bet against a CDO they did not own. Since CDS were unregulated, AIG did not have to put inside money to cover potential losses. Instead, AIG paid his employees huge cash bonuses as soon as contracts are signed. If CDS went bad, then AIG would be on the hook (Ferguson, 2010).
All above, had as result in period between 2000-2003, the Subprime loans increased four times. This happened because investment banks preferred subprime loans as they carried higher interest rates. This led to a massive increase in predatory lend. Borrowers were encouraged to take subprime loans too expensive to repay them. Therefore, although derivatives were created to increase liquidity, finally the deregulation of these complicated economic innovations brought the chaos. Banks continued reselling mortgages and CDOs on the secondary market as well as corporations to sell more asset-backed commercial paper.

4. The chronicle of the crisis

The American Dream made many people in USA to took loans in order to conquer it. What they underestimated at that time was the fact that they would never be able to repay them, causing a chain reaction that sank US and consequently the rest of the world to a long-term recession.

4.1 The US subprime mortgage crisis/The Housing Market Bubble

The foundations of the Great Recession seemed to had set in 2007 as banks and lending institutions started giving low interest rates on mortgages in order to live "the American Dream", as it was promoted from the US government. The result was that definitely anyone seemed to be able to own a home thus by taking a loan that finally could not pay off.

The bloom of housing-based economy was first noticed in 1990s until the recession in 2001. This bloom refers to home prices, that even were duplicated between 1998 and 2006, house loans and favorably house construction to satisfy the increasing demand with many expecting an increase from 6% to 15% in one year the years ahead (Case and Shiller, 2003).

This rise of prices would be expected due to increasing salaries and falling mortgage rates. Residential investment went from 4.5% of U.S. GDP in 1994 to 6.5% nine years later whereas occupational opportunities in that field reached 40% of the total new job chances. Householders proceeded to home mortgage loans and the relevant debt increased from 61% in 1998 to 97% only eight years later (Weinberg, 2013).

In U.S. the long-standing expansion of house market activity came to a peak in 2006. This period was called the Great Moderation and it finished in 2007 when house construction started decreasing until 2010.

The loans that were created due to the great demand and were called "Mortgage-backed securities"-MBS. However, these mortgage-based loans were in fact grouped together in order to be sold as securities with minimal risk as CDS (Credit Default Swaps) put the back as a credit. That means that these mortgage-packaged loans would easily be sold by lenders to people that they had no idea of their risk, taking also into consideration that regulations about underwriting were unclear so was the actual value

of these securities. So, no one would guarantee for their value but at the same time no one could accuse lender for deception.
MBS and CDOs at a first glance offered a higher interest rate, that means better returns than government securities, supported by ratings of negligible risk by the rating agencies. The weakening of household balance sheets diminished access to credit as house equity loans (Gertler and Gilchrist, 2018).
The risk of these mortgages was depicted from their illogical increase per year. In two years, from 2004 to 2006, they went from 8% to 20% with the interest rate of the 90% of them increased until 2006. The speculation was not hidden anymore: the share of investors in loan origination raised from 20% to 35% in years between 2000 and 2007.
Characteristically, so did the percentage of household debt to disposable personal income that climbed from 77% to 127% from 1990 to 2007 respectively.

4.2 Great Recession and US in numbers

The loss of output and income was estimated about 40% of GDP in 2007. U.S. GDP noted a decline of 0.3% in 2008 and 2.8% in 2009. In spite of the Great Depression that a great domestic product decline over 10% and an unemployment rate up to 25% were noticed. During the Great Recession, in US there was a loss of 9 million jobs during 2008-2009, approximately 6% of the workforce, a percentage that was corrected only in May 2014, so seven years later (Barello, 2014).
Net worth of American household reduced from 13 trillion dollars in 2007, a percentage up to 20% and recovered by 2012.
An average fall of 30% happened in US housing prices and one of 50% in US stock market by first months of 2009. Stocks recurred at the December 2007 levels only after approximately 5 years, on September 2012 (FRED, 2022). Great Recession affected US the most during the middle of 2007 until 2009.

4.3 Collapse of giants begins

In 16 March 2008, the 85-year-old brokerage firm, Bear Stearns, collapsed after the loss of billions in subprime loan investing. Its stock was undervalued at 30 dollars per share a few days before it is finally bought by JPMorgan Chase at the cut-rate price of $2 per share.

In 11 July 2008, a new collapse occurs when IndyMac, a mortgage lender that includes Countrywide Financial and its assets are seized by the American government. However, the economic consequences were severe and 4000 people lost their job (Ferguson, 2010).

In 7 September 2008, US Treasury took over the management of “Fannie Mae” which constituted from Freddie Mac and the Federal National Mortgage Association. These entities were the guarantors of the 80% of US home loans, attracting investors to the secondary market. Nearly half of them, 30%, were undervalued, thus the total mortgage loan was more than them, at the time of acquisition (Stiglitz, 2002).

In 15 September 2008, the colossal brokerage firm, Lehman Brothers, announced the biggest bankruptcy case in American history with a debt up to 619 billion dollars. One day later, the American government announced a rescue program for the insurance company, AIG, paying 85 billion dollars for 80% of AIG’s assets. AIG was a big company and a possible collapse would threaten the whole financial system in America.

