ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΙΡΑΙΩΣ

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Thesis: *Causes of the recent W-Shaped recession in Greece.*

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Contents

1. **Abstract**…………………………………………………………..**p. 3**

1.1. Introduction……………………………………………………..**p. 4-5**

1.2. The interpretation of W-shaped - Definition Economic Crisis.. **p. 6-8**

1.3. The beginning of the Crisis…………………………...….....**p. 9-13**

2. **The two Phases of the Greek Crisis.**

2.1. The Crisis in Greece in 2008-2009. The causes of the first deep Recession.…………………………………..……….**p. 14-19**

2.2. The critical period - Horizon measures for emerging the Crisis became a boomerang for the Economy………..…………….**p. 20-22**

2.3. **The critical year of 2014.**…………………………………**p. 23-27**

2.4. **The phenomenon of W-shaped Recession in Greece.**...…**p. 28-29**

2.5. The Causes of the second deep Recession. The continuation of the Crisis……………………………….**p. 30-36**

3. **Econometric Analysis**………………………………………**p. 37-41**

4. The Crisis in Ireland.……………… …………………..……**p. 42-49**

4.1. Ireland from Crisis to Growth……………………………..**p. 50**

4.2. Greece versus Ireland……………………………………......**p. 51-53**

5. **Conclusions**……………………...…………………...…..**p. 54-55**

References…………….………………….……………….………**p. 56-58**

ABSTRACT

We look into the available macroeconomic figures about the recession in Greece. After our Econometric Analysis, between 10 Eurozone countries the thesis compares the recent economic crisis in Ireland with the much larger and still on-going crisis in Greece, traces the Causes behind their differences and assesses each country's future economic prospects. Greece reduced its fiscal deficits, yet, after its economy stabilized and began recovering in 2014, it suddenly adopted in 2015 a very backward looking confrontational strategy with its lenders, which brought a second recession. In contrast, Ireland signed its MoU with the Lenders and subsequently delivered quickly on the program requirements. Today in 2017, Greece, after having lost over 22% percent of its pre-crisis income, has not yet escaped its crisis, is still burdened by economic stagnation, an unsustainable public debt and unusually high tax rates that constrain growth. On the other hand, Ireland has managed to keep its Global comparative advantages and has the luxury to focus on its long-term growth strategy.

1.1. Introduction

In this thesis, we provide a theoretical analysis of the Greek Crisis and the Causes of the recent W-shaped recession in Greece. The purpose of the thesis is to highlight the real problems of the Greek economy, to present the phenomenon of W-shaped and through an econometric study compared with other Eurozone countries to show how Greece can return to growth.

First, in the Chapter 1 we explain how the Global Crisis spread to Greece. Then, in Chapter 2 we analyze the crisis in two phases and we explain the reasons. In this Chapter we present the phenomenon of ***W-shaped recession*** in Greece and when it appeared. Furthermore, we expose the course of the Greek Economy over the time until today.

In Chapter 3 we present our econometric analysis, which studied 10 Countries of the Eurozone. We will draw important conclusions about how a country achieves to return to growth through Investment. In the study sample including Greece and Ireland. This Econometric Analysis aims to a comparative analysis between the economies of Greece and Ireland specifically in Chapter 4, based on the hypothesis why Ireland deviated from its route with a particularly high degree of development while both Greece and Ireland had a similar starting point as to their macroeconomic characteristics.

The key issues of investigation are: the macroeconomic and social characteristics of Greece and Ireland and their respective similarities and differences, the contributing factors which differentiated the economic and business environment of the two countries, the position that Greek and Irish economies hold so that competitiveness, entrepreneurship and innovation indicators can be compared, the policy measures and the relevant experience of Ireland so that Greece can exploit them to its own advantage.

1.2 The interpretation of W-shaped.

<u>**What means *W-shaped* Recession?**</u>

In a ***W-shaped recession***, (also known as a **double-dip recession**), the economy falls into recession, recovers with a short period of growth, then falls back into recession before finally recovering, giving a "down up down up" pattern resembling the letter **W**.

The early 1980s recession in the United States is cited as an example of a W-shaped recession. We can observe in the chart below. In this thesis we will present how this phenomenon appeared in the Greek economy.

Definition Economic Crisis.

Economic crisis is a disruption in the financial markets where the wrong choices and financial risk problems increase as a result are unable to channel their funds into productive investments in profitable sectors. A financial crisis can lead an economy away from equilibrium and to turn into a downward spiral of economic growth indicators.

The Global and the Greek Economy were faced with the deepest recession since the end of World War II.

The Financial Crisis turned into a crisis of the World financial system and moved very quickly to the real economy. The financial crisis spread to the real economy through the unwillingness of financial institutions to provide loans and through the wealth destruction of households and businesses by breaking the bubbles. Foreign trade collapsed and consumption decreased.

As a result we had the dramatic decrease of global GDP, the decline in employment, increasing unemployment, the breakdown of industrial relations and the System of Social Security.

The Crisis in Europe and Greece since 2008 is not just financial and economic. It is simultaneously social, institutional and political. The ongoing austerity policies with restrictive budgets of member states increase taxes and unemployment, lower growth and incomes, expand their public debt and supply the European popular discontent manifested in different ways mobilizations and reactions of European citizens.

1.3. The beginning of the Crisis.

When the international crisis hit in 2007-8, the European policy system was largely unprepared. Euro Area did not have mechanisms to respond to the crisis. Europe simply followed the coordinated action of the G-20. The crisis spread to Greece with a first appearance at the end of 2009.

Causes of Financial Crisis of 2008:

There is general agreement that analysts are four main categories of factors that are considered to have contributed to the creation of Financial Crisis of 2008:

➔ Global macroeconomic imbalances:

Over the last thirty years, China has achieved an excellent economic growth through exports of manufactured goods to the US. These exports led to huge surpluses of the trade balance of China, which, though not fueled domestic demand, but placed in USA bonds and other the USD securities kept the dollar relatively high, and unlike in the USA interest rates at relatively low levels. This development led to enhanced liquidity and lending in the US, but also in containing inflation. For their own reasons each, neither the European Union (competitiveness issues) nor Japan (weak domestic demand) could intervene deterrent.

→ <u>Excessive Credit Expansion and Leverage:</u>

The last fifteen years the credit in the USA expansion in most advanced economies has been impressive, coming not only from the relatively large increase in the monetary base, but also the incredible leverage within and outside of the credit institutions' balance sheets and mainly investment banks and hedge funds. This leverage, as in other financial crises, mortgaged to financial stability and leaves the system vulnerable to systemic risks.

→ <u>Asymmetric information and Principal-Agent Problems:</u>

The existence of asymmetric information on structured products (CDOs-Collateralized Debt Obligations, CDSs Credit Default Swaps, etc), provided the opportunity for publishers to take excessive risk in an opaque way, risk that neither billed correctly and not sufficiently compensated. At the same time, pay systems of commercial banks, investment banks, insurance companies and hedge funds are not characterized by the incentive compatibility between executives and shareholders remain the same of their companies, thus also taken excessive risks by people who will not suffer the cost of their failed options.

→ <u>Regulatory gaps and inadequate supervision:</u>

From 1999 onwards, both the US and in other countries there was an aversion, which had political and ideological background, the application (mainly the Fed and the SEC) regulatory measures with respect to the hazard of uncontrolled credit growth and leverage. At the same time, financial innovations, including those mentioned above, rapidly created new markets, but without being accompanied by

the appropriate accrual accounting rules and the corresponding regulatory and supervisory framework.

