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THE FISCAL MULTIPLIER IN THE IMF PROGRAMS

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Abstract (100 words maximum)

The accumulation of capital flows in the European periphery experienced, starting from the early ‘00s, was first considered a natural effect of the convergence towards higher output levels. However, after the crisis of 2007-2008, it was clear the risky nature of the accumulation. Soon, Greece, Portugal and Ireland required the intervention of the IMF. In this paper, we will first present the crisis background. We will then focus on the role of the fiscal multiplier in implementing the IMF programs, and we will conclude with an evaluation of the accuracy of the forecasts.

Keywords IMF, Fiscal multiplier, Forecasts, Debt, GDP

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1. Crisis background

On 1st January 1999, the last stage of the European Economic and Monetary Union (EMU) began when 11 members state of the European Union (EU) (Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain) adopted a common currency. Greece joined the euro area on the 1st January of 2001. The Maastricht Treaty of 1992 wanted the EMU structure to be characterized by the European Central Bank (ECB) as an independent central bank with the main goal of maintaining price stability and guaranteeing the respect of a set of prerequisites. These rules were based on a ceiling of 3 and 60 per cent of GDP for fiscal deficit and public debt, respectively. The process to take if a country violated these prerequisites was established by "The Stability and Growth Pact (SGP)" 1997(Takagi,IMF,2016). One of the events which followed the introduction of the euro was the convergence of the sovereign bond yield at a lower level, mainly due to the perception that country and exchange rate risk were eliminated. There are three possible explanations for this phenomenon: firstly, all the sovereign debts were treated risk-free by the financial markets (Buti and Carnot, 2012). Secondly, it was expected for the sovereigns to be rescued in case of an eventual failure, even though there was no mention of a bailout clause (Obstfeld, 2013). Thirdly, the fact that a country could exit the monetary union was not taken into consideration (Takagi, IMF,2016).

A consequence of the convergence was for the borrowing costs to decrease sharply, especially in countries in the European periphery. This resulted in a rise in consumption, investment and economic growth. If we consider Ireland and Greece, in the period 1999-2008, they experienced a growth rate higher than 5% and 3.5% yearly, respectively. It is useful to notice that the average for the euro area amounted to 2.1%. All these capital flows to the periphery resulted in large capital imbalances that were not considered risky at the

time. This phenomenon was considered a natural convergence towards higher levels of output. (Takagi, IMF,2016).

When the financial crisis of 2007-2008 hit, the perception of these imbalances started to move towards a risker one, in which they were seen as possible sources of excess external debt accumulation and possible causes of bubbles. (Belke & Schnabl, 2013).

The events and causes that led to the euro crisis could be grouped into two different views. The first one sees the crisis as a result of policy failures in individual countries. These failures include a lack of productive investments in external borrowing, an absence of fiscal strictness and an incapacity to execute structural renovations (Pisani-Ferry, 2011). The other view identifies the problem in the euro architecture because of the reluctance to transfer more powers to the union or because of the presence of a common currency devoid of common fiscal and banking policies (Buti and Carnot, 2012). Baldwin and Giavazzi (2015) describe with the "consensus view" the reasons for which the aftermath of the sudden stop was widened. This view gives multiple explanations, with the main being the lacking of a national central bank able to act as lender-of-last-resort for its own country, the rigidity of labour and product markets in crisis and the predominance of bank financing.

When the crisis hit, Europe faced an unexpected situation because a procedure to manage the crisis was not included appositely to avoid moral hazard. Article 123 and Article 125 of the Treaty on the Functioning of the European Union prohibited the monetary financing of budgetary deficits and the EU, or any country within it, from assuming the commitments of another state.

However, the situation in Greece, Ireland and Portugal, and especially the heavy dependence of the last two on external financing, required the International Monetary Fund to intervene. In establishing an action plan, the IMF had to take into account the role of the fiscal

multiplier, which was incorrectly estimated according to a great part of the literature. In the following chapters, we will first give a theoretical definition of the fiscal multiplier, also known as the "Keynesian multiplier", and then we will examine how this was estimated in the implementation of the IMF programs.

2. The fiscal Multiplier

To define the fiscal multiplier, we will start by defining it with a simplified equation. If we consider a decrease in public spending (*S*), this will cause a decrease in the GDP (*Y*), which will, in turn, cause a fall in income (*I*) and consumption (*C*), which will again affect the GDP. Hence, a move in S will have an impact on the GDP that could be more or less than one, and this quantity represents the fiscal multiplier (*m*).

Defining as *x* the magnitude of the public spending increase and as *n* the anticyclical effect of the automatic stabilizers, we can define the effect on the government budget as:

$$\Delta S = -(1 - n) \cdot x$$

And the impact on the GDP is as follows:

$$\Delta Y = m \cdot x$$

Defining the Debt-to-GDP ratio as d (*D/Y*), the impact of an increase in public expenditure on the ratio will be:

$$\Delta d = \frac{D - \Delta S}{Y + \Delta Y} - \frac{D}{Y} = \frac{D + (1 - n)x}{Y + mx} - \frac{D}{Y} = \frac{Yx(1 - n) - Dmx}{Y(Y + mx)}$$

$$= \frac{x}{Y + Ymx} \cdot \frac{Y(1 - n) - Dm}{Y} = \frac{x}{Y + \Delta Y} \cdot \{(1 - n) - md\}$$

Hence, the impact of an increase in public spending will affect the GDP by an amount of $\{(1 - n) - md\}$, which could be negative or positive depending on both the fiscal multiplier and the efficacy of the automatic stabilizers. While it is easier to estimate *n* because it is usually stable enough, it cannot be said the same about *m*.

There are multiple factors of uncertainty in which we recall the choice of performing the fiscal adjustment by a spending cut or by a tax increase or by performing it with temporary

or permanent implementations. In this scenario, it is important to also consider what the expectations that the program generates are.

According to a study performed by Antonio Spilimbergo, Steve Symansky, and Martin Schindler (2009), the multiplier is bigger if i) "leakages" are few so that only a small part of the imports suffers from the stimulus, ii) the monetary conditions are accommodative so that a fiscal expansion does not cause an increase in the interest rate, and iii) the situation of a country is stable after being stimulated.

The first condition is respected if i) the fiscal adjustment is implemented first with a government spending component rather than a tax cut. In this way, there is an immediate effect on demand, while consumers are able to save part of a tax cut, ii) the marginal propensity to consume is high, iii) the measures are implemented taking into account liquidity-constrained consumers, iv) individuals do not expect future large increases in taxes to compensate for the debt increase, v) the marginal propensity to import is small, vi) the automatic stabilizers are small and vii) the increase in demand could be accommodated without increasing the interest rates.