4.4 Troubled Asset Relief Program and Bank Bailouts

In 3 October 2008, TRAP (Troubled Asset Relief Program) is signed into law by President Bush. There was an effort for restoration of confidence in the credit markets by committing 700 billion dollars in federal taxpayer funds. These funds were used to purchase mortgage-backed securities and other assets from struggling financial institutions.

In November 2008, the American government announced another bailout program, after the collapse of Lehman Brothers, Bear Stearns and Washington Mutual Inc, this time for Citigroup as it seemed that it could not offset the mortgage related losses in order to regain trust to economic system.

In December 2008, the competitor auto industries, General Motors and Chrysler, received a combined 80.7 billion dollars TARP fund to remain functional and not proceed to layoffs.

In 16 December 2008, there was a reduction in the short-term interest rates to the historical 0% by the Federal Reserve. This reduction came gradually in order to encourage lending for house sales and capital investment.

The rescue programs continued, with second largest bailout by the government during Great Recession, in 16 January 2009.

In 18 February 2009, new elected American president, Barack Obama, approves a 787 billion dollars stimulus package. This package includes tax cuts (400 dollars for individuals and 800 dollars for couples) as well as money for infrastructure, schools, health care and green energy (National Archives and Records Administration, 2016).

Table 1: The ten first and out of the biggest bank bailouts in the Great Recession; Data by "CNNMoney"

Financial Institution	**Amount**
JPMorgan Chase &Co.	$25,000,000,000
Citigroup Inc.	$25,000,000,000
Wells Fargo & Co.	$25,000,000,000
Bank of America Corp.	$15,000,000,000
Goldman Sachs Group Inc.	$10,000,000,000
Morgan Stanley	$10,000,000,000
Regions Financial Corp.	$ 3,500,000,000
Bank of New York Mellon Corp.	$ 3,000,000,000
State Street Corp.	$ 2,000,000,000
UCBH Holdings Inc.	$ 298,737,000

Note: Author's compilation

4.5 The "end" of crisis and the next day

In October 2009, the 4 biggest American banks gave the sign of not lending: Citigroup, Bank of America, JP Morgan Chase and Wells Fargo. Lending diminished to 15% whereas loans from these four plunged by 100 billion dollars less for loans.

Totally 350 billion dollars were spent for bank bailouts, provoking public protest. People accused banks for greed and decisions favorable only for their executives. The main argument was that if banks collapsed, then will deleted the worthless assets.

Another reason for public's protest was the record of unemployment that reached 10%, the biggest since 1982. In just one year, 6 million jobs were lost but the main concern was the increase of part-time unemployment because of the insecurity that employers had.

In 2010, in Obama administration, passed by US Congress, the Dodd-Frank Wall Street Reform and Consumer Protection Act. This act aimed mainly to control the financial system industry in order to not happen again a similar crisis like the Great Recession. From many economists, this legislation followed the repeal of the Glass Steagall Act, which allowed banks in USA to merge and create larger institutions. With the new act, the government had again power to control financial institutions, which were in danger.

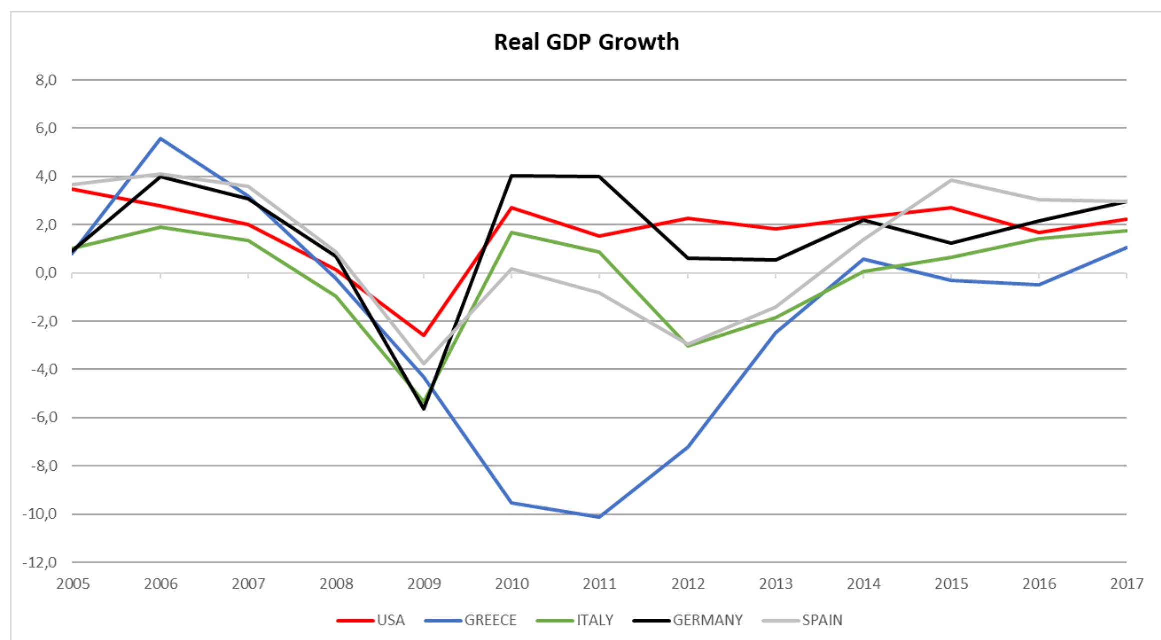
5. Great Recession and the rest of the world

In political world, there is a popular phrase said that "a good crisis should not go to waste". History seemed to be on repeat as weaker and smaller EU economies were again in great danger.