Now we know that the coexistence of these four causes was more destructive and would be expansionary to reach up to Greece. The charts below will draw useful conclusions. [Table 1 & Table 2)

Table 1

Deficit / Surplus Account Transactions % of GDP					
Country	**2007**	**2008**	**2009**	**2010**	**2014**
Developed Economies	-0,90%	-1,30%	-0,70%	-0,40%	-0,30%
USA	5,20%	**-4,90%**	-2,60%	-2,20%	-2,70%
Eurozone	0,30%	-0,70%	-0,70%	-0,30%	0,50%
E.E	-0,50%	-1,10%	-0,80%	-0,50%	N.A
Brazil	0,10%	-1,80%	-1,30%	-1,90%	-0,80%
Russia	5,90%	6,10%	3,60%	4,50%	2,90%
India	-1,00%	-2,20%	-2,20%	-2,50%	-1,80%
China	11,00%	**9,80%**	7,80%	8,60%	8,40%
Japan	4,80%	3,20%	1,90%	2,00%	1,50%

Sources:

World Economic Outlook, Oct. 2009 /

European Commission: European Economic Forecast, Nov. 2009

(Current Account in the Balance of payments % of GDP / Annual Rate)

(We observe strong change in 2008)

TABLE 2

Growth Rate				
Year	**2007**	**2008**	**2009**	**2010**
Global Economy	5,20%	3,00%	**-1,10%**	3,10%
Developed Economies	2,70%	0,60%	**-3,40%**	1,30%
USA	2,10%	0,40%	**-2,70%**	1,50%
Eurozone	2,70%	0,70%	**-4,20%**	0,30%
E.E	3,10%	1,00%	**-4,20%**	0,50%
Brazil	5,70%	5,10%	-0,70%	3,50%
Russia	8,10%	5,60%	-7,50%	1,50%
India	9,40%	7,30%	5,40%	6,40%
China	13,00%	9,00%	8,50%	9,00%
Japan	2,30%	-0,70%	-5,40%	1,70%
GREECE	4,00%	2,90%	**-0,80%**	-1,00%

Source:

IMF, World Economic Outlook, Oct. 2009 / Annual Rate % Growth for Each Country

- It is worth noting that in particular during the last quarter of 2008, a sharp increase cost of funds was observed for the observations of the real economy, and in some cases the rate of margin lending credit institutions over the short-term lending rate of the respective government sevenfold.

Thus, the Financial Crisis spread to the real economy in two ways:

First, through the unwillingness of financial institutions to lend and secondly, through the destruction of household wealth and business by breaking the bubbles. Foreign trade collapsed and most importantly, because of the relative size for the first time in the last thirty years, the consumption decreased. As a result we had the dramatic decrease of global GDP, the decline in employment and increase in unemployment.

2. The two Phases of the Greek Crisis.

2.1. The Crisis in Greece in 2008-2009.

The causes of the first deep Recession.

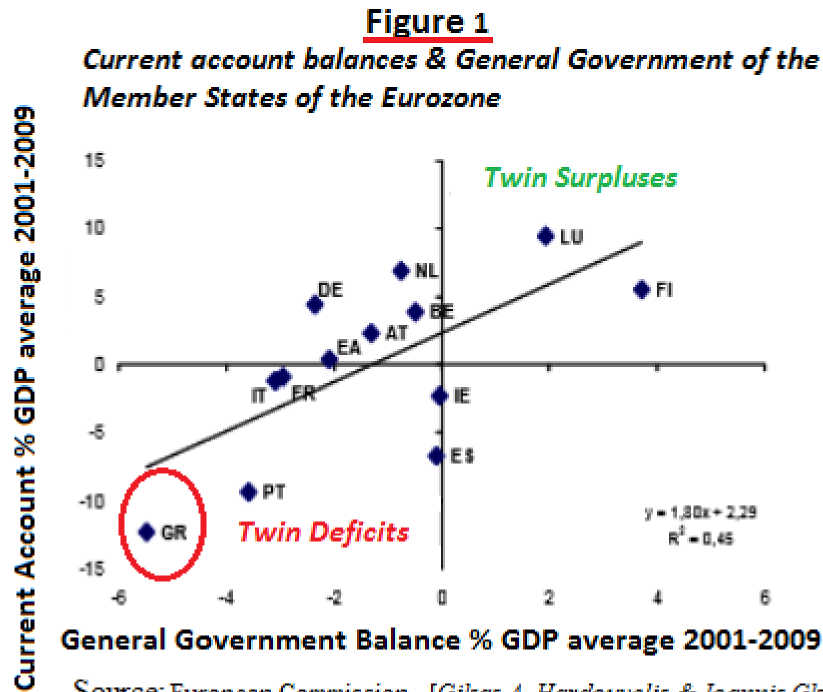
Phase I.

The global financial crisis started to weigh and the Greek economy, particularly from October 2008 onwards when the crisis worsened dramatically, causing significant attenuation of expectations.

The crisis highlighted the existing large macroeconomic imbalances and structural weaknesses of the Greek economy: the **lack of competitiveness** and the **organizational inadequacy** of the state. These two imbalances are evident in the large **"twin" deficits**, the **current account deficit** and the **budget deficit**. (Figure 1) They become visible and high 'twins' debts (public and external), which are the accumulation over time of the respective annual deficits.

The lack of competitiveness is the underlying problem. The World Bank indicators for doing business continued the deterioration in recent years while the effective exchange rate of the country constantly increased.

The lack of competitiveness is reflected both in the **huge current account deficit** (Figure 1) and the highest Greek inflation compared with other Eurozone countries.



Source: European Commission - [*Gikas A. Hardouvelis & Ioannis Gkionis (2016)*] - A Decade Long Economic Crisis: Cyprus versus Greece, Cyprus Economic Policy Review, Vol. 10, No. 2.

We buy much more goods and services than we sell to foreigners. The Greek economy has the potential to produce competitive goods and services. As a result, the external debt had increased from 94% of GDP at the end of 2003 to 187.1% in the third quarter of 2010.

In the area of public finances in 2008 the general government deficit exceeded 9,8% of GDP, resulting in the inclusion of Greece in the Excessive Deficit Procedure in April 2009, while public debt as a percentage of GDP rose, approaching 112,9%.

The financial problem is even more evident. At the time of entry into the euro area by 2008, despite strong growth and a favorable macroeconomic environment, Greece failed to ever reduce its deficit below the 3% of GDP. The 2008 figures have already showed clearly that the economy was heading for deterioration, which dramatically confirmed next year. Moreover, throughout 2008 there were constant "warnings" from abroad.

The year of 2009 was a particularly critical year, and emerged with acidity problems, while pre-existing, **ignored in the climate of complacency that had fueled the previous development**. Upon arrival, however, the global crisis problems could not longer be controlled and overcome them require immediate emergency measures and coordinated efforts, which seem to be difficult, politically and socially, to be made.
A second key was given the serious implications of the policy cycle in rapid response effort these problems. 2009 was a year with two elections for the European Parliament in the spring and the Greek parliament in October. This not only produced the usual **budgetary outcome of the policy cycle**, the rise in public **spending and easing tax administration**, but also prevented the political system as a whole to converge to a minimum request basis for dealing with the exceptional circumstances were evident that might have been.

