The Greek Odyssey: 10 years of crisis

Introduction

In 2010 then Greek Prime Minister George Papandreou announced that the Greek government defaulted on its sovereign debt asking for economic assistance from other EU member-states via the pre-arranged support mechanism. In his words, the Greek people faced a new Odyssey of bailouts and although he reassured everyone that they knew the way to Ithaca they tragically needed 3 memoranda, of a combined value surpassing €300bn to find that path.

The Greek economy had collapsed the last decade once it was hit by the worst recession ever seen in Europe in peacetime. Reinhart & Rogoff (2014) describe the Greek crisis as a combination of banking crisis and currency crash alongside sovereign default and their estimations show that Greece lost more than 24percent of its GDP while requiring at least 12 years to return to the pre-crisis level. Their paper was written in 2014, when Greece slightly tried to recover from the depression and the failures of two bailout programs, but in August 2015 the Greek Parliament voted, almost unanimously, for the implementation of a third bailout program of €86bn from the European Stability Mechanism (ESM), the European Commission, the ECB and the IMF.

Undoubtedly, the Greek depression has not just been an unexpected event as a consequence of the Great Financial Crisis in 2008, but it is the result of malfunctioning domestic fiscal policies, low productivity rates and of course the reluctance of the EU to enforce more effective examination of member states finance. Keynes famously wrote in a letter "The boom not the slump is the right time of austerity at the Treasury" and the Greek crisis proved him right. The purpose of this paper is to examine the economic mistakes of the Greek crisis, present a more functional monetary policy rule and to provide a long-term debt sustainability analysis.

The austerity paradox

In 2009 the Greek debt to GDP ratio was at 126.7 percent and the government deficit exceeded 15 percent of GDP, both well above of the Growth and Stability Pact criteria of 60 percent and 3percent of GDP for debt and deficit, respectively. The macroeconomic approach in early 2010 was heavily attached to two specific academic papers. Firstly, the work of Reinhart & Rogoff (2010) alleged that public debt levels above 90 percent of GDP for advanced economies decrease growth rates by a mean of 1 percent. The conclusion of this exact paper is that countries should be afraid of fiscal stimulus that increase public debt and should better prioritise on the implementation of expansionary monetary policies, leaving public debt unchanged.

The second paper, of Alesina & Ardgna (2010), provided evidence on the effectiveness of expansionary austerity. Many advanced economies over the years had experienced positive effect on output despite austerity and they made a clear distinction between tax-based and spending-based fiscal consolidation, with the former seemed as contractionary while the later had proven to be expansionary even in the short run. Incrementally, these two papers turned into an undeniable doctrine for policymakers and Northern European "hawkish" economists has cited both these papers many times since 2010.

To be honest, the IMF had followed the recipe of fiscal consolidation almost to all of its previous bailout programs, and European nations were no exception. Nonetheless, the EU

member states differentiated from other major IMF programs once they did not have a domestic currency to be devaluated and they had already open borders with its trading partners with near-to-zero tariffs. So, the IMF and its EU counterparts, the so called “Troika”, had only one remaining remedy for the Eurozone countries and they heavily emphasised on the importance of long run fiscal consolidation. But, Greece in real terms was no different from developing economies and Gourinchas, Phillipon & Vayanos (2016) stated that the Greek crisis is a combination of initial debt levels of an advanced economy with an emerging market sudden stop.

Gourinchas, Phillipon & Vayanos (2016) claimed that the size of the initial macroeconomic and financial imbalances of Greece accounted for much of the depth of the crisis and they calculated that austerity triggered approximately 50 percent of the output drop from peak to through. The mistakes of fiscal consolidation could not be identified in early 2010’s because economists believed that these were the essential measures to deal with fiscal irrationalism in the long term and that the Alesina & Ardagna approach of expansionary austerity would work in the short term.