Regarding the monetary conditions, they are considered accommodative if i) a fiscal expansion does not cause an increase in the nominal interest rate and ii) the exchange rate is fixed.

It is important to notice that accommodative monetary policies could also increase the multiplier by a factor of 2 or 3. While, with plausible assumptions, the multiplier could be 0 if the monetary policy is only targeting inflation or nominal income.

Regarding the fiscal sustainability of the adjustments, this could reduce the effects of high debt on long-term interest rates (Antonio Spilimbergo, Steve Symansky, and Martin Schindler, 2009)

In this context, we will consider the simplest assumption of the Keynesian model, where the multiplier is mainly influenced by the degree of openness to trade and the marginal propensity to save a country.

A low saving rate and/or degree of trade openness will cause the multiplier to be larger. Also, when there is a situation of low openness to trade, it implies that a low domestic demand cannot be compensated by exports.

Modern theories consider the fiscal multiplier to be small because expectations are considered the main driver of consumption. As a matter of fact, many empirical studies have found support for the expansionary effects of austerity policies. According to this theory, if the adjustments are performed in a credible way, they can boost confidence in consumers, leading to a positive effect on the demand, offsetting the reduction in production caused by the austerity adjustments (Belke, 2013a, 2013b).

However, in the period of 2009-2010, it was difficult to relate to the assumption for which households would adjust their consumption according to their future income rather than their present one because of the credit crunch experienced by multiple countries, which was limiting access to credit.

Thus, the effect of the fiscal multiplier should have been considered stronger.

There are theories according to which, in the period of the euro crisis, the multipliers should have been larger than in normal times (Olivier J. Blanchard, Daniel Leigh, 2013). One of the main theories supporting this idea is the one that sees central banks as not able to compensate negative short-term effects of fiscal consolidation when there is a zero lower bound on nominal interest rates. According to a study by Christiano, Eichenbaum, and Rebelo (2011), performed through a dynamic stochastic general equilibrium model (DSGE), fiscal multipliers can exceed 3.2 in a situation of "liquidity trap". Considering that scenarios

of a liquidity trap is not often occurring, there are not a lot of empirical studies. However, other studies that use theoretical models find the same conclusion.

A study performed by Auerbach and Gorodnichenko (2012b), have found that fiscal multipliers associated with public spending can vary from almost 0 in normal times to 2.5 in recession periods. This said it follows that if growth forecasts are estimated considering fiscal multipliers coherent with normal times, then the forecast errors for growth rates and the fiscal consolidation forecast are supposed to be correlated (Olivier J. Blanchard, Daniel Leigh, 2013).

3. The fiscal multiplier in the IMF intervention

As we said in the previous chapter, the main factors which influence the fiscal multiplier could be simplified as the country's openness to trade and the saving rate. Herby follows the degree of openness to trade in the considered countries in 2009:

Country	EXP as % GDP	IMP as % GDP	Openness to Trade
Portugal	27.9	35.5	0.63
Greece	19.0	29.8	0.49
Ireland	90.7	75.4	1.66

Source: D. Gros et al. (2014). Alcidi & Gros (2010). European Commission Services (AMECO database).

Starting with Portugal, we can notice how the economy was relatively closed since the Openness Indicator stays below the unity. Regarding the saving rate, according to Martin Eichenbaum, Sergio Rebelo, and Carlos de Resende (2016), more than half of the worsening of the current account that occurred between 1995 and 2001 could be attributed to a fall in national savings. Although in the years prior to the Euro crisis, the deteriorated current account could be attributed to the private sector rather than to the public one, it is necessary to consider that the investments made in that period were mainly directed to the housing market and Portugal's export capacity did not benefit from that. One of the main critiques made of the IMF implementation plan was the little attention given to the low saving rates (M. Eichenbaum, S. Rebelo, C. de Resende, 2016).

When estimating the fiscal multiplier for Portugal, the IMF used a standard value of 0.5, which was then revised to 0.8 in 2012. Considering the medium-low openness to trade and saving rates, it follows that this value should have been higher than that.

According to M. Eichenbaum, S. Rebelo, C. de Resende, (2016). Analysis of the latest value had been used in the program forecast, and there would have been 40% less cumulative forecast error related to the real GDP in the period 2011-2014

The situation for Greece was even more problematic because of its low degree of openness to trade and low saving rates.

The propensity to save as part of the total economy started to decline in mid-1995, reaching a rate of 5% in 2011(AMECO data). The main driver of this sharp decline was the decrease in private sector savings that became negative in 2011.

These factors could theoretically imply a large multiplier, thus a large decrease in GDP caused by a fiscal adjustment, which was the case, as we will see later.

Ireland was the only country, within the three examined, which had a high level of openness to trade and to save rates, so it was the only one which could hypothetically obtain a successful fiscal consolidation, the suffering of less cost in GDP, because of the lower fiscal multiplier suggested by the data (M. Eichenbaum, S. Rebelo, C. de Resende, 2016).

The assumptions made by the IMF when estimating the fiscal multiplier for these countries were in line with most models used by the ECB, the European Commission and the IMF, in which the fiscal multiplier was estimated to be lower than 1. It is important to notice that it is not possible to infer the magnitude of a multiplier by regression of growth forecast on the forecast of the attitude on fiscal policy. In doing that, we will incur the risk of estimating multipliers that are almost zero or negative for countries which had a worse outlook and that had planned more fiscal adjustments (Olivier J. Blanchard and Daniel Leigh,2013). It is possible to have negative multipliers in the situation in which they cause a decrease in the confidence of consumers and investors, which is not the case in the examined countries.

According to Olivier J. Blanchard and Daniel Leigh (2013), it is reasonable to think that the average multipliers used when the crisis started were around 0.5. Although it is not easy to identify what assumptions were used in the estimations because they are usually calculated using models in which the multiplier is implicit and depends on multiple economic conditions, however, there is some empirical evidence.

The October 2008 WEO chapter on fiscal policy first (IMF, 2008, p. 177), and the October 2010 WEO chapter on fiscal consolidation (IMF, 2010d), present an estimated average of 0.5 for the fiscal multiplier for 21 advanced economies during 1970-2007 and 15 advanced economies during 1979-2009, respectively.

4. Plan Evaluation

When implementing a fiscal adjustment for Greece, Portugal and Ireland, the IMF had to face some constraints. The first one was that depreciation was not possible in the presence of a common currency. Secondly, the amount of available financing was limited, and lastly, "sovereign debt restructuring" and "bail-in of private creditors" were ruled out by political decisions (Takagi, IMF, 2016).

It follows that the only plausible way of action was the implementation of a strong fiscal adjustment.