The climate deterioration and erosion of confidence.

The adverse developments in 2009 were marked by the derailment of public finances, where the deficit reached 13.6% of GDP and public debt to 115,1% of GDP. The GDP, after fifteen years (1994-2008) of continuous growth, declined in 2009 by 3.2%, despite the huge fiscal expansion. Specifically, the general government deficit reached 15.7% of GDP and the primary deficit to 10.5% of GDP. Compared to 2008, the deficit widened by 5.8 percentage points of GDP and the primary deficit by 5.5 percentage points of GDP. This expansion was due both to poor revenue trend (2008: 40.7% of GDP, 2009: 38.3% of GDP) and the increase in general government expenditure (2008: 50.6% of GDP, 2009: 54.0% of GDP).

However, **GDP affected by the fall in investment and private consumption decreased and the economy officially entered into a deep recession**.

These developments have dramatically heightened uncertainty about the future of the economy, affecting expectations and created a trust deficit, which in turn led to a deterioration of the credit capacity of the economy and a significant widening of the yield spread between Greek and German bonds.

Already in January 2009, **the Standard & Poor's downgraded the country's credit rating from A to A-**, because of "worsening loss of competitiveness of the Greek economy", maintaining however the investment grade category (investment grade). Because of this degradation, spreads between Greek and German government bonds rose to 300 basis points in January 2009 and remained at this level until March.

A turning point for a further deterioration of the environment was the announcement of the Greek authorities on 22 October 2009 that the 2009 deficit was more than double the forecast and that the 2008 deficit was significantly increased compared with the hitherto estimates.

This large formal revision of the deficit confirmed market assessments of rating agencies and international media that the financial problems of Greece was much more serious than suggested hitherto elements. This has put the spotlight markets two critical questions: first, whether the Greek authorities have the will and determination to implement an adjustment program capable of tackling deficits of this magnitude, and secondly, if the statistical data record reliable financial situation in the country.

The assessment of the market at the end of 2009 was negative for both issues and strengthened by the ECOFIN decision on December 2, according to which Greece inadequately responded to the Council's recommendation of April 2009, when the Excessive procedure initiated deficit.

Inadequate treatment of deterioration.

The economic policy adopted before the elections on October 4, 2009, and the first few months after they were timid and measures adopted proved insufficient to halt the process of deterioration. It is significant that the new government, while a few days after the elections announced its estimate of the deficit for 2009 (12.5% of GDP, compared to 3.7% initially projected) stated they will implement its electoral promises, which they were clearly expansionary.

In early 2009, the economic policy designs were based on the forecasts of the Updated Program for deficit of 3.7% of GDP in 2009. Soon, however, it became clear that that provision did not correspond to the facts and that eventually the deficit will greatly exceeded. As mentioned above, the projection for the 2009 deficit was initially placed (22.10.2009) to 12.5% after 12.7%.

Despite the active revision of the Budget for 2010, which was passed in December 2009, still conveys the impression that the crisis could be overcome by a relatively mild for the size of the problem - the fiscal adjustment program.

Thus, in late 2009 and the fundamentals of the economy early 2010 were in opposite to the indicated direction, with huge shortfall in government revenue and exacerbation of public expenditure, deficit and debt, while the external deficit remained historically high levels, while the economy was now in deep recession.

2.2. The critical period - Horizon measures for emerging the Crisis became a boomerang for the Economy.

In May 2010, Greece signed a set of bilateral agreements with other EMU countries for an €80bn loan plus another €30bn Stand-By-Arrangement (SBA) with the IMF. The loans were planned to be disbursed over a period of three years, i.e. until the time Greece was expected to be in a position to access international financial markets at reasonable borrowing rates. The loans were accompanied by a Memorandum of Understanding (MoU) – what later became known as the first economic adjustment program for Greece – on specific economic policy conditionalities, which described the actions Greece would have to undertake in order to bring its finances back to balance, reform its economy and ensure its financial system remains stable and healthy [IMF (2010)], European Commission [2010]. The loan money would be provided in installments after Greece would show conformity to those actions.

The subsequent fiscal contraction caused **a bigger recession** than anticipated. Almost 14,1% of real GDP was lost within three years (2009-2010-2011) and the unemployment rate skyrocketed from 8.4% on an annual basis at the end of 2007 to 17,9% at the end of 2011.

The size of the fiscal multiplier is underestimated, partly because of misjudgment, partly because of the attitude of punishment by Europeans to Greece and partly because of the credit crisis in 2009.

Greek politicians have proved once again reluctant to fully carry out the reforms that had signed to do. Lenders forced for new reforms in the labor sector before the reforms of product market. This made the recession far worse, as product prices are not adjusted downward immediately, and the decline in nominal wages translated into a larger drop in real incomes and domestic aggregate demand.

By 2011 the large recession, coupled with the continuing - even lower - fiscal deficits, were pushing the debt - to - GDP ratio way up to unsustainable levels.

This created the need for debt haircut, which finally took place in February 2012, through the participation and the Private Sector. The procedure was as follows: Old government bonds and outstanding loans were converted to the new bonds. Essentially, bond holders received cash EFSF bonds (of maturity up to two years) for 15% of the old face value and bonds that matured over a twenty year period from 2023 to 2042 for 31.5% of the old face value. In terms of present value, old bondholders lost about 78% of their investment [according to the Bank of Greece (2012)]. One category of such investors were domestic Greek banks, which were not affected by the previous international crisis, but now their capital base was completely wiped out. So, they were recapitalized mainly with public funds, with money which originated from a new lending arrangement with the same official creditors.
[*Gikas A. Hardouvelis & Dimitrios Malliaropulos (2013)]*

The second economic adjustment program was signed together with the agreement on the PSI in February 2012. The first economic adjustment program was lent out to Greece only €73.0bn of the original €110bn. After that the new second loan extension amounted to another €164.5bn loan (with the EFSF and IMF contribution at €144.7bn and €19.8bn). It is worth noting that from the first rescue program, a total of €50bn, was allocated for the needs of the Banking System.

This second program was based on a forecast of positive growth past 2014 (real GDP target for 2014 at 2.5%) plus the optimistic assumption that the debt-to-GDP ratio would decline to 120% by year 2020. Indeed, moving to the year of 2014 the economic climate had improved considerably compared with previous years, the banking system has stabilized after recapitalization and the economy showed signs of revival. [*Gikas A. Hardouvelis & Ioannis Gkionis (2016)*]

2.3. The critical year of 2014.

What is so different which was not present in previous years that can justify the optimism?

In 2014 there were signs that we are nearing the end of the recession. The economic climate had improved considerably compared with previous years, the banking system had stabilized after recapitalization. Also, private consumption, which accounted for 73% of nominal GDP in 2012 appears to be stabilizing in 2014. This is because consumption is mainly a function of disposable income and disposable income of households had stabilized.

Furthermore, exports were expected to continue to grow and as the European economy stabilized. At that time there was overall economic stability. Finally, investments, whose share in 2012 was only 13% of GDP was stabilized in 2014, if the climate continued to improve with "hot money" into the economy, which seemed to come from increased tourism, the stabilize the banking system, the activation of large projects, the influx of NSRF resources and potential investments that would accompany the late privatization.