In Greece, at least, the assumption of expansionary austerity utterly failed, and it costed the country an extra €140bn through the second bail-out program signed in 2012 to solve the mistakes of the first memorandum. Blanchard and Leigh (2013) presented in their paper that there was a significant negative relation between fiscal forecasts made by the IMF in 2010, about the countries that contracted an agreement with the IMF, and subsequent growth forecast errors. In their sample of bailed-out economies they estimated that for every additional percentage point of GDP of fiscal contraction, GDP was about 1 percent lower than forecast.

Olivier Blanchard was the IMF chief economist throughout the European Debt Crisis and that paper was perceived by his colleagues as the IMF “mea culpa”. On the contrary Alesina & Ardagna (2013), and Alesina himself with other economists afterwards, concentrated their empirical research on expansionary austerity and they have shown that their initial approach to this exact matter stands even today. I believe that the most recent and concrete criticism to this conventional thinking comes from Breuer (2019) providing evidence that this approach is biased towards expansionary effects, particularly in the case of expenditure cuts, which have been described as expansionary. Breuer (2019) shows that the estimates of expansionary fiscal consolidation are affected by reverse casualty and that the expansionary effects disappear after controlling for cyclical effects and assuming expenditures to be different from unit-elastic.

The paradox of austerity in Greece derives directly from Keynes quote. After 1999 and the introduction of the common currency Greek bond yields fell sharply and from 2004, they were almost equalised to those of Germany. Considering the higher growth rates in early 2000 and that the public debt to GDP ratio was still near 100 percent, fiscal consolidation would have been more effective from 2002-2006 followed by moderate fiscal stimulus in the coming years of the Great Recession.

Many observers had raised concerns about the necessity of austerity in southern European countries in 2001, but the EU was still reluctant to play a more decisive role on requiring a better fiscal position for its member states. Economists, even today, mistakenly allege that the reason why Greece did not join the euro until 2000 was its enormous debt, but many other Eurozone member states had similar debt levels. The truth is that the drachma was devaluated in March 1998, and to join the Eurozone a national currency should not have been devaluated for at least two years (BoG, 2000). Nevertheless, the failures of the Greek economic strategies

should also be attributed to the inefficiency of monetary policy and the inaccurate reforms implemented by the Greek government.

The challenges of internal devaluation

Germany in the 1990's, after the process of reunification, was often described as the "sick man of Europe" trying to harmonise the industrial Western with the failing Eastern Germany. The successful prescription used then was a combination of fiscal tightness and labour market reforms, implemented by both the Christian-Democrats of Kohl and the Social-Democrats of Schröder and this exact economic agenda was retested in 2010.

The idea of internal devaluation in Greece was proposed by policymakers to increase the country's competitiveness once there was a single currency that could not be devaluated on the will of one exact government. Mundell (1961) pioneered the research concerning the creation of an optimum currency union describing an environment comprised by many regions either with flexible exchange rates or with a common currency. In a currency area comprising different countries with national currencies- the European Economic Community- the pace of employment in deficit countries is set by the willingness of surplus countries to inflate, while in an economic area of a single currency- the Eurozone- the pace of inflation is set by the willingness of central authorities to allow unemployment in deficit regions.

Major EU institutions were afraid of inflation and they thought that by allowing unemployment to increase moderately they will avoid an inflationary shock and the output loss could be handled by expansionary austerity. That concept could only work if the productivity rates of the periphery were converged to those of the core. Greece had failed miserably to converge the productivity rates with its Northern counterparts. The major problem has diachronically been the country's ineffective and obsolete institutions and as it is presented by Christodoulakis (2019) the unprecedented fall in GDP derives directly from failing institutions, the intensity of economic activity and different patterns of competitiveness.

Unfortunately, the last factor is greatly associated with the failures of the EU as a whole. Current account surpluses of core countries led to the steep deterioration in the periphery's external borrowing position and was associated with sizeable competitiveness losses and as presented by Eggertsson, Ferrero & Raffo (2013) the real exchange rate of Greece was appreciated 15percent relative to Germany over the period 2000-2008. In the same paper they examine the ineffectiveness of structural reforms at the Zero Lower Bound (ZLB) and their conclusion is that these reforms do not support economic activity in the short-run and may well be contractionary.