Moreover, it is necessary to consider that in planning the fiscal adjustment, multiple factors of the future outcome did not depend on the IMF itself but on the capacity of the national authorities to implement and maintain the program.

We can evaluate the program outcome on two main levels, which are i) if the programs met their targets and ii) if the initial objectives were met, knowing that for all three of the programs the common objectives were aimed to achieve and/or restore i) access to the market; ii) a debt which was sustainable; iii) steadiness from a financial point of view and iv) economic growth (Takagi, IMF, 2016).

Speaking about Ireland, we can say that the program was a success in both meetings its targets and objectives. All the targets, both fiscal and structural, were met soon, with a small exception for a postponement in addressing the issues with mortgage lag and the related policies regarding the insolvency of the individuals. Regarding the second point, i) Ireland regained market access due to a fall in yields on Irish bonds, ii) the debt-to-GDP ratio had followed a steady decline, iii) the obstacles to financial steadiness coming from the banking field have been removed, and iv) the growth had begun to recover starting from 2013, the

output outcome was better than anticipated, the unemployment had fallen steadily, and the quantity outstanding to the IMF was mostly repaid earlier than expected.

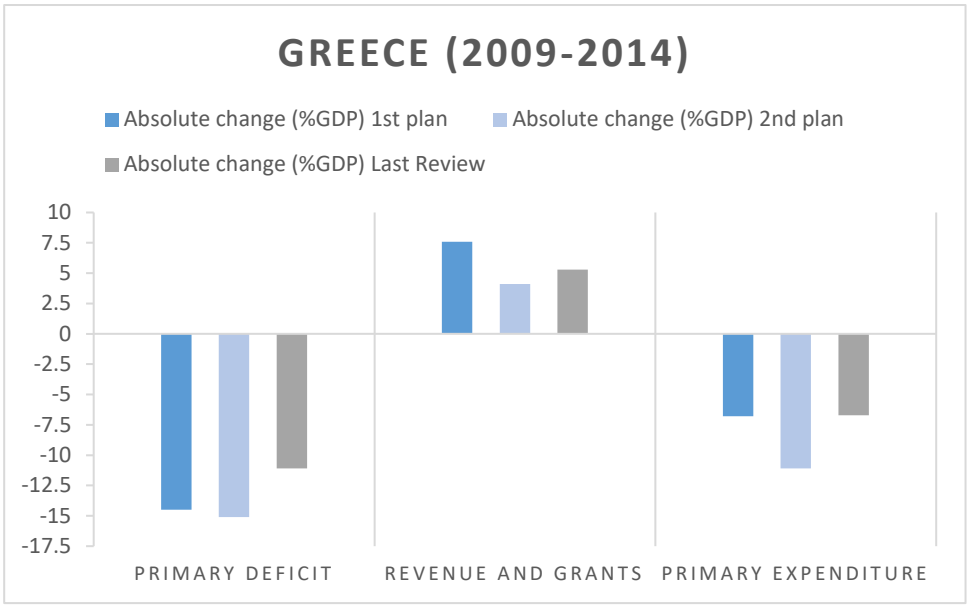
For Portugal, the program was a success only to a certain extent. Most parts of the targets were met, but with mixed results within the country. An assessment made by the IMF after the program was concluded made with the goal of evaluating the results of market reforms related to labour and products in 10 areas in which the measures were adopted. This study showed different results, with some delays in some of the countries. The only missing target was fiscal devaluation.

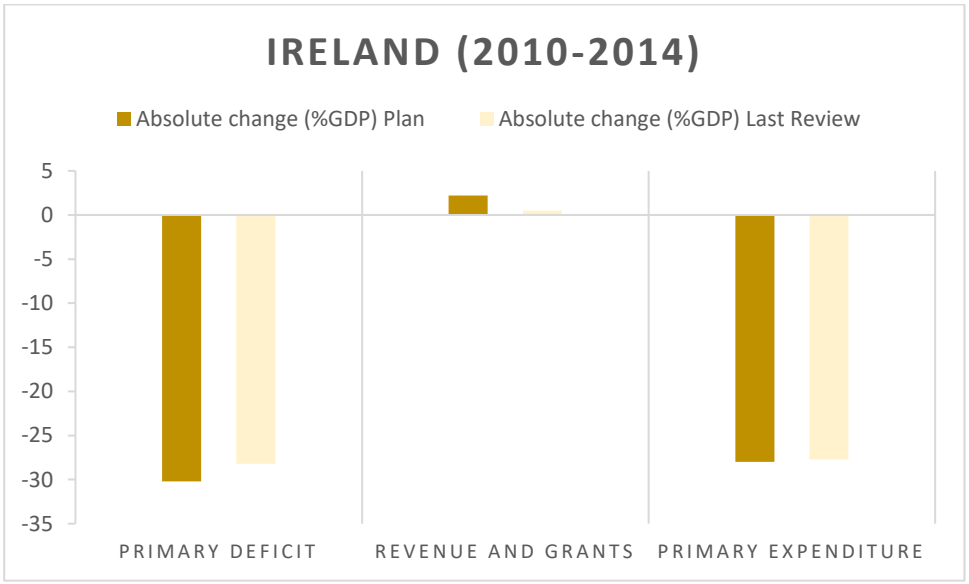
Regarding the objectives, we can say that Portugal i) regained access to the markets in 2013, even if with less favourable conditions compared to Ireland, ii) concerns about debt sustainability persisted even after the end of the program, iii) the financial stability was not reached, the bank sector was still fragile after the end of the program, and some major financial groups declared bankruptcy after it, and iv) although productivity-enhancing structural reforms were adopted, the growth had not picked up.

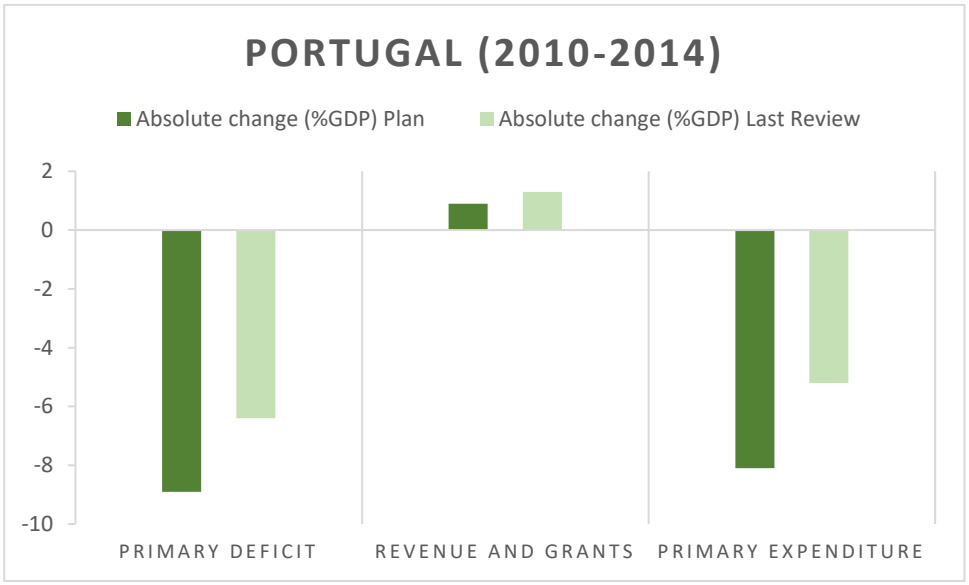
As regards Greece, both the targets and objectives were not met. In 2011, with a political crisis emerging, the program went off track, and a program review made by the IMF in the same year shows that out of a total of 15 improvements related to the macroeconomic field, only six were performed (IMF, 2011d, Table 5).