In addition, as the year 2014 was moving along, the economic sentiment was rising, new FDI had surpassed its previous pre-crisis peaks, investment in machinery and equipment became positive after years of decline, unemployment began declining and privatizations picked up momentum. Gross domestic product rose in 2014 by 0.6% and was forecasted to rise further to 2.7% in 2015.

The government was even able to access the markets twice and issue a 5-year bond in April with a coupon of 4.75% (yield 4.95%) and a 3-year bond in July with a coupon of 3.375% (yield 3.5%). [*Gikas A. Hardouvelis & Ioannis Gkionis (2016)*]

In 2014 they seemed that a Deep recession had entered stop and this is shown by the following table from our investigation. (Table 3)

TABLE 3

	2012 Share in Nom. GDP	2013 growth Real	2014 growth Real
Private Consumption	73,70%	-7,10%	0,50%
Government Consumption	17,80%	-7,20%	-3,10%
Tot. Consumption	91,40%	-7,10%	-0,20%
GFCF	13,60%	-9,90%	1,50%
Domestic Demand	105,00%	-7,50%	0,00%
Imports	32,00%	-9,80%	0,60%
Exports	27,00%	2,90%	2,10%
GDP (nomimal)	193.748		
Real GDP		-3,90%	0,40%
GDP deflator		-1,50%	-0,50%
Unemployment (avg)		27,60%	28,50%

Source: Bloomberg Data – DataStream / Annual Rate % - Yearly

The Government in 2014 had a particular output model of the deep recession and this is also reflected in the financial data.

THE GROWTH MODEL:

- In the future, consumption should grow at rates lower than Investment & Exports.
- For recession to stop, mainly consumption has to stabilize, plus investment has to reverse its trend.
- Private Consumption will stabilize if disposable income stabilizes, i.e. no more taxes, no drastic wage & pension cuts.

The short and long-term growth paths are interlinked: If recession continues, all risks explode plus Capital & Labor inputs get destroyed, hurting future potential growth. *[Gikas A. Hardouvelis (2013)]*

The economic review of 2014. - Optimistic scenario for the future.

In 2014, besides the positive clues already mentioned earlier, no additional anticipated restrictive measures, hence stability in disposable income and improvement in sentiment.

The Government and the Ministry of Finance had on their agenda economic reforms that will not only stopped the recession, but would bring growth back to Greece. Indicatively, we present the reforms plan of the 2nd half of 2014.

The Reforms Plan:

- Public Sector Modernization: Central Authority creation for Public Procurement.
- **Fiscal Structural Reforms:**

2. Application legislative program that implements public taxation and the various codes.
3. Restructuring of tax administration.
4. Mechanism against Corruption. (Penalties for tax evasion, protection of witnesses for fiscal affairs, internal control in tax.)
5. Upgrading the electronic system linking tax offices.

- **Judicial reforms:**

6. Plan review for acceleration litigation pending tax casesng the electronic system linking tax offices.
7. Opening of the mediation process and to non-lawyers.

- **Reforms of the Health Sector:**

8. Reduction in pharmaceutical expenditure. (Generic 40% to ~ 18%)
9. Double entry system for 100% of hospitals than 70%.

- **Consumption stops declining as fast as before**.
    - Tax rates do not rise further, hence do not decrease disposable income.
    - Level of permanent income stops declining, as exports & investment-driven growth generates a recovery

- **Exports continue expanding with the help of the freshly capitalized banking system and with the enforcement of structural reforms that minimize bureaucracy and help improve price & quality competitiveness**.
    - Continuous increase in Exports.

- **Gross investment stabilizes and takes off soon, that is,**
    - Sentiment improves and Greeks begin believing in future stability.
    - Privatizations continue as planned and bring in additional fresh capital & jobs.
    - A solution to the sustainability of the Debt-to-GDP ratio is brokered with the official lenders, minimizing the threat for possible future over-taxation.
    - The banking system stabilizes and regains some of its deposits back
    - Interest rates on bank loans decline.
    - Political stability prevails.

2.4. Phenomenon of W-shaped Recession in Greece.

In the year of 2014 and after presented the phenomenon of double bottom recession (***W-Shaped Recession***) in Greece, which we study. After a deep recession from 2008 to 2014, the economy showed signs of stabilization and recovery. There were all the prospects the Greek economy to return to growth and stop the continuing recession.

What went wrong ???

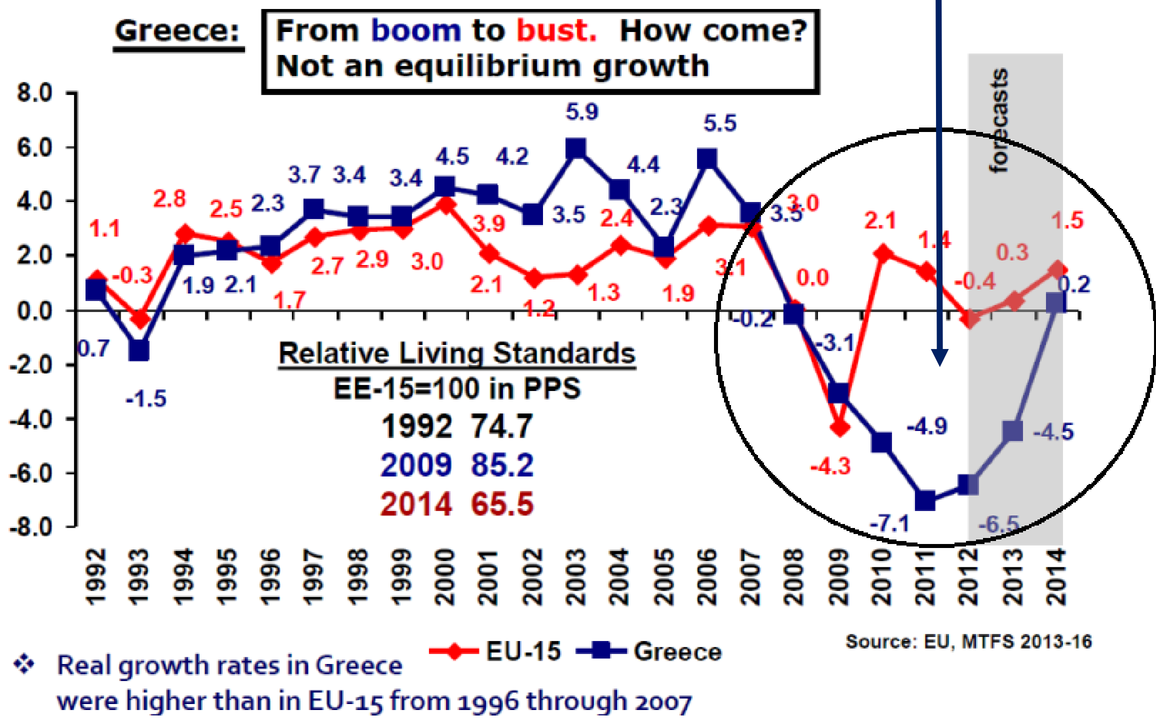
Wrong tactics followed by the new Government, the economy fell into recession and Greece passed in the second phase of the crisis. All previous efforts to balance and stabilize the economy destroyed.