Once more, it was crucial for Greece to implement the right policies at the right time. In 2001 Tasos Giannitsis then Minister for Labour and Social Insurance provided a legislation concerning reforms on the Greek insurance system to boost the country's productivity. These proposals seem quite similar to those made by Greek governments throughout the past decade and to be honest, if Giannitsis was not sacked back then and his proposal turned into an act then Greece would be better prepared to handle the crisis and avoid enforcing these necessary measures when the economy was in turmoil.

Nonetheless, it is also true that Greece in early 2000 was heavily affected by negative spillovers due to the fiscal expansion of other Eurozone member-states. The reluctance of Greek governments to behove to productivity improvements of the core made the country unable to meet its debt obligations while if Greece had implemented those total-factor-

productivity reforms both core and periphery countries would have benefited in an asymmetric fashion (Ioannides, 2019).

Greece was incapable to handle the economic consequences of internal devaluation because the country lacked the resources to support the real economy, its taxation policy had contributed to fiscal appreciation[1] discouraging foreign investments and the banking system had utterly collapsed. For many decades, the propensity of savings has steadily decreased and the reckless actions of banks to provide loans with little or no supervision forced Greek governments to spend more than 45.6 percent of GDP throughout the last decade to support the 4 systemic banks. The total fiscal cost of government intervention accounted for 20 percent of Greek GDP (Igan et al., 2019) either via bank recapitalisation or nationalisation.

The Greek banking system did not have the equity to provide liquidity to the economy and although it was generally believed that monetary policy was the only game in town, Greek bonds were considered, until recently[2], insufficiently credible to be included to the ECB Asset Purchase Program. During its first two years of implementation the APP- as examined by De Santis (2016)- had successfully reduced euro area government bond yields and in the case of Portugal, a country quite similar to Greece, government yields decreased by 106bp. So, Greece could have had more fiscal space for stimulus if its debt were incrementally monetised and the negative outcomes of internal devaluation and banking sector recapitalisation could have probably faded away.

Monetary Policy and the Taylor Rule

The role of monetary policy in the Eurozone is to provide stable prices. This idea could have worked properly in the era before the Great Recession, where minor asymmetric shocks were managed by fiscal authorities. On the contrary the European Debt Crisis, and especially the case of Greece proved that ECB actions were too little, too late. The ECB, because of its price stability mandate, decided to increase interest rates twice in 2011 forgetting anything from the Friedman-Schwartz “magnum opus” of the Great Contraction. Also, the ECB launched its QE in 2015, many years after QE1 of the Fed in November 2008.

Just before the Covid-19 outbreak the ECB publicly claimed that the Governing Council was prepared to re-examine its policy targets, now postponed for 2021, and the role of monetary policy in the Eurozone as well. The ECB, through its 2percent target regime has accomplished to become one of the most politically independent Central Banks in the world, but lacking policy coordination of monetary and fiscal authorities, this target turned into a straitjacket.

Sims (2016) extensively examined the importance of a policy-mix and Central Bank independence and he found firstly that expansionary deficits in the ZLB should primarily be financed by inflation, that fiscal authorities in the ZLB should aim at meeting inflation targets and finally that reduction in interest rates can stimulate demand only if they are accompanied by effective fiscal expansion. So, fiscal authorities have a critical role to play in determining the inflation target, but what role can monetary authorities have in determining fiscal targets?

In Figure 1 we graphed three different equations derived from the second part of the Inertial Taylor Rule as it has been described by Bernanke, Kiley & Roberts (2019). In equation 1 we have used the ordinary rule with price inflation data, in equation 2 we have used until labour

[1] Fiscal devaluation was described by Farhi, Gopinath & Itskhoki (2011) as a taxation policy that can depreciate the real exchange rate of a country in a currency union.

[2] In April 2020, the ECB announced that Greek bonds will be included to its QE program due to the Covid-19 crisis despite remaining below the minimum credibility levels.