Moreover, the goal of achieving a declining trend for the Debt-to-GDP ratio was not achieved. The real GDP in 2013 accounted for 77% of the 2009 one, and in the same period, the unemployment rate increased up to 27.5%, starting from a value of 9.6% (Takagi, IMF, 2016).

The below graphs show the main changes in the primary fiscal balances in Greece, Ireland and Portugal in the period 2009 and 2014, compared to what the programs were expecting.


GREECE (2009-2014)
Absolute change (%GDP) 1st plan
Absolute change (%GDP) 2nd plan
Absolute change (%GDP) Last Review
10
7.5
5
2.5
0
-2.5
-5
-7.5
-10
-12.5
-15
-17.5
PRIMARY DEFICIT
REVENUE AND GRANTS
PRIMARY EXPENDITURE


IRELAND (2010-2014)
Absolute change (%GDP) Plan
Absolute change (%GDP) Last Review
5
0
-5
-10
-15
-20
-25
-30
-35
PRIMARY DEFICIT
REVENUE AND GRANTS
PRIMARY EXPENDITURE


PORTUGAL (2010-2014)
Absolute change (%GDP) Plan
Absolute change (%GDP) Last Review
2
0
-2
-4
-6
-8
-10
PRIMARY DEFICIT
REVENUE AND GRANTS
PRIMARY EXPENDITURE

Sources: IMF, Gros et al.,2014.

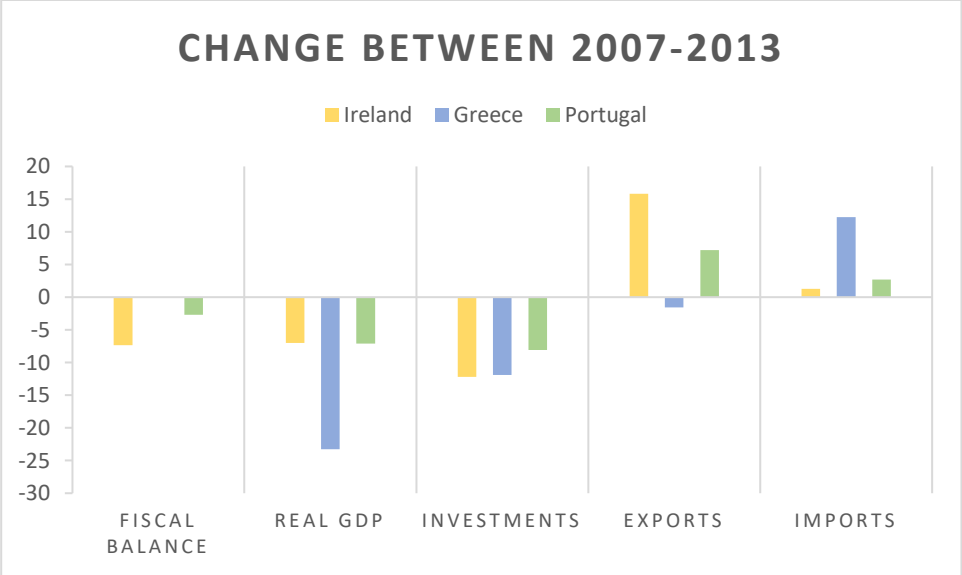
The initial plan designed for Greece was aimed to obtain a surplus in 2010 with measures composed of 40% of cuts in public spending and a 60% increase in tax revenues. However, the huge fall in revenues experienced by the country forced a substantial cut in expenditures. This was reflected in the design of the second plan.

In addition, it is important to specify in which history window we are examining the outcomes of the programs.

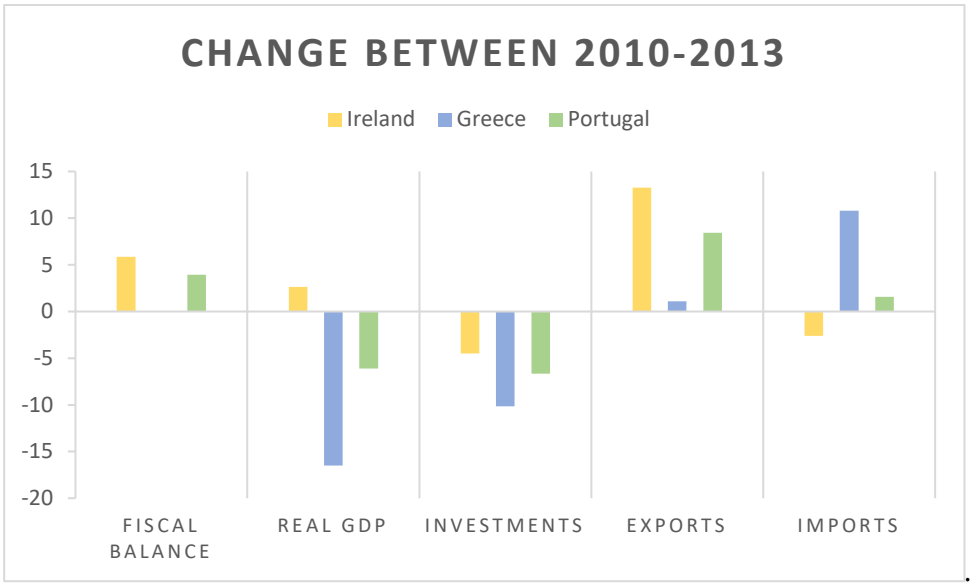
If we consider the macroeconomic adjustments compared to the data of the period prior to the crisis, we need to take into account that we are looking at values which are inflated by the boom experienced in those years.

Herby follows a table with the values of some of the factors which are considered exogenous in a Keynesian framework.