The following Diagram illustrates the phenomenon of ***W-Shaped Recession***. The recession has stabilized in 2014, then the **Greek Economy** goes into a slight growth and then again in fall. (Figure 2)

The occurrence of the phenomenon:

W-SHAPED RECESSION

FIGURE 2



Source: Bloomberg data / Annual rate – Period 1992 - 2014

2.5. The Causes of the second deep Recession.

The continuation of the Crisis.

Phase II.

At the end of 2014, as the economy was picking momentum, Greece was ready to leave the lenders' bailout program, like Ireland and Portugal had done before. Conditions for Greece was very favorable, as the Government had left over € 11bn unused bank recapitalization funds for management and another €13bn of unused IMF money was soon to be added to the budget. The credit line would serve as a safety pool in 2015 and later, in case the country had trouble accessing the markets.

Furthermore, the good economic climate in Greece confirmed from the announcements of IMF. At that time, the debt was regarded as viable. The IMF, which in the past had expressed reservations, now had come out strongly, claiming that the public debt was on a sustainable path [IMF (2015)]. It is worth adding that at that time had begun discussions on debt relief.

In late January 2015, Greece has proceeded to early elections. All the good economic climate and expectations were subsequently cut short by a new and inexperienced coalition Government. The political positions of the new Government are completely different with earlier politicians. The new politicians believe that will get out Greece from the Crisis with abolition of stability programs by the Europeans. This is then turned into a Utopia.

The new Government caused the economy to stall, thus bringing Phase II of the Crisis. The new politicians refused to continue the necessary reforms and instead wrongly focused on a possible nominal Debt haircut. So, this policy stance created a heated debate between the lenders and the Government. The confrontation continued and this way the economy deprived of the necessary cash installments and forced the ECB to decline cheap funding to the Greek banks [ECB (2015a)] just one week after the Elections.

Greece was subsequently exempted from the ECB's Public Sector Purchase Programme (PSPP), the quantitative easing (QE) that started in March 2015. The effort that was made in 2014 for orderly exit of Greece from the crisis and progress towards development destroyed. So, the overdue state Debt rose to €6,1 bn and also drying up liquidity in the Private Sector.

The continuing confrontation between Greek Government and European Lenders creates uncertainty among citizens. In the first half of 2015 created high fear in the population, who gradually pulled about €45bn from the banks or 25% of their deposits. That period, the economic sentiment fell drastically and signaled the collapse of the Banking System. In late June 2015, **Capital Controls** were put in place to prevent further deposit drainage, thus dealing another blow on the Private Sector and on Exports. [Th. Stamatiou & S. Gogos (2015)].

It is worth noting that until mid-2015 the economy was facing imminent bankruptcy. The Greek Government understands that the policy followed leads nowhere, contrary infuriates the Europeans lenders. So, the Government proceeded with the referendum process by delaying further to make reforms for sanitization of the economy.

The Question to citizens was whether to continue the “heavy reforms” and by extension to stay in the Eurozone or not. The population objected to new austerity and delivered a (No) vote with 61.31% majority. Yet, despite the overwhelming (No) vote, which the Government itself had openly supported, after the referendum the government switched completely its policy.

The Government was forced to accept very harsh measures and a specific third rescue program for 2015-2018, for otherwise it faced «Grexit». Under the third economic adjustment programme for Greece, an amount of up to €86bn would be lent to Greece [ESM (2015a)]. [*Gikas A. Hardouvelis & Ioannis Gkionis (2016)*]

This happened because Europeans lenders have now very strict approach, because did not trust the new Government. The Greek politicians have no fixed plan to combat debt in Greece. There is internal conflict of political views and this is not conducive to the development of the Greek economy.

Indications of the 2nd Phase of Crisis in Greece.

The new crisis is shown by the fact that the margins of interest rates of the Greek State in relation to the respective German or Portuguese, increased again after the decline in 2014. It appears from the course of the economic climate, which sank and disconnected from the previous European course, as opposed to other Eurozone countries implemented economic adjustment program. The economic climate in Greece in 2015-16 shows that our country today is a special case.

The new Crisis seen from today's increased dependence of Greek banks from the Eurosystem. At the end of 2014 the amount of lending Greek banks from the Eurosystem was only €43 bn., the smallest amount since 2008, when the global crisis erupted. Then it was zero and the urgency and more expensive borrowing via the ELA (Emergency Liquidity Assistance). [*Gikas A. Hardouvelis 2017*]

Furthermore, it is worth noting that in 2015 the **Bank Loans** (along with that of ELA) jumped to heights of over €120 bn., something not seen since before the PSI.

The costs to the real Economy from the 2nd Phase of Crisis in Greece.

The kick of the economic recovery has cost. It is a cost that is spread across the economy, maintained over time and is not measured by the simple level of new borrowing of €86 bn in the third memorandum. Moreover, in early 2017 we are worse off than where we were at the beginning of 2014.

The **first part of the cost** refers to annual production of goods and income loss. If the course of 2014 had continued at the end of 2016 the GDP would be at least €14 bn. higher (or about 1,300 per capita per year) at the end of 2017 by €18 bn higher. The opposition of the recovery path is therefore a permanent and recurring cost €18bn per year.

A **second part of the cost** is the additional budgetary measures, charged to the net income of households through increased taxation and reduced employment. These measures are a total bill of €9 bn. (1,54 billion in 2015, 1,41 billion in 2016, 2,6 billion in 2017 and 3,3 billion in 2018). The 2017 and 2018 measures are derived almost exclusively from the revenue side and that is a policy of mix completely anti-development. Indeed, too much of the revenue growth comes from the increase in indirect taxes affecting the weakest economic strata of society.

And of course, may be required and additional measures for the period after 2017, according to the latest decisions of the Eurogroup. The size of interventions after 2014 is a multiple of those that were planned for 2014.

A **third important part of the cost** relates to the further reduction in the value of assets held by citizens. Property prices fell 7% in the years 2015-2016 and only by the owner-occupied properties lost value approximately €15 bn.

In addition, **a fourth part of the costs** derived from the increase in future levels of nominal Debt. The Greek state lost about €25 bn of shareholder value held by the banks. In the summer of 2014, the market value of the four systemic banks had reached €33,4 bn and in November 2015 the value was approximately €800 m. This loss is equivalent to an equal loss of direct amortization of debt in the future.

Second, much of the expected surpluses of the period 2015-2018, about €13 bn, which would succeed the country without new fiscal measures were canceled in accordance with European lenders due to stagnation of the economy.

Third, the stagnation in the economy has reduced the expected revenue from privatization.

Finally, **a fifth and a significant part of the cost** is due to the burden of health and general well-being of citizens, and the leakage of educated young people, and many firms abroad.

Today's economy is stalling without prospects. The chance of recovery in the economy such as 2014 was lost due to wrong handling and enormous delay. The current Greek government is trapped in inaction and immobility with European Lenders. The result is the Greek country can not return to growth.

Greece after nine years in a deep Recession can not return to growth, as did other countries such as Ireland, Cyprus, Portugal. The question whether to move away from the second Phase of the Crisis has not yet answered affirmatively. What is it that made Ireland for example and managed to fight the Crisis?? How Ireland has now development ??

In **the next part of the thesis**, we will present our Econometric Analysis and we will draw important conclusions about how a country achieves to return to growth through Investment. The survey includes the countries of Greece and Ireland. Then we will mention the Irish crisis and we will highlight the significant changes between Greece and Ireland as two countries that had the same starting point, but different path.