5.1 Real GDP Growth

First of all, we can examine the route of the Real GDP Growth in four countries in Europe, Germany, Greece, Spain and Italy and in second face we can compare it with United States' Real GDP Growth. Figure 1 will help us in this.

Figure 1: Real GDP Growth of US, Greece, Italy, German and Spain; "Data by fred.stlouisfed"



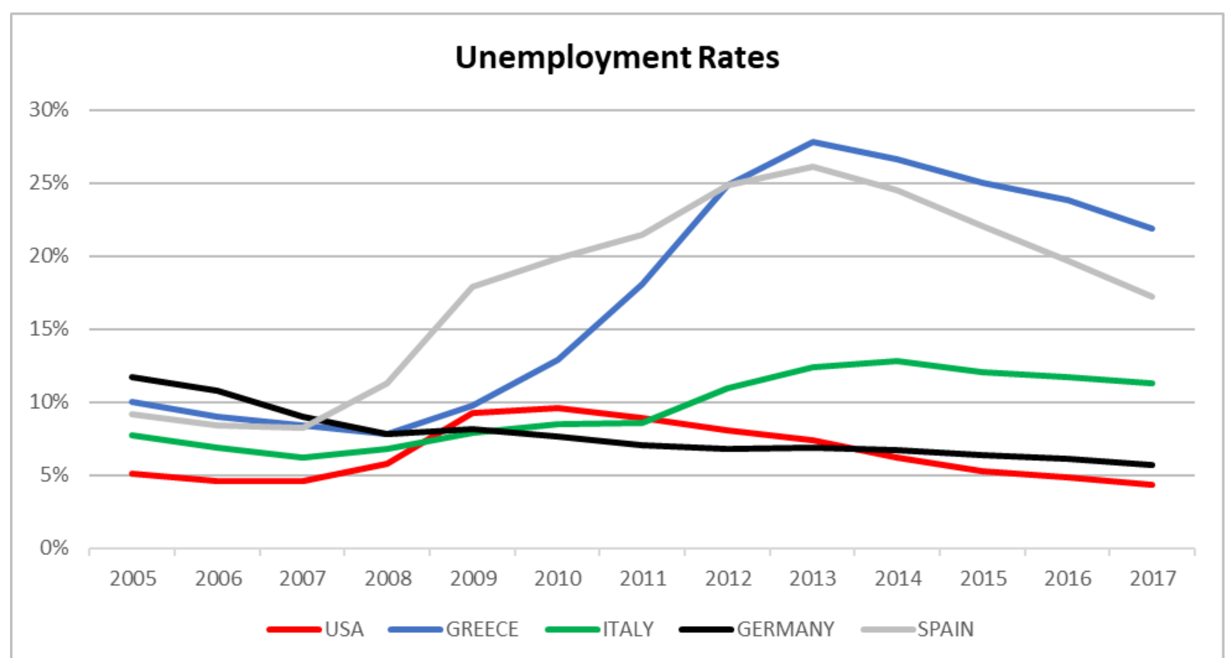
Note: Author's compilation

In figure 1, with red colour is the GDP's of United States, with blue its Greece, with green is Italy, with blank is German and with grey is Spain. As we can see, in 2006, so Spain and US had a real GDP around of 4.0%, while Greece, Germany and Italy presented a percentage around 1.0%. The next three years followed a vertical drop for all countries, which is a logical scenario because in period between 2007-2009 we were in the explosion of crisis with result countries to stop produce in big rates. The next two years, countries managed to increase their percentages, except of Greece, which GDP's percentage increased from 2011 and then. However, Italy and Spain, two big countries, faced difficulties in their try to get over the crisis, both of them presented negative Real GDP growth until 2014. However, both of them in 2016 overdid the zero, while Spain's Real GDP exploded in 4.0%, bigger than the other four countries (Author's analysis).

5.2 Unemployment Rates

In a crisis, a factor, which is affected in a big grade is the unemployment and especially among young, low-skilled minority workers (Elsby et al., 2010). In Great Recession, in one of biggest crisis in the world, many people lost their job and especially in Southern countries like Spain, Portugal and Greece. In figure 2, we see the unemployment rate of five countries, Spain, United States, Germany, Italy and Greece.

Figure 2: Unemployment Rates of US, Greece, Italy, German and Spain; "Data by fred.stlouisfed"



Note: Author's compilation

As wee see in figure 2, in Spain the unempleyment rate reached in very high percentages, in 2013 the unemployment in Spain was aroun 25.0%. Similarly, in Greece the percentage of unemployment rate reaced near to 30%. Also, in Italy many people lost their jobs with the unemployment went from 8.0% to 13.0%, while in United States, the unemployment rate doubled from 2006 until 2010. In opposite, Germany, from an unemployment rate around 12.0% in 2006, the years of crisis this rate decreased (Author's analysis).