Change between 2007 and 2013



Change between 2010 and 2013



Source: D.Gros et al.,2014, based on European Commission Services (AMECO), 2013. 18

If we look at the differences between the two tables, it is difficult to argue that austerity was accountable for the fall in GDP. If we take as an example the case of Greece in the period 2007-2013, we would have needed a fiscal multiplier higher than 8 to believe that a fall in GDP of almost 20% for a reduction in the deficit of less than 3% could be reasonable. It is true that if we look only at the period since the start of the program, it is possible to observe a reduction in deficits in all three countries; hence we can say that there has been austerity. And only in this last period is it possible to argue that austerity, coupled with a reasonable magnitude for the multipliers, could be responsible for the drop in GDP. While if we consider the data between 2007 and 2013, it could be argued that Ireland and Portugal had experienced expansive policies (D.Gros et al.,2014).

As a final note to the results of the fiscal adjustments performed by the IMF, it is necessary to consider that it is not easy to evaluate to which extent the IMF is responsible for the outcome itself. Some argued that the IMF-supported programs were needed to give the European policymakers the necessary time to implement structural improvements, which were essential in order to provide the euro area with more resilience to face the crisis

(Takagi, IMF, 2016). It is argued that the main contribution in this context has been made by the announcements and decisions executed by European authorities. Especially during the summer of 2012, when it has been announced the proposal for a banking union, the famous "whatever it takes" to save the euro by Mario Draghi, and the ECB announcement of Outright Monetary Transactions. This thesis could also be proved by the fact that, even if initially there has been a favourable reaction by the financial markets to the announcement of the Greek program, spreads on sovereign debt hardly moved until 2012.

5. Accuracy of Forecasts and Literature Review

It is clear from the data presented in the previous chapter that the forecast made by the IMF has been excessively optimistic.

Moreover, the programs resulted in being optimistic also regarding the capacity of the national policymakers to perform a huge amount of reforms, at least in Greece and Portugal.

Finally, coming back again to the underestimation of the fiscal multiplier, the IMF Staff used a fixed value of 0.5. As has previously already been said, this value was the one assumed in the past for advanced economies. However, as we already pointed out, given the impossibility of devaluating the currency or ease the monetary policy, the value of 0.5 was inappropriate in this context (Takagi, IMF, 2016).

In a study performed by Eichenbaum, Rebelo, and de Resende (2016), it is shown that if the revised value of 0.8 had been used for the Portugal fiscal multiplier, almost 40% of the forecast error would have been eliminated for the GDP in the period 2001-2014. The same study shows that a multiplier of 1.1 would have completely eliminated the cumulative forecast errors. As regards Greece, Gros and Alcidi (2010) showed that the fiscal multiplier for Greece should have been around 2.5, given its low level of openness to trade and savings rate. However, it is worth noting that given the political crisis and its effect on the market's confidence, almost any multiplier would have been considered as too small ex-post (Takagi, IMF, 2016). The only country in which it was appropriate to use a multiplier with a magnitude of 0.5 was Ireland due to its medium-high openness to trade and savings rate.

At the same time, we can notice optimistic views also when considering the forecasts about debt sustainability. When implementing analysis about the latter, the IMF used some templates based on a few standard scenarios.

In 2011, some areas of improvement were identified by the Executive Board in the IMF's framework for debt sustainability and fiscal policy in market-access countries. Some of the areas identified included the coverage of fiscal balance and public debt, the elements of vulnerability related to the latter and the plausibility of the underlying assumptions (IMF, 2011c). In 2013, a reassessment of the previous framework was performed in order to give a more thorough study based on debt burden indicators and funding availability to assess debt sustainability (IMF, 2013d). Regarding the fiscal multipliers, the IMF concluded in 2012 that the actual ones were definitely bigger than what was expected in the forecasts (IMF, 2012a).

Olivier J. Blanchard and Daniel Leigh (2013) performed a study to analyze if growth forecast errors and fiscal consolidation forecasts have been systematically correlated. The approach used in based on a regression of the forecast error for real GDP growth in year t and t+1 on a forecast made early in year y for t and t+1. The two-year interval is considered to include also lagged effects of fiscal policy.

The equation estimated is:

$$Forecast\ Error\ of\ \Delta Y_{i,t:t+1} = \alpha + \beta\ Forecast\ of\ \Delta F_{i,t:t+1|t} + \varepsilon_{i,t:t+1}$$

Where $\Delta Y_{i,t:t+1}$stands for the cumulative growth of GDP (Y) in the economy I and its associated forecast error is $\Delta Y_{i,t:t+1} - f\{\Delta Y_{i,t:t+1}|\Omega_t\}$, with f denoting the forecasting conditional on the information set available early in year t, Ω. $\Delta F_{i,t:t+1|t}$stands for the change in the general government structural fiscal balance in per cent of potential GDP. Positive values of this measure stand for fiscal consolidation, while negative ones indicate discretionary fiscal stimulus. Its associated forecast is still conditional to the set of information available at early year t. Assuming that the fiscal multipliers implied in the forecast were accurate, the coefficient β should be zero.

The findings show that there is a negative correlation between the growth forecast error and the fiscal consolidation forecast made in 2010. To be more specific, the estimation of the coefficient shows that "for every additional percentage point of GDP of fiscal consolidation, GDP was about 1 per cent lower than forecast" (Olivier J. Blanchard, Daniel Leigh, 2013).

The study also takes into account the possibility for the data to be influenced by i) outliers, ii) other variables, and iii) the scenario in which some countries could have implemented more austerity policies than what was initially planned.

The final result of this study is that the actual multipliers early in crisis would have been "substantially above 1" (Olivier J. Blanchard, Daniel Leigh, 2013).

We already discussed how the fiscal multiplier had been underestimated because of the assumption of a constant multiplier of 0.5 used for advanced economies. We will now focus on whether it was plausible or not to assume that the estimations made for Portugal, Greece and Ireland should have been performed with the same multiplier.

We can perform this additional analysis by collecting the data for the three countries regarding GDP growth, annual growth of Imports of goods and services (%), annual growth of Exports of goods and services (%), and Gross savings (% of GDP), which are calculated as gross national income less total consumption, plus net transfers.

You can find below three tables containing the average data for every country, based on three periods, which are i) 1990-2001, the years before the adoption of the common currency, ii) 2001-2010, the years of the accumulation and the crisis, prior to the intervention of the IMF and iii) 2010-2014, the years of the implementation of the IMF programs. You can find graphs for each of these periods in the Appendix.