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3. Econometric Analysis

First of all, our Econometric Analysis does not specifically based on a bibliographic reference, because all the papers & bibliographic references that we have studied concerning the econometric study of Greece have predictive model for the economy. The references that help in our survey are: *Petralias A., Petros S., Prodromidis P. (2013)* & *Gikas A. Hardouvelis & Ioannis Gkionis (2016)*.

The Econometric Analysis based on a sample of 10 countries of the Eurozone: [Germany, France, Italy, United Kingdom, Netherlands, Spain, Portugal, Cyprus, Greece and Ireland].

The variable Data sourced from **Bloomberg** and **DataStream** and the horizon made the Econometric Study was from **1990 to 2016**.

<u>The variables which used were:</u>

- **Annual growth (ld) Investments** – Lagged Dependent variable
- **Tax Rate**: The tax rate is a variable which significantly affects investment, as the very high tax rates discourage new investment in a country.
- **Business Confidence**: The indicator is computed through the estimation of a factor-model and summarizes the common information contained in the surveys. A rise in the indicator will point to an upswing in activity and an improvement in the business climate. The specific indicator shows us the confidence of the investor to come to a country and to conduct business.

- **Competitiveness Index**: The indicator shows how competitive economy is one country. It is one of the most important indicators in an economy, which analyzes how competitive is a country in order to attract new investments.

The reason that we chose these variables is that we had to find variables that directly affect the Investments. The most important variables affecting investments are:

1. Tax-rate (corporate)
2. Competitiveness Index
3. Business Confidence
4. Corruption Index
5. Unit Labor Cost
6. Ease of doing Business

In the investigation that we conducted, we found evidence for only the first three variables for the time horizon we set from Bloomberg & DataStream.

The Econometric Analysis program which used was the **Gretl – PANEL DATA**, for all countries, yearly, period: 1990-2016. Because historically did not have values to our variables for all countries, the Regression Model ran for 8 Countries.

The Regression Model (A)

Model of INVESTMENTS: Random-effects (GLS), using 148 observations
Included 8 cross-sectional units
Time-series length: minimum 5, maximum 25
Dependent variable: **ld_Investments**

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Const	0,469837	0,540068	0,8700	0,38578	
ld_Business Conf.	-0,0393079	1,28377	-0,0306	0,97562	
ld_Competitivenes Index	5,73412	1,09933	5,2160	6,29e-07	***
TaxRate_t-1	-1,31747	1,70659	-0,7720	0,44139	
ld_Investments_t-1	-0,277656	0,0827271	-3,3563	0,00101	***

ld: The first difference of the natural log of each series in varlist is obtained and the result stored in a new series.(annual growth)	**t-1:** Lagged variable is a variable which has its value coming from an earlier point in time.

Mean dependent var	0,069491	S.D. dependent var	2,162201
Sum squared resid	527,3508	S.E. of regression	1,913677
Log-likelihood	-304,0313	Akaike criterion	618,0625
Schwarz criterion	633,0486	Hannan-Quinn	624,1513

Asymptotic test statistic: Chi-square(4) = 43,3571
with p-value = 8,72436e-009

Breusch-Pagan test -
Null hypothesis: Variance of the unit-specific error = 0
Asymptotic test statistic: Chi-square(1) = 2,40863
with p-value = 0,120668

Hausman test -
Null hypothesis: GLS estimates are consistent
Asymptotic test statistic: Chi-square(4) = 3,34406
with p-value = 0,501981

Assumptions:

- The variable of **tax-rate – lagged & level**: **1.)** With the logic thinking and with the observation of the tax rates changes that alters **the second half of the year**. 2.) There is a **lag between the assessment of an investment** by the investor and its **implementation**.

Results – Conclusions of Econometric Analysis:

From our Econometric Analysis we found the following:

- With **increasing** the tax rate **reduces** investments and this is shown in negative index (-) coefficient. It's a normal evolution. Nevertheless we see from the model that is **not statistically significant**. (p-value = 0,44139) **It is not the key element affecting whether to increase or not the investments**.

- The **Competitiveness Index** is the key element affecting whether to increase or not the Investments. How competitive is the economy of a country. We observe of the results of our model that it is **statistically significant (p-value < 1)** and the Index has **positive correlation** with Investments.

➔ It is worth noting that this Indicator is affected by the instability in the economy of a country, the instability in the banking system, the political uncertainty e.t.c.

Here there is a correlation with what we mentioned about Greece in the previous chapters of the Thesis. Greece is very low in this **Index** because as we mentioned before the economic instability of the country, the lack of liquidity, the Capital Controls and the most important the political uncertainty can not restore growth in the country from attracting Investments.

- The **Business Confidence Index** from our research we observe that it is **not statistically significant**. This index is not effective in increasing of investments. A reasonable explanation is that investors are forward looking and not short. This ratio is combined with the **Competitiveness Index** regards future how well it will go an economy.

  Then the thesis will present the state of the Irish economy, a country that we investigated in our model and will highlight the differences with Greece. Both in Greece and Ireland had a similar starting point to the macroeconomic characteristics. Both countries joined in stability programs (MoU), but Ireland managed to return to growth in contrast to Greece. **How did it Ireland?**

4. The Crisis in Ireland.

Ireland became a victim of the Global economic downturn that climaxed following the 2008 collapse of Lehman Brothers - the fourth largest investment bank in US. The economic Crisis that hit Ireland in 2008 stemmed from an uncontrolled real estate bubble that had developed over the previous five years, and the resulting collapse in the domestic financial system, which was heavily exposed to the property market.

The collapse had an immediate and very severe impact on all aspects of the economy. The very large fiscal adjustment that was necessary to restore order to the public finances began in 2009 and it has continued to this day. However, there are clear signs that the economy began to grow again in 2012 and this recovery has continued through 2013 and into 2014. [*John Fitzgerald 2014*]

<u>But actually Ireland by the end of 2010, facing four interrelated Crises:</u>

Firstly, the crisis in the housing market, with hundreds of thousands of households in negative balance.

Secondly, the crisis in the labor market, with hundreds of thousands either be unemployed or have left the country.

Thirdly, the crisis in public finances and then the biggest problem the collapse of the Financial system. [*Ronan Lyons 2015*]

The Housing bubble.

The Banking system was already released and the economic prosperity of Ireland immeasurably facilitated the creation of a huge "bubble" around the property industry. The granting of mortgage loans received standard dimensions. With the average salary has reached €4,000 a month (about €50,000 per year), the supply of loans of around €300.0000-400.000 seemed perfectly realistic. It is estimated that housing loans currently range around 200% of Irish GDP. The construction sector soared by 10% to 26% of GDP, while the continued rise in property prices encourage consumers and banks in continuous expansion.

Banks naturally borrowed from the international market with low interest rates of the time and, in contrast to the US, are generally not selling loans to third parties in other countries. With the outbreak of the crisis of 2008 the Irish banks found themselves with their "toxic assets" in their hands, they could not pay their creditors and view bankruptcy, nationalized. Housing prices have collapsed by half. The state guaranteed deposits, bank guarantees and started to repay the loans of the banks in the rest of Europe and the USA. [*Ronan Lyons 2015*]

The Unemployment in Ireland.

Another big problem was the "great exodus" of the workforce. The economic Crisis has caused a mass exodus of Irish. It is estimated that currently live abroad one million Irish. That is more than 1/5 of the population (4.6 million).