5.3 Fiscal Response

On the one hand, France and Italy had as major principle the rise in taxes so as to increase thein inland (government) revenue rather than trying to reduce government expenses. In fact, the two third of measures that had been taken by the end of 2014 were kind of increasing revenues and only one third was about lowering spending. However, higher taxes and higher spending led them to higher borrowing at the same time.

On the other hand, UK focused mainly on cutting public expenses and by the end of 2014, 82% of the measures taken were of that kind. Therefore, UK was on the way to borrow less, keeping similar levels of taxation as pre-crisis ones and cutting expenses in order not to throw the ball only to their taxpayers, as other countries did. Cross sectional variation in GDP in advanced economies corresponded at a rate up to 75% to cross-country differences in austerity measures (House et al., 2020).

5.4 Distribution of spending

Another thing that is of great importance, is the way that each country selected to distribute the public money. In particular, UK, France, Ireland, Spain and Italy selected to heighten social insurance distributions and VAT rates (Value Added Tax). Moreover, individuals with great incomes became a target, especially in UK, France and Spain, and were incurred income tax rises. Reduction of corporation tax rates and widening the base for this type of tax were another life raft.

Outgoings for health and Education field had been protected in France and UK whereas these field were cut back in Italy and Spain. However, Italy and Spain, as well as France,

maintained contactless welfare benefits for working age adults whereas in UK and Ireland these cuts were of pressing importance.

Another sector that was a variety range in administration was the type of households that were affected the most. Tax and benefit reforms affected more pensioners rather than households with kids in Italy and the opposite was valid in UK and Ireland (Kolev, 2012).

5.5 The lesson of the crisis

Each crisis has its beneficial side with a chance to cover insufficiencies, functional changes and serious adjustments accordingly to the needs of society and history. This fiscal crisis seemed to be a missed opportunity because many countries running deficits in excess of 2% of national income and a high stock of government debt that rise until 2014 when it reached 87% (Szczepanski, 2019).

UK's decisions, indeed, changed the VAT application, excluding some fields of economy such as type of food supplies and children clothing. That led to a cascade with many firms started being active in the VAT-free sectors of economy and consequently consumers tended to prefer VAT-free products. That differences and distortions deteriorated by the rise of the main rate of VAT. UK proceeded to further modulations in income tax schedule by introducing/applying a transferable tax allowance for married couples and the reduction of child benefit in case of high-income parents.

In France, instead of decreasing the high employer social security contributions, financially responsible, introduced the new corporate tax credit.

In Ireland, instability became more tense with consecutive reforms in VAT and a continually increasing capital gains tax from 20% to 33% since October 2008.

5.6 The problem with the default

Default for an overcharged country might seem an easy solution but it has major consequences both for the country itself and for its creditors and the whole world generally in a domino way. First of all, European banks continue keeping the region's government debt (although they reduced their positions in the second half of 2011). Moreover, Banks have to hold an amount of their assets on their balance sheets, respectively to the debt of their country. Value of country's bonds would dive and their

assets would be automatically in danger, giving an insolvent figure. Taking, however, into consideration the global economic system and the interconnection of the banks, the breakdown of a bank would easily activate the domino effect for other banks worldwide at the same time. This does not depend on the size of the country or its economy. The best example for this, is the failure of smaller financial institutions that led to the collapse of the Colossus in global financial services, Lehman Brothers.

5.7 The global impact of European financial crisis

The US economic crisis that started to expand in 2008 was fresh in memory, so investors had a certain methodology in a possible domino collapse in Europe too. They advised to sell anything risky and purchase bonds of the largest and financially safest governments. European stocks performed lower levels than these of American counterparts and the same was observed in bonds of countries that suffered economically. However, yields on American bonds also historically plunged.

This downfall was completely overturned when Mario Draghi, the president of ECB from 2011 to 2019, committed that ECB would do anything possible to preserve Eurozone.

6. Great Recession and Asian Economy

Asian economy and especially China experienced a significant drop in exports and a general financial recession of the same extent as in USA but with the main difference that China sustained growth. That means that China was not isolated and instead was truly affected by the crisis of 2008 but in a way of braked growth and that was exactly the point of other countries' envy.

6.1 China as the most characteristic representative of Asian Economy

The period between 1978 to 2010, China's GDP increased from 1.7% to 9.5% of the worldwide economy and it would be even higher if adjustment in prices of purchasing power was applied. This lack of adapting led to a general undervalue of exchange rate and the incomes of developing countries as well as it was emphasized by the differences among traded and nontraded products.

In the last three decades, China's high GDP contributed in the allocation of economic activities worldwide. It is the second largest economy after US and passed even above Japan. Consumers prices affected the most and were reduced due to the increase of Chinese exports (Wen and Wu, 2014).

Particularly, since 1970s Chinese trade noted a duplication even every four or five years, reaching in 2010 to be the first exporter globally, expelling Germany from the top and leaving US in the third one, with a worth up to 1.5 trillion US dollars. Similarly, China was countable in imports too. China in 2010 was in the third place of importers, something that was counted at about 1.3 trillion US dollars.

In basic analysis, the main sectors of its import activity were electric machinery, medical equipment, oil and mineral fuels plastics and organic chemicals. On the other hand, its exports referred to consumer goods, apparel, data processing equipment and the most interesting one: the intraindustry trade with many spare parts and components to be exported (Li, 2012).