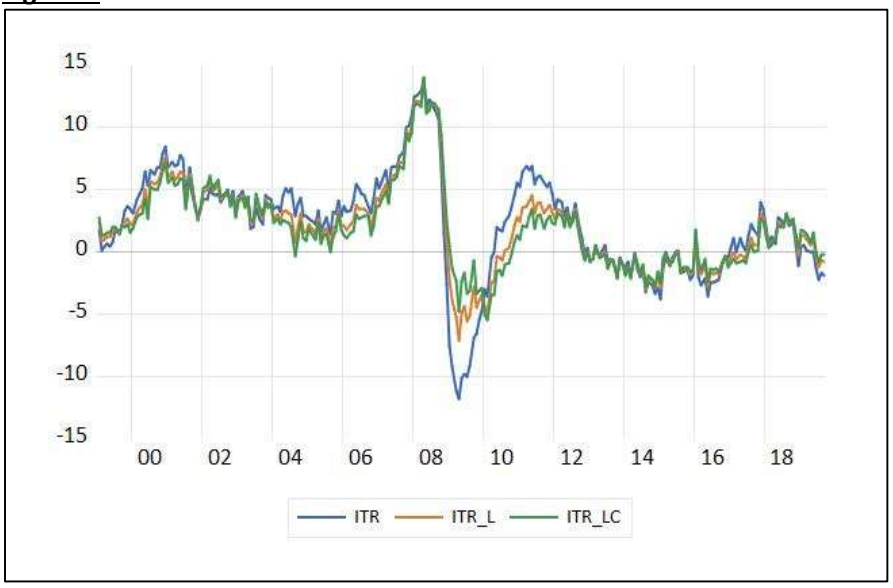
cost inflation instead of price inflation and in equation 3 we have both price inflation and unit labour cost inflation. During the Great recession itr, the variable having only price inflation, fell more sharply compared to the two others, indicating the need of further rates cuts during that time, but during the bust of the European debt crisis, itr moves far above than the other variables which persistently remain closer to zero.

$$itr_{\tau} = r^* + \pi + 0.5(\pi - \pi^*) + \hat{y},\ t: 1999M1\text{-}2019M9 \quad (1)$$

$$itr\_l_t = r^* + c + 0.5(\pi - \pi^*) + \hat{y},\ t: 1999M1\text{-}2019M9 \quad (2)$$

$$itr\_lc_t = r^* + c + 0.5(c - \pi^*) + \hat{y},\ t: 1999M1\text{-}2019M9 \quad (3)$$

Figure 1



Source: r*, natural rate of interest, was provided by the Federal Reserve Bank of New York data based on the Holston-Laubach - Williams (2017) model. π, refers to the harmonised index of consumer prices of the ECB, while c stands for the year-to-year percentage change of unit labour cost data from the ECB. Finally, the output gap for our monthly data was estimated based on the Industrial Production Index of the ECB using the HP filter, similar to the approach of Kazanas & Tzavalis (2015).

The first two variables indicate a combination of both monetary targets consisting the price inflation and the inflation target and also more general fiscal targets with the output gap, the natural rate of interest and of course the unit labour cost. The third variable, itr_lc, describes more generally a fiscal target supported by monetary authorities, neglecting the current inflation level. For this exact reason we have excluded the third equation in our estimations of the Taylor Rule.

In equation 4 and 5 we have the Taylor rule using equation 1 and 2, respectively. We have considered EONIA as the policy interest rate of the ECB and we have also included an extra lag of interest rates to better adjust our monthly data, and an extra lag of itr variable because of time inconsistent real data. The OLS estimation, Table 1, was used for the model and we have data from January 1999 to June 2014, when interest rates in the Eurozone turn negative.