Country Name	Average	1990-2001	2001-2010	2010-2014
Greece	GDP growth (annual %)	2.39	1.83	-4.95
Greece	Imports of goods and services (annual % growth)	8.21	1.66	-3.05
Greece	Exports of goods and services (annual % growth)	8.08	1.96	3.50
Greece	Gross savings (% of GDP)	-	10.30	8.24

Country Name	Average	1990-2001	2001-2010	2010-2014
Portugal	GDP growth (annual %)	2.92	0.74	-0.83
Portugal	Imports of goods and services (annual % growth)	7.65	2.38	1.59
Portugal	Exports of goods and services (annual % growth)	5.28	3.20	6.14
Portugal	Gross savings (% of GDP)	22.44	14.04	13.66

Country Name	Average	1990-2001	2001-2010	2010-2014
Ireland	GDP growth (annual %)	7.02	2.92	2.55
Ireland	Imports of goods and services (annual % growth)	13.31	4.53	3.58
Ireland	Exports of goods and services (annual % growth)	14.73	5.26	5.17
Ireland	Gross savings (% of GDP)	-	21.60	18.51

The data for Gross savings are available starting from 2005 and 2006, respectively, for Greece and Ireland. Hence, the average is performed on the years in which information is available.

Source: Author's calculations and World Bank Data

The values of the 2001-2010 historical window are influenced by the consumption boom and by the crisis that followed. Thus, assuming that these distorted data are the reason for which the IMF adopted a standard value of 0.5, we can analyze the data of the previous period. While Greece and Portugal have a common range of data, the situation is clearly different for Ireland. Still assuming that the fiscal multiplier is influenced by openness to trade and savings rate, it is possible to infer from the data that a smaller multiplier should have been used for Ireland compared to the one used for the other two countries. This is clear looking at both the first and second historical windows.

Looking at the graphs (Exhibit 1, 2 and 3), it is even more noticeable how the economic situation was different in Ireland compared to the other two countries. The first one had only slightly negative values in the whole period from 1990 to 2014, while cannot be said the same for Portugal and Greece.

6. Conclusion

Finally, it is true that the outcomes of the IMF programs could not be attributed as a whole to IMF itself because of the role of the political authorities of the respective countries in implementing and maintaining said policies.

As we discussed, there are multiple factors which are able to affect the results of austerity policies, in which we recall the expectations about future consumption and the monetary policy announcements.

It is also true that it is not possible to infer the precise value of the fiscal multiplier that has been used when estimating the growth forecasts for Ireland, Portugal and Greece.

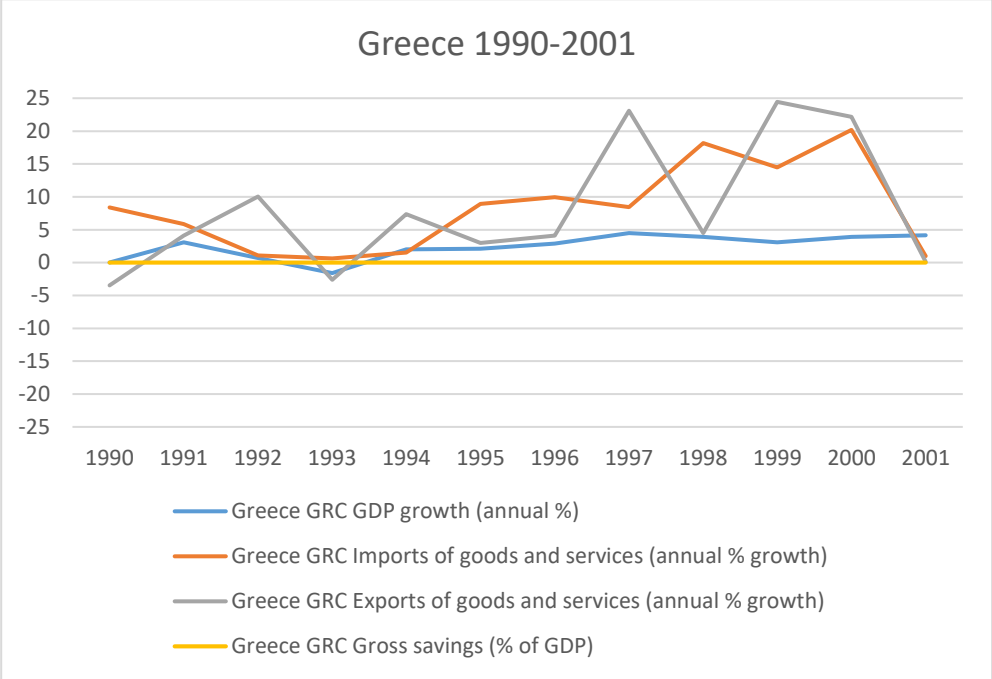
However, it is reasonable to think that a standard multiplier of 0.5 has been used when implementing the plans, and it has been admitted by the IMF that this value has been underestimated.

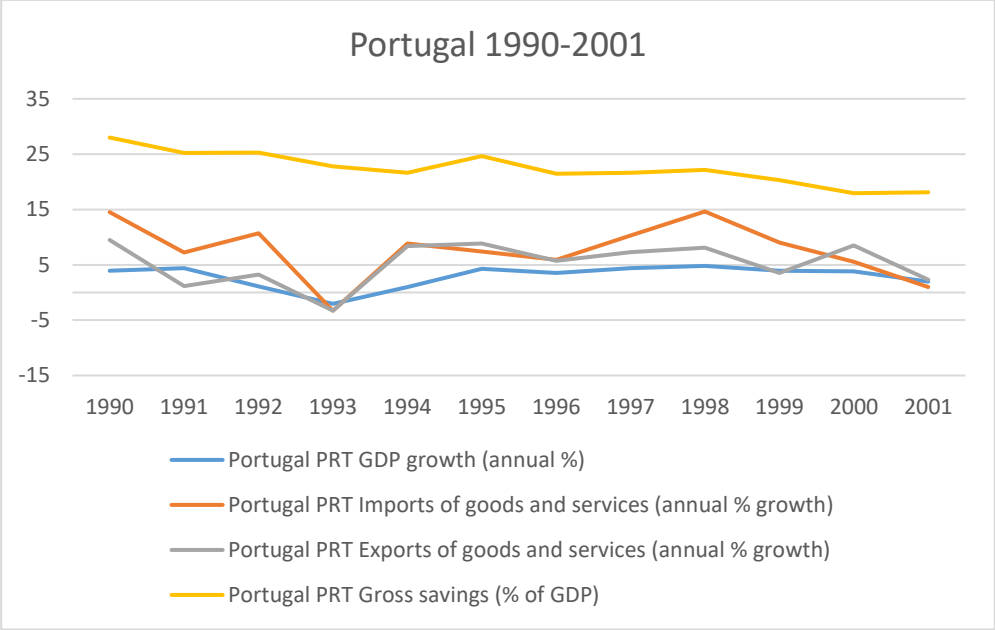
As a matter of fact, it has been shown by a great part of the literature how the utilization of a bigger multiplier could have reduced the GDP forecast error.