However, China's tactic lowered consumer prices with a global cost that is called "unfair competition". Producers from the rest of the world, especially in America, protested and they asked for government protection.

In US Congress, China's huge bilateral surplus with US came to the center, even it created an overvalued global imbalance that was expected due to the rising competitiveness of China economy. For instance, in China bilateral deficits are presented, while several Asian economies provide inputs to its firms that export. At that time, also, multinational corporations around the world supports the exports of China (Arias and Wen, 2015).

China's strong stimulus package during the crisis led to the rise of import demand and was determinant prop for global commodity prices.

6.2 Secondary effects

Although China maintained a growth rate, up to 9.6% in 2008 and 9.2% in 2009, that does not mean China did not have losses from the crisis, bearing in mind that its growth rate dropped from 14.2% in 2007.

To the point, many financial institutions, mainly in Europe had invested in securities that was intervened with US real estate market. In order to avoid great losses in the period

of its collapse, there were huge capital outflows from emerging market economies. What differentiated China, India and other Asian economies was the fact that it did not base its economy in these contemporary profits (Bown, 2011).

As we saw in Table 2, it is noted a decrease of FDI in China at the beginning of the financial crises, but later on it was rebounded to the level before the crisis. China's FDI noted a decrease up to 15% in 2008 (121.68 billion dollars) and 42% in 2009 (70.32 billion dollars) but increased again in 2010 (124.93 billion dollars).

Table 2: Change of FDI in Chinese economy due to Great Recession; Data by "Li et al, 2012"

Year	2005	2006	2007	2008	2009	2010
China	105,9	102,92	143,06	121,68	70,32	124,93

Note: Author's compilation

6.3 The gradual downfall of Chinese stock market

However, the optimism that led China to a fivefold stock market boom between 2005-2007, gradually faded beating China in an indirect way as there was no mood for taking economic risks and not the same economic outlooks.

More particularly, Chinese stock market faced a crash in October 2007, reducing its market value by two thirds. That gave the impression that having savings in a bank is not so secure as investing, for example in the developing real estate market at that time.

However, as the size of the crisis was underestimated, it was believed that emerging economies and developed ones were not gonna be affected in an extended way and that these type of financial market, emerging versus developed, were practically decoupled. What had not been estimated was that since the crisis beats the advanced economies, demand and imports would be striken too. China's exports faced at that time a direct threat. That was depicted by the reduction of its exports growth rate in just one month. From October to November in 2008, this rate was reduced from 20% to -2.2% and it fell more about 19% until 2009. Since 2010, it started rising again and GDP growth reached to 10% but the development of domestic market of China had the keys to the long term survival of Chinese economy (Li et al., 2012).

6.4 The limited impact of Great Recession on China-The decoupling view

China was encouraged enough by the fact of its survival and at the same time, the fact that it had increased its impact, as well as India and Brazil, made it underestimate the impact that the recession of advanced economies would have back to the emerging ones.

The growth rate and more specifically the rate that would otherwise have been is the proper way to measure how developments have an impact on the economic growth rate of a country.

Table 3: Deviations of GDP growth from the trend for China, India, and the US: Data by "Li et al,2012"

Year	China	India	US
2006	0.3	-0.2	-0.2
2007	1.2	-1.9	-0.7
2008	-3.4	-5.2	-2.5
2009	-4.4	-7.5	-5.7

Note: Author's compilation

Li et al (2012), investigated the fact that economies like Chinese and Indian stood that crisis by making a very interesting observation: the shortfalls of GDP growth of China and India below the trends of the past do not present many differences to the ones for the United States itself.

Economic interdependence is a two-way street. That is depicted numerically by the fact that for both 2008 and 2009 reduction in Chinese and American growth rate were almost identical: 7.8% and 8.2% respectively. For instance, in 2008 the deviation from China's growth rate was -3.4% whereas US rate was -2.5% but in 2009, deviations are reversed.

China's exports constitute about 40% of its GDP, so it is reasonable that Chinese economy depend roughly on western demand. That means that what makes a surprise is that Chinese growth rate remain high during the crisis despite their reducing high rate.

7. Greece and the Great Recession

Greece was one of the most affected economies during Great Recession. As Greece faced major financial issues before its entrance to the Eurozone, after that Greece became fully dependent on the European and IMF funds in order to repay its debt.

7.1 Greek expectations from a possible entrance to the Eurozone

Before its entrance, in 1980s, despite the expansionary fiscal and monetary policies, that Greek government followed, Greece noted soaring inflation rates, high fiscal and trade deficits, issues with exchange rates and low national production.

Another main sector in which Greek economy suffered was the tax evasion that led to a large tax revenue loss. Moreover, the fact that Greece had reduced largely the production of domestic goods, making Greece less productive and competitive.

All the above were misquoted in order to gain its entrance according to some researchers because at that time the entrance in European Monetary Union (EMU) seemed to be a life raft for the Greek economic status. Specifically, it was believed that the single currency would diminish the losses that occurred from exchange rates, named transaction costs, putting away more money to cover needs and the debt. After all, EMU would offer Greece a sensation of security as EMU was supported by European Central Bank (ECB). So, minimization of inflation, lower nominal interest rates, encouraging production rates and investment were expected (Kotios et al., 2011).