From the beginning of our sample through September 2008, the peak of the Great Financial Crisis, we stick to the 2 percent inflation target of the ECB, but from October 2008 and onwards we had increased the inflation target to 4 percent, a proposal often made by US economists (Krugman,2013). As Bernanke (2020) pointed out in his 2020 presidential address to the AEA higher inflation targets have similar output results as QE and forward guidance, but with higher welfare costs. This simple model absorbs the robustness of the new-

conventional monetary policies by introducing a higher inflation target without examining further its undeniable social consequences.

$$i_t = \rho_1 i_{t-1} + (1-\rho_1)\, itr_t + \rho_2 i_{t-2} + \rho_3 itr_{t-1} + \varepsilon_{1,t}\ ,\ t\text{: 1999M1-2014M6} \quad (4)$$

$$i_t = \rho_1 i_{t-1} + (1-\rho_1)\, itr\_l_t + \rho_2 i_{t-2} + \rho_3 itr\_l_{t-1} + \varepsilon_{2,t}\ ,\ t\text{: 1999M1-2014M6} \quad (5)$$

Table 1

	Equation 4	Std Error	t- Statistic	**Equation 5**	Std Error	t-Statistic
ρ_1	0.946509***	0.00924	102.438	0.953753***	0.01071	88.979
ρ_2	0.023510**	0.01071	2.194	0.021218*	0.01216	1.744
ρ_3	-0.037929***	0.00930	-4.076	-0.033439***	0.01076	-3.107
R^2	0.991020	-	-	0.9896	-	-

Note: *significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent

Hence, the ECB has to decide whether to introduce a higher inflation target or to revise its charter so as to implement more easily the new conventional monetary policies. Although, it seems naïve to debate on whether or not the ECB can enforce for example QE, it is worth remembering that the current president of the Bundesbank Jens Weidmann once testified in front of the Constitutional Court of Germany against the APP backing its illegitimacy with the EU law.

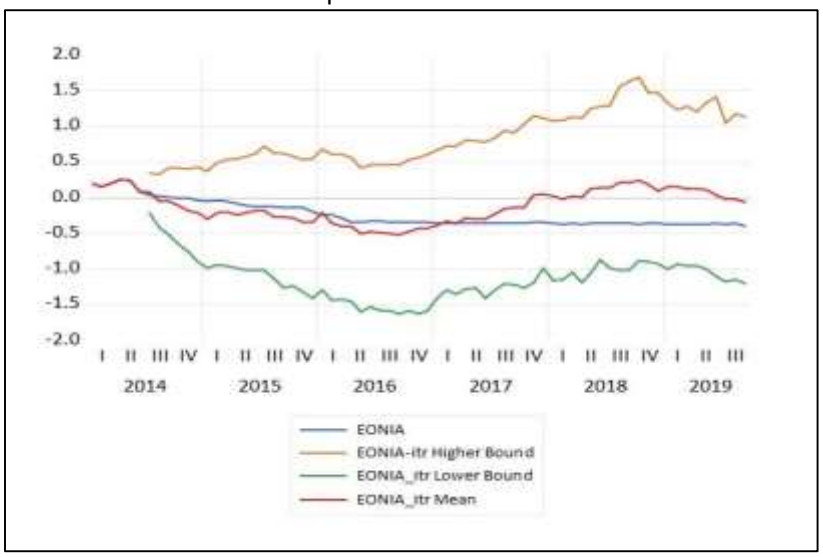
But the major problem that the ECB faces nowadays is its incompetence to deal with the consequences of internal devaluation during asymmetric shocks. Many economists[3] have examined the persistence of the Phillips curve today and once the relation of unemployment and inflation is not "dead" it is crucial for the ECB to include the unit labour cost in its policy rule. In equation 5 we have a monetary policy rule of a "shadow" dual mandate by including the unit labour cost and as it is presented by Table 1 these 2 models have almost identical coefficients of the independent variables. So, either with enforcing this "shadow" mandate or not, the ECB would follow the same economic decisions.

The importance and the effectiveness of the "shadow" mandate is shown on Figure 2. In Figure 2 it is graphed the dynamic stochastic forecast of interest rates based on the two models from July 2014 to September 2019. Despite the similarity of the two models, it is clear from Figure 2 that the forecasting process using unit labour cost and inflation performs better than the ordinary approach of inflation alone. Bearing that in my mind, we can conclude that it is possible that the ECB has followed this "shadow" mandates in the last 5 years and also that in the new monetary era, policy rules become more effective when they include the labour cost and can adjust to internal devaluation.