More than 240,000 Irish have gone of the country after the economic collapse of 2008, of which 165,000 in the last 5 years and are under 25 years old.

The Fiscal Crisis.

Ireland had low public debt and a balanced budget. But to support with public funds huge banks exposures, implemented tough fiscal measures in 2009. In 2010, the situation worsened with the current 32% budget deficit. The most important was that within 24 months the Irish economy has lost 17% of GDP, all of the excess construction sector. **This is one of the greatest shrinkage of national economies in the current crisis**. So, Ireland entered in a deep recession and financial instability.

The Start of the Banking Crisis.

During 2008, as evidence built up of the scale of the Irish construction collapse, international investors became concerned about **the exposure to property investment loans of the Irish banks**. These banks found it increasingly difficult to raise funds on bond markets and on 29 September 2008, two weeks after the collapse of Lehman Brothers, the senior management of the largest Irish banks turned up at government buildings looking for help.

Anglo Irish was losing funds and running out of eligible collateral to be used to borrow from the ECB. (Anglo Irish one of the largest Bank)

Many of the development loans of the Irish Banks in 2008 were made to businessmen that had made fortunes during the boom and were "doubling down" on property with ever more extravagant investments. Most of these loans were used for investments that could only have paid off if property prices continued to rise. In addition, these loans were largely concentrated in a small number of banks. [*Karl Whelan 2013*]

TABLE 4

Time Line of the Crisis in Ireland

Sept. 30, 2008	Just days after becoming the first Eurozone country to slide into recession, Ireland becomes one of the first to respond to the Lehman Brothers collapse, guaranteeing €440bn of liabilities at six Irish-owned institutions and a foreign-owned bank.
Oct. 2008	Finance Minister Brian Lenihan boasts it would be "the cheapest bail-out in the world" and it prompts similar moves across Europe to prevent capital flooding to Ireland.
Dec. 21, 2008	The Government says it will inject €5.5bn into the country's three main lenders and will also underwrite Bank of Ireland and Allied Irish Banks plans to raise €1bn each.
Jan. 15, 2009	Ireland abandons plans to inject €1.5bn into third largest bank Anglo Irish Bank and nationalizes the commercial lender amid fears it could collapse.
Feb. 11, 2009	Ireland says it will inject €7bn into Bank of Ireland and Allied Irish in return for guarantees on lending, executive pay and mortgage arrears. It gets a 25pc indirect stake in both banks.
April 7, 2009	Lenihan announces the creation of a "bad bank" to deal with the risky property loans of financial institutions. The National Asset Management Agency (NAMA) is established six months later, ready to take assets worth a nominal €77bn at an average discount of 30pc.
May 29, 2009	Ireland is forced to inject up to €4bn into Anglo after its loan book sours and drags the bank to a half-year loss of €4.1bn, at the time the worst loss in Irish bank history. It manages to more than treble that record within two years.
Feb. 19, 2010	The government takes its first direct stake in Bank of Ireland, taking over 16pc of the lender in lieu of a payment due on the 25pc indirect stake it held.

March 30, 2010	NAMA buys a first batch of loans at an average discount of 47pc – requiring lenders to raise more capital to absorb losses than previously envisaged. The Central Bank also demands that lenders hold a minimum 8pc of core Tier 1 capital by the end of the year. It sees Ireland take control of Irish Nationwide building society with a promised capital injection of €2.7bn. Dublin pumps another €8.3bn into Anglo, and says it may need another €10bn.
May 13, 2010	The government takes an 18pc stake in AIB after it, like Bank of Ireland, is prohibited by an EU ruling from settling a coupon payment on the government's €3.5bn preference shareholding in cash.
June 9, 2010	The state's Bank of Ireland stake rises to 36pc after a €3bn capital raising, reaching the central bank's capital ratio target with six months to spare.
Sept. 30, 2010	After weeks of speculation over how much Anglo will cost the state, helping push Irish borrowing costs to euro lifetime highs, the central bank estimates the final bill could be as high as €34.3bn, up from €22.3bn. Dublin puts another €2.7bn into Irish Nationwide, doubling its state aid, and tells AIB, EBS and Bank of Ireland they need to raise even more capital. It says it will take a majority stake in AIB.
Nov. 29, 2010	Prime Minister Brian Cowen signals junior bondholders at Ireland's top two banks should expect to share some of the pain, as public anger builds with calls to "burn the bondholders". Ireland ruled out forcing holders of bank senior debt to take a hit, however.
Dec. 15, 2010	The government tops up an earlier €350m capital injection into EBS by pouring an extra €525m into the building society.

Dec. 23, 2010	Ireland effectively nationalises AIB with a €3.7bn capital injection, giving it a 93pc holding once the bank completes the sale of its Polish interests to Spanish group Santander. As part of Ireland's €85bn IMF-EU bailout, the bank still needs a further €6.1bn of core tier 1 capital.
Feb. 9, 2011	The outgoing government shelves plans to inject up to €10bn into banks until after an election, throwing down a challenge to opposition parties who want bondholders to shoulder more of the cost. The new government then delays the cash injection until the release of stress tests results on March 31.
March 31, 2011	**Ireland' s Central Bank publishes the results of "Stress Tests"** on its four remaining banks, estimating that an additional €24bn injection of capital will be needed to boost their reserves and cover the cost of more loan write-offs.
2012	Irish voters approve the European Union Fiscal Treaty by 60% at a referendum.
2013	Ireland successfully raises €5bn by issuing a syndicated 10-year benchmark bond to the financial markets. It's Ireland's first sale of benchmark bonds since the banking collapse in 2010.
Dec. 15, 2013	Ireland successfully exits the Troika's three year programme.
Jan. 2014	Ireland again returns to the long term borrowing markets with a €3.75bn sovereign bond and receives a Moody's upgrade.
2015	According to EU forecasts, Irish GDP growth for 2015 as a whole was 6.9%.

2016	The European Commission's winter 2016 European Economic Forecast expects a moderation in Irish economic growth for 2016 and 2017 to more sustainable rates of about 4% and 3% respectively.

4.1. Ireland from Crisis to Growth

Ireland is often regarded as a success story for Eurozone austerity. Ireland's budget Deficit is still projected to be about 7.3 percent of GDP in 2013. The European Commission projects that the deficit will decline to 4.3 percent in 2014 and 2.1 percent in 2015, by which time the primary budget is projected to record a surplus of 3 percent. These improvements partly reflect further planned fiscal consolidation but they are also reliant on projections that real GDP growth will return towards 3 percent in the coming years.

<u>The steps for Development with radical reforms:</u>

- Strictly complied all the terms of the memoranda and ensure all the structural reforms.
- Originally cut public spending by almost 50%.
- Eliminated the bureaucracy.
- Ireland transformed the economy and the business environment in a "paradise" for investments by large companies, multinationals or not.
- Maintained wages at a reasonable level.
- Low taxes (12.5%), as well as reduced interest rates, attracted many businesses on the island, which became a favorite tax haven of American groups - resulting in capital inflows.