7.2 The road to the EMU

Greece had to adjust to the Maastricht Treaty guidelines, the founding treaty of the EMU that was signed in 7th February 1992 in Maastricht by representatives of 12 European countries, in the presence of the President of the European Parliament, Egon Klepsch. This Treaty had as a purpose to invigorate the cooperation and strengthen the relationships and the common vision of the European members. The first pillar that was established was the European citizenship, the common foreign policy and security policy, as well as the pilar that concerned to justice and internal affairs. This Treaty set

the foundations for creating a common currency, euro, founding the European Central Bank as well as the European System of Central Banks.

It also laid down the requirements that a country has to fulfill in order to join the EMU. These requirements, called the Maastricht criteria or convergence criteria, had as a purpose to ensure the price stability as new countries adopting euro.

7.3 The entrance of Greece in the European Economic Community and Eurozone

Greece entered the European Economic Community as the tenth member, under the leadership of Prime Minister Konstantinos Karamanlis, the first one after the ruling military junta. The EEC was established by the Treaty of Rome in 1957 as a free trade area, called "Common Area", being the precursor of European Union. In 1992, the total of twelve members of EEC signed the Treaty of Maastricht (European Central Bank, 2017).

In 1999, the launch of the common European currency, euro, took place in 11 EU countries but Greece was not included.

Greece entered the Eurozone in 2001. This movement according some would bring Greece earlier in front of an economic crisis or according other would be a solution in some structural issues, that Greece already had, having drachma as currency.

Greece's admission into the Eurozone gave the trigger to the economic world that common currency unites European members and eliminates economic differences between them. It was much more a decision of entrance, it was a station movement, a declaration of European unity. Automatically, banks and investors started to consider Greek economy as a safe place to invest. Greek interest rates of debt lowered and even was similar to the German one during 2000s. This allowed Greece to borrow at a cheaper level than before 2001 and its entrance to EMU and increasing its spending.

However, Greek economy seemed to grow, sweeping under the carpet the deep-seated economic issues that had even before its entrance. Some assumed that excessive expenses were a major cause while others, as mentioned above, accused tax evasion and the resultant lack of revenue. Incomes were under-reported, dept payments were over-reported and this social norm started to be normalized.

7.4 The real competitiveness gap

Despite the use of common currency, fundamental structural issues that Greece faced started to come to the surface. Greek productivity remained low, while productivity and competitivity of other European members as Germany, remained at a high level. This made German products, for instance, seemed cheaper, German exports to Greece were increased, German and not only banks benefited from Greek loaning in the long-term to finance cheap imported German goods or services. Greece could not devalue its own currency to the German one as it was common and that led to destabilization of Greek trade balance and the increase of its current account deficit. Besides, Greek economy follows a free-market economic system whereby market participants affect prices and government has no significant margins of involvement. During 2001-2008, the current account balance of Greece decreased from -7% of GDP to -15% of it respectively (Ozturk and Sozdemir, 2015).

7.5 Olympic Games in 2004

The hospitality of the summer Olympic Games in 2004, costed over € 9 billion. Public borrowing was increased and consequently deficit reached 6.1% and debt-to-GDP ratio to 110.6% in 2004. Fiscal monitoring of Greece by the European Committee was a matter of time and started in 2005.

7.6 U.S. Financial Crisis & Greece

The bubble of house market and mortgage-based loans fell apart in February 2007 and strayed global economy and credit system through 2009, leading to collapse the leading financial Colossus, Lehman Brothers, and an excessive bailout of banks by governments in the whole world. Borrowing cost was continually rising, funding to Greece was reducing and it started having great difficulty in corresponding to its debt.

7.7 Greek Financial Crisis and Bailout

This deficit became bigger when the financial crisis in 2007 started to become global. In 2009, Georgios Papandreou was elected Prime Minister with a budget deficit reaching 15.4% of country’s GDP, twice times over than expected.

In early 2010, U.S. financial rating agencies characterized Greek bonds as “junk” ones, spiking Greece’s borrowing cost. Funds started to dry up and liquidity was in direct threat. That pushed Greek principles to seek for rescue funding, called “bailout”. With the evolution of the International Monetary Fund (IMF) and other European creditors, Greece was given a bailout of €289 billion that concerns cut of expenses and tax revenues reforms.

Under the fear of default, 10-year bond had been spread. Greece had to increase exports, lower trade barriers and reform of its pension system as pension payments conquered 17.5% of GDP, the highest percentage in Europe. So, they had to be cut off by 1% of GDP with public pensions being underfunded at 9%, high level compared to other European countries. Pension reform measures were also to limit early retirement, since 50% of households relied on pensions and 1 out of 5 Greek people were over 65 years old, as well as higher contributions from pensioners and other workers as well. Moreover, electricity transmission had been privatized.

It seemed that Greece would use new funds given just for paying the old debt. This provoked dissatisfaction mainly to smaller European economies, such as the Lithuanian and the Slovakian one, that had just avoided bankruptcy as well and without EU contribution. Greece took 110 billion in loans over three years, 80 billion euros from EU (22 billion from Germany). In 2009, Greek budget deficit was announced at 12.9% of its GDP, four times higher the 3% which is the European limit. Greece’s credit ratings were lowered by rating agencies so cost of future loans went higher.