To conclude, not only the fiscal multiplier has been underestimated, but it is also reasonable to think that there were no the circumstances to believe that it would have been appropriate to use the same value for the fiscal multiplier in the three countries.

Appendix

Exhibit 1. 1990-2001





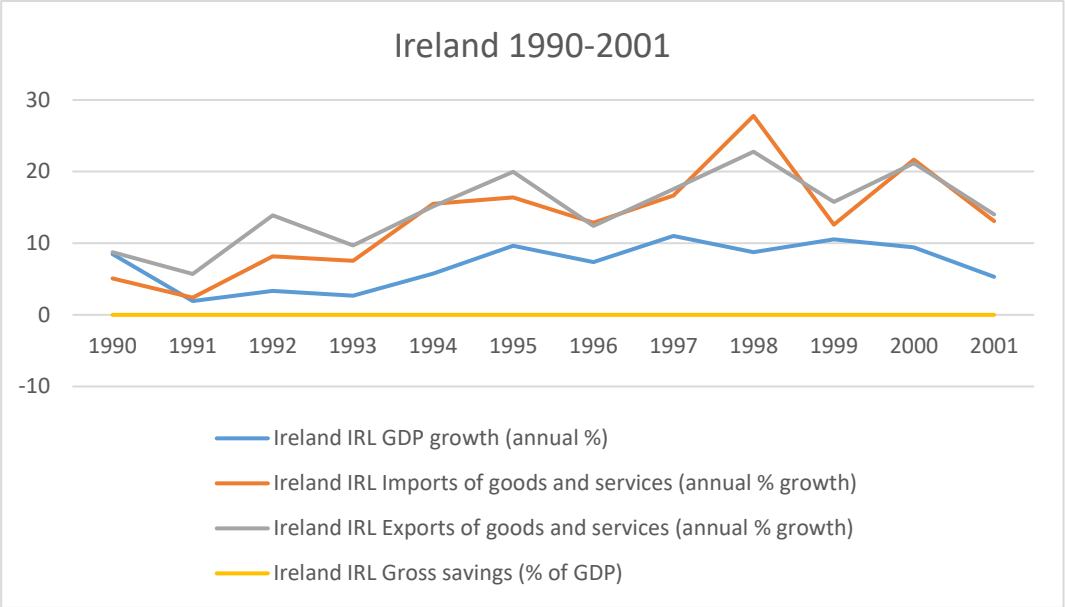
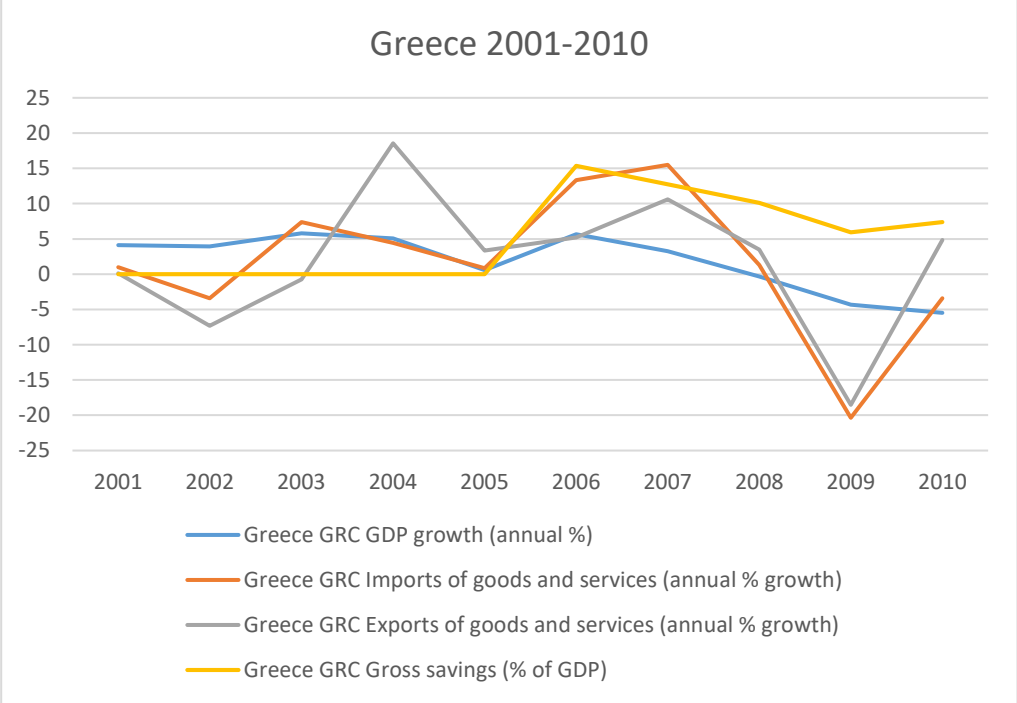
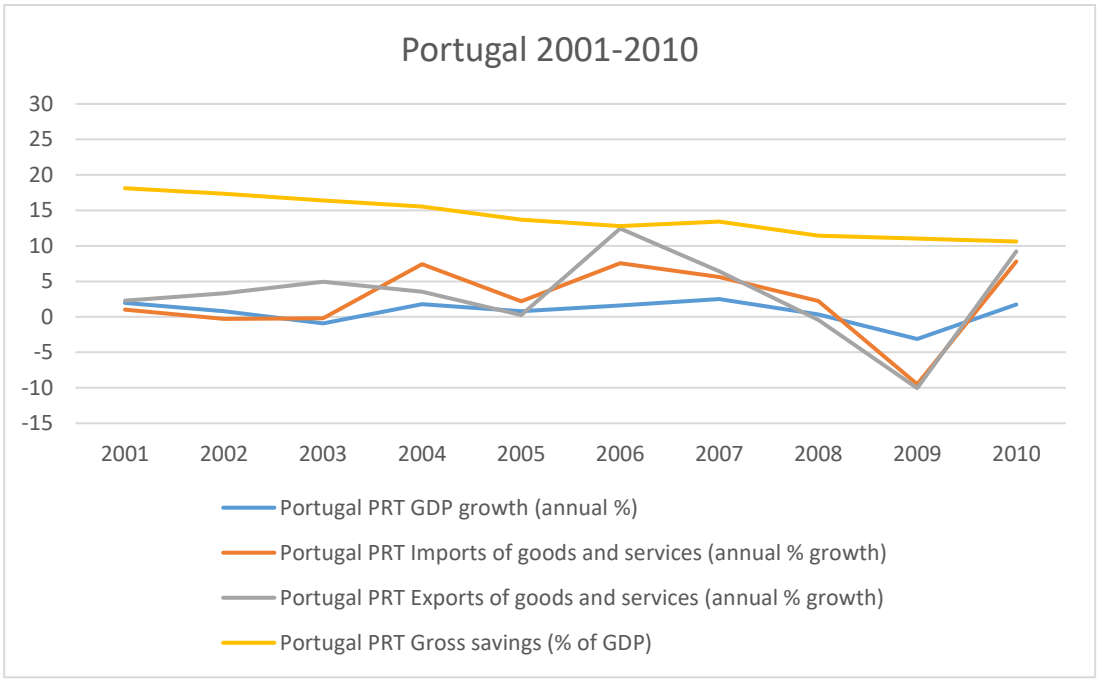