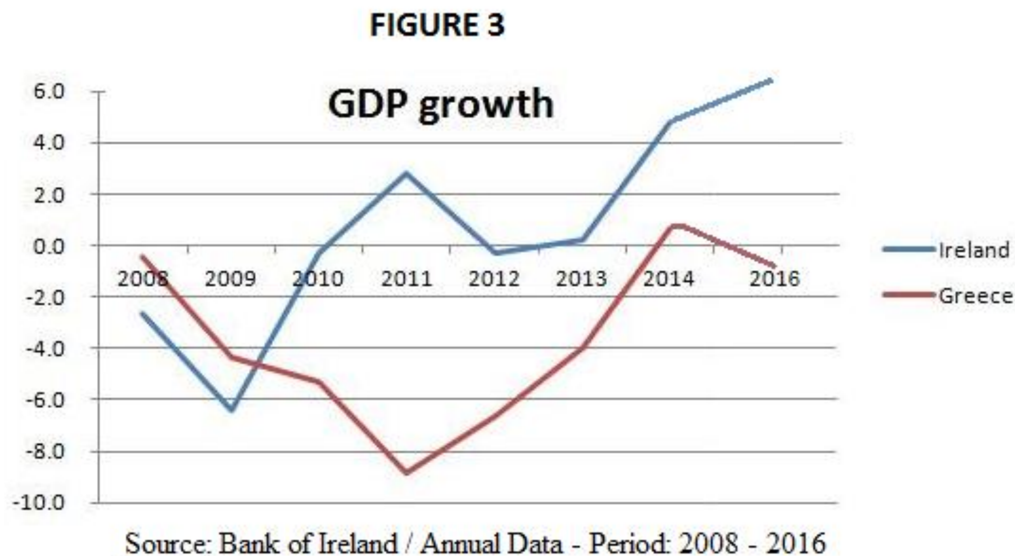
4.2. Greece versus Ireland.

Our earlier discussion revealed important differences between the two countries in the factors which led to their respective crises. Both Ireland and Greece went through severe austerity programmes: Greece did as much as, or even a bit more than, we did in terms of cutting borrowing, depending on exactly how you measure it. Greece, at least before the latest upheavals, was only borrowing to repay its debts, as revenues already covered the cost of running the country, a huge improvement from when the crisis started. The first major difference was the much larger fiscal and competitiveness imbalances in Greece.

Ireland entered the Crisis with a low national debt. Greece's debt was already at danger levels, of 100 per cent of GDP, before trouble hit in 2008. In the same way that Ireland's banks gorged themselves on low-priced and freely available international funds after we joined the euro, the availability of cash allowed Greek governments to keep borrowing, even though debt was already high.

The problem is that Greece never got momentum moving firmly in the right direction. As the crisis took hold, its debt level shot up, reaching more than 170 per cent of GDP. Reducing such a high debt level requires high growth (along with a bit of inflation) and a big surplus on the government's annual budget, excluding debt costs. Pinned back by recession, Greece has been running hard to stand still. [*Gikas A. Hardouvelis & Ioannis Gkionis (2016)*]

The interesting question is why Greece has been so different. Here is growth in the two economies (Data comes from the Bank of Ireland Economic Outlook – Figure 3).



Of course the 2009 recession affected everyone, but from 2010 until 2014 the Irish experience was bad, but for Greece it was a disaster.

Furthermore, the underlying strength and productivity of Ireland's economy was also a key factor when compared with that of Greece. Ireland gave great attention to attracting new businesses resulting in a growth in the country. Ireland transformed the economy and the business environment in a "paradise" for investments by large companies, multinationals or not. **In contrast** to Greece that there is a huge bureaucracy and businesses do not invest in the country.

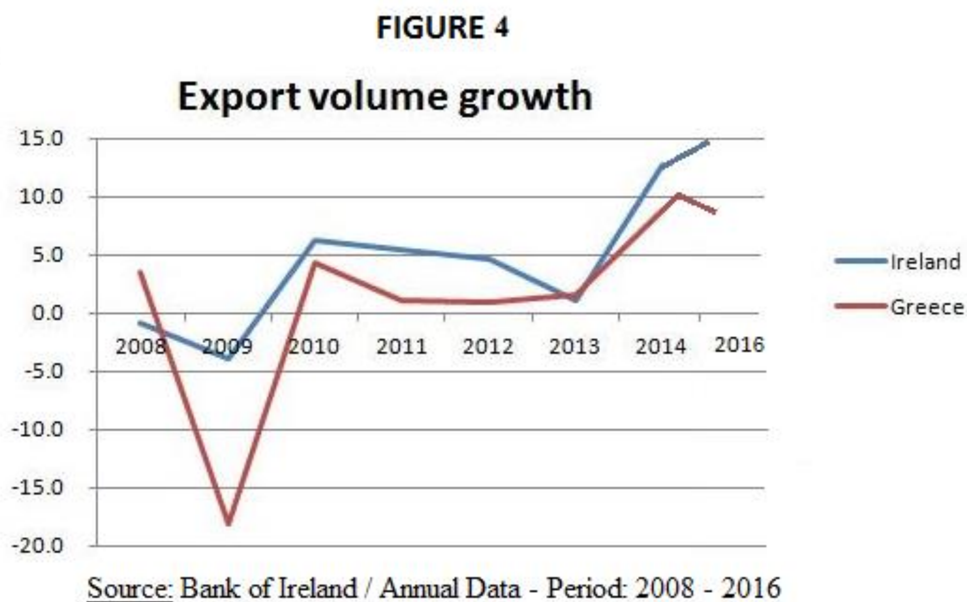
Another major difference between two countries is that Ireland has low taxes (12.5%), as well as reduced interest rates. **In contrast to Greece that there is overtaxation**.

Policy responses to the crisis also varied between the two countries both from the lenders' and the borrowers' perspective. In the beginning of the crisis, Ireland faced more aggressive European Lenders than did Greece, yet it responded to its crisis more quickly and effectively.

Finally and perhaps most important is that in the implementation of austerity measures in Ireland was social acceptance for a better future. Unlike in Greece people were not willing to make tough reforms to fight their fiscal problem.

Here are export volumes in both countries. The pattern is similar, but if anything the improvement in exports has been greater in Ireland than Greece.

FIGURE 4



Source: Bank of Ireland / Annual Data - Period: 2008 - 2016

5. Conclusions

The question arising from our thesis and our econometric analysis is that how Greece may return to growth ?? Even the politicians report for a return to growth. How to achieve this?

The answer is by attracting new Investments and Competitiveness in the economy of Country. (Econometric Model A) With the structural changes in public sector and the eliminate bureaucracy as Ireland teaches us from our research. The long term strategy of the small country in the last 20 years was to acquire production base attracting export business. Many multinational IT and software, pharmaceuticals and financial services went to Ireland exploiting the advantages of the country.

So Ireland, a rural country with a small domestic market, became an exporting Country. Exports currently estimated above 100% of GDP, in Italy where the figure is 30% and Greece 27%.

Greece should immediately make structural reforms by reducing Corporate Tax-Rate, eliminating the huge bureaucracy, increase its competitiveness as a country compared with the rest of the Eurozone, reducing the enormous costs of the public sector, the eliminate of political uncertainty.

Daily, more and more businesses leave the region of Greece in order to ensure better conditions. Multinational companies move to the Balkan regions and thousands of jobs lost in Greece. Greece has to make structural changes in order to attract new Investments.

Only in this way GREECE can hope to return to growth by attracting new investors to the country, which will give new BOOST to the real Economy, new job positions, the stabilization of the economic climate.

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