7.7.1 The second bailout of Greece

This second bailout came in 21 February 2012, a worth of €130 billion, including a debt write down or “haircut” of 53.5% for private Greek bondholders. By 2012, bondholders exchanged 77 billion euros in bonds for debt worth 75% loss. However, Greece committed to decrease its debt-to-GDP ratio from 160% to 120.5% by 2020. Debt restructuring was completed in 9 March 2012 and it is recorded as the largest one.

Unemployment reached 25.7% in 2012 but the youth one reached 50% and a vicious circle of economic and social recession was about to begin and last, leading to the implosion of Greek economy and society as well with the increase of suicides,

homelessness and cuts in quality of public health provided. The cost for avoiding default was constantly increasing.

In 2 March 2012, EU members, except for United Kingdom and Czech Republic, signed a fiscal compact in order to ensure stricter budget discipline in EU governments by maintaining a deficit under 0.5% of GDP (CFR archive).

Meanwhile, in Greece public continued supporting fringe parties, disapproving EU-IMF bailout programs. However, the election of a centre-right party and Samaras' premiership committed Greece to the European rescue program.

ECB President, Mario Draghi, announced a program, with no timeline, according to which government bonds from struggling European economies on the secondary market would be purchased in order to preserve the stability of euro.

In 27 July 2012, Greek bailout program was revised with a deal of lower interest rates and a debt-buyback program so by 2020 its debt-to-GDP ratio reached 124% and its debt much lower than 110% by the end of 2022.

In 17 July 2013, Greek Parliament approved new thrift measures that Europe insisted on so as the bailout continues with a dose of another 7 billion euros. The cost that had been paid was severe. About 25000 public employees were fired, tax reforms, budget and wage cuts had also been decided.

7.7.2 The third bailout program for Greece - Destabilization has no floor

Despite the rejection of new austerity measures that Greek public shouted in the referendum of 5th July 2015, the fear of a possible exit of the Eurozone dominated. New fund up to 86 billion euros was on its way, the third bailout program at a row since 2010, and Greece experienced again political and social destabilization. But EU reduced its net present value by lengthening the terms of accordance. This fund came in August 2015 and set to be distributed through years by 2018 with the IMF absent from this initiative until significant debt relief was succeeded. In exchange for this fund, Greek government must take measures as cut public expenses, privatize state assets, tax and labor law reforms. The debt remained invariable but could be paid for longer (CFR archive).

In July 2015, Greek people with a referendum voted against additional austerity measures that EMU wanted to impose.

An emergency EU fund of 7 billion euros on 20 July 2020 allowed Greece to pay. United Kingdom asked for guarantee from other EU members to continue supporting this bailout program.

7.8 Greece returns to bond market

In 10 April 2014, after about 4 years of no bond issue, Greece returned to financial bond markets with the first issue and it gained 3 billion euros in 5-year bonds with initial yield under 5%, a low one. Economic growth of 0.7% was noticed. However, the regained trust seemed from the fact that the offer as up to 1 billion euros more than expected. However, according to Eurostat, half of Greek citizens lived below the poverty line in the same period.

In 22 January 2015, ECB started a quantitative easing program of 1.1 trillion euro, aiming to purchase 60 billion euros in financial assets as government bonds but Greek ones were not eligible.

7.9 The function of Greek banks is in danger

In November 4 Greek biggest banks gathered 14.4 billion euros in order to cover bad loans and continue being open and functional although half of their loans were at the limit of non-repayment. Bank investors wanted to involve at that time as creditors giving that money in exchange for the 86 billion euros from bailout loans so Greek economy shrank only about 0.2%. However Greek banks were continually losing money.

Bank of Greece in 2016 made the prediction that by the summer of this year, growth would be noticed.

They were reluctant to call in bad debt, expecting that borrowers would repay once economic improvement would occur. However, they did not estimate that these financial resources could have been utilized in an attempt for new ventures.

On June 17, EU's European Stability Mechanism disbursed 7.5 billion euros to Greece, that possibly would had been disposed to pay interest on the debt. Privatizing companies and selling off nonperforming loans continued.

7.10 The road to the Greek recovery

2017 was the first year after 2014 that Greece was able to issue bonds. 2018 meant the exit from the last bailout program, the beginning of tax reduction and the election of a new Prime Minister.

The real purpose of bailout programs seemed to be just the collateral that Greece's creditors would be paid back rather to be a pebble in Greek economic bloom. Besides, the structural issues and the corruption that Greek economy faced could not be fixed neither by European membership nor by the "rescue" methodology that European creditors used. This cascade of economic decisions and deals seemed possibly being a type of deal between Greece and EMU in order each to reach its economic expectations and plans. Greece missed €1.6 billion payment to the International Monetary Fund (IMF), defaulted on its debt in 2015. By 2019, Greece had only paid 41.6 billion euros.

7.11 Greece does finally the math

Totally, the Greece's lenders with the corresponding sums are mentioned below in table 4.

Table 4: Greece's lenders with their corresponding sums of loan after all cuts and bailouts; Data by "Amadeo"

Lender	Sum of funding
European Financial Stability Mechanism and European Stability Mechanism	168 billion euros
Eurozone governments	53 billion euros
Private investors	34 billion euros
Greek government bond holders	15 billion euros
European Central Bank	13 billion euros
International Monetary Fund	12 billion euros

Note: Author's compilation

Now, let's take a look, more analytically, which countries own the Greek debt.