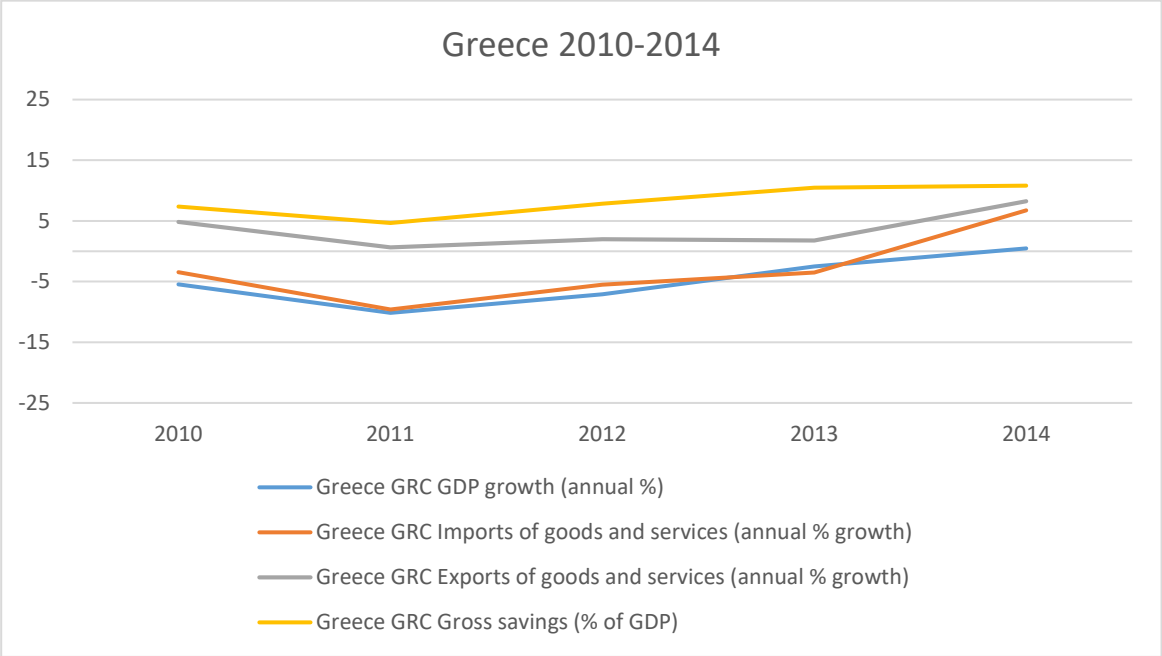
Exhibit 2. 2001-2010

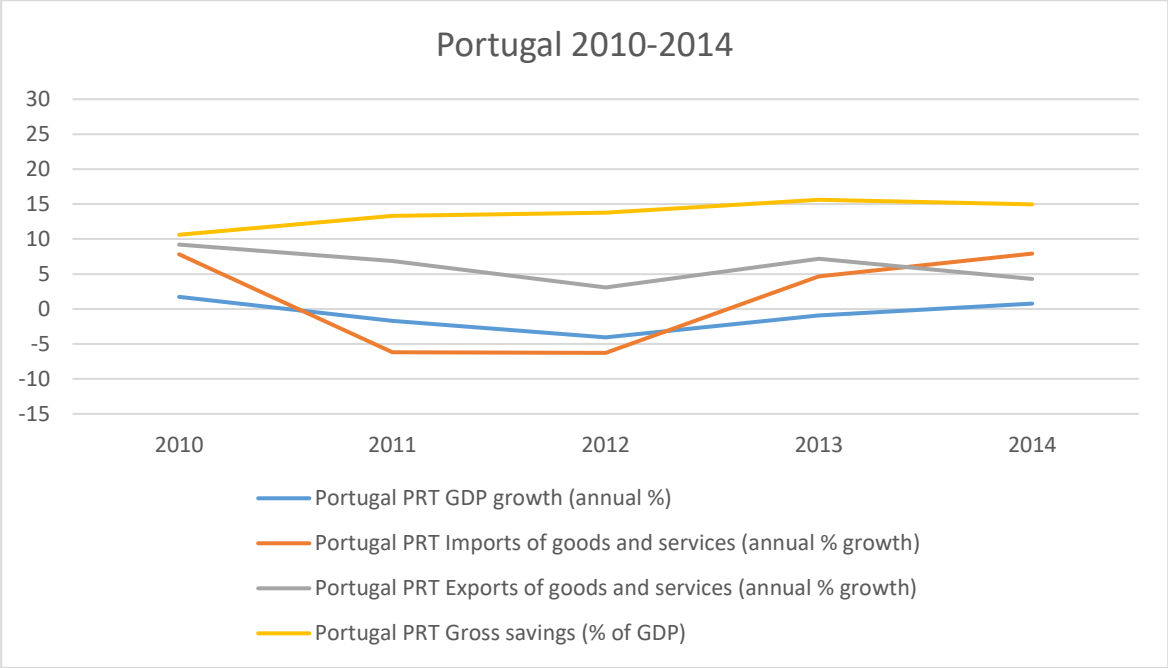



Portugal 2001-2010
30
25
20
15
10
5
0
-5
-10
-15
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Portugal PRT GDP growth (annual %)
Portugal PRT Imports of goods and services (annual % growth)
Portugal PRT Exports of goods and services (annual % growth)
Portugal PRT Gross savings (% of GDP)


Ireland 2001-2010
30
20
10
0
-10
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Ireland IRL GDP growth (annual %)
Ireland IRL Imports of goods and services (annual % growth)
Ireland IRL Exports of goods and services (annual % growth)
Ireland IRL Gross savings (% of GDP)

Exhibit 3. 2010-2014





Source: World Bank Data

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