Table 5: Creditors countries of Greek debt; Data by “Open Europe, BIS, IMF, ECB”

Country	Sum of funding (EU bailout loans & Domestic Banks)
Germany	68.2 billion euros
France	43.8 billion euros
Italy	38.4 billion euros
Spain	25 billion euros
Netherlands	13.4 billion euros
US	11.3 billion euros
UK	10.8 billion euros
Belgium	7.5 billion euros
Austria	5.9 billion euros
Finland	3.7 billion euros

Note: Author’s compilation

7.12 The remain of Greece in Eurozone. A deal between two parties

The truth is that apparently, without EU measures, Greece would have converted its euro debt in drachma, printing more currency and lowering its euro exchange rate. Without the debt and its doses, economic growth and job positions would occur, reducing a major of its problems: the unemployment and mainly the youth one and the resultant brain drain. Cost of exports would be reduced; Greek tourism would be more attractive.

However, with a second reading, as owners of Greek debt were foreign people, they would face significant losses as drachma plummeted because of the undervalue of their payments in their own currency. So, the basic owners of Greek debt, European governments, would have to press down and be accountable to their taxpayers, who would finally pay the bill. This undervalue of drachma would cause hyperinflation and maximized cost of imports, grown impressively in numbers. Indicatively, food and pharmaceutical sector in Greece were 40% imports whereas energy one was up to 80%. However, many companies were reluctant to make exports in Greece because they considered Greece as insolvent, exactly the same with possible investors, except for China and Russia. This would touch off a cascade for other indebted economies that

would face higher interest rates and think of leaving euro and well-wishers as currency traders or even rating agencies informally would bet against euro.
The bankruptcy of Greek banks would threaten in general the solvency of banks all over Europe, mainly in Germany and France that held about 34.1 billion euros of Greek debt. However, for these large economies, Greek debt was only a small percentage of their GDP, so smaller EU countries had the major problem to face, for example for Finland it was 10% of its GDP.

7.13 And now… sequel to be

According to the World Economic Outlook of the International Monetary Fund in October 2022, the cost-of living crisis is not over. Russian's invasion to Ukraine and the long-term consequences of COVID-19 pandemic make the future gloomier. Economic activity worldwide is yet in slow motion and inflation remains at the highest levels of the last decade. In numbers, inflation worldwide is about to increase in 8.8% in 2022 from 4.7% in 2021 and it is predicted that it will reduce gradually by 2024 and then. Growth is about to decrease from 6% in 2021 to 3.2% in 2022 and 2.7% one year later. Historically, except for the acute period of COVID-19 pandemic and the Great Recession, this is the weakest growth status all over the world since 2001. Europe's piece of global GDP as reduced from 32% in 1970 to 23% in 2010 and could fall even to 9% until 2050, plunging the geopolitical and financial influence of North America and Europe (Janse, 2016). Even if this situation is the continuity of the Great Recession or just a sequel, we discuss for sure about a world that swirls again in the shadow of a crisis. Maybe the only way to take a safe step ahead is to take a better look behind.

8. Conclusions

The present dissertation aimed to investigate the true facts around the Great Recession. This economic decline was chosen because it is the last and most significant economic crisis in the postwar history. It is a subject that is extensively analyzed in literature review but nowhere can be found a deeper glance of its chronicle presenting data from different countries, connecting them and emphasizing consequences in Greek economy and in Europe until now. This study is qualitative, combining scientific data from reliable bibliographic sources, case studies, articles, official records, surveys, books and documentary films.

The results showed the true origins of the Great Recession, its avalanche and consequences from US to the whole world as well as its implications so far. US system with its financial innovations, such as derivatives, promoted risky economic movements. By exploiting the "American Dream" deceived American taxpayers and American bubble burst out. US stock exchange house along with giant companies collapsed and that was the beginning of incalculable consequences in Europe and all over the world. Fact showed that US speculators had the responsibility of this avalanche and numerical results showed that US stock prices, GDP and unemployment rates were the first to precipitate before this decline spread in Europe's results too. At the same time, Asian Economies, such the Chinese, noted growth, even slowing down. As it is presented, Asian economies had a more flexible and autonomous financial system, based on exports rather than imports and mainly an economy that could run bailout programs for itself. On the contrary, Europe and especially Greece, were in mercy of US fund. European and Greek unemployment rates and inflation climbed at historical numbers and Greece and other European countries started a vicious cycle of taking bailout program one following the other, ending up spending these money in order to pay their debt interest and losing the absolute dominance in making decisions for their own country. Greece, Spain, Italy and Portugal were the most affected European countries. For Greece, the informal supervision did not come to an end but the worse is that data from World Economic Outlook did not give us hope that we are in a development trajectory.

About the above results, further research is possible and recommended as it included some limitations. Not all European countries were analyzed and the dissertation was based on a qualitative method. Future researchers could investigate how Great Recession affected countries that are not mentioned in this dissertation. Moreover, it would be interesting to run a quantitative study comparing specific financial factors between two European countries or a US state and a European country in order to compare the time and the extent in which each country was affected. Finally, it would be interesting to present a crisis like this through macroeconomic indexes that were possibly omitted here.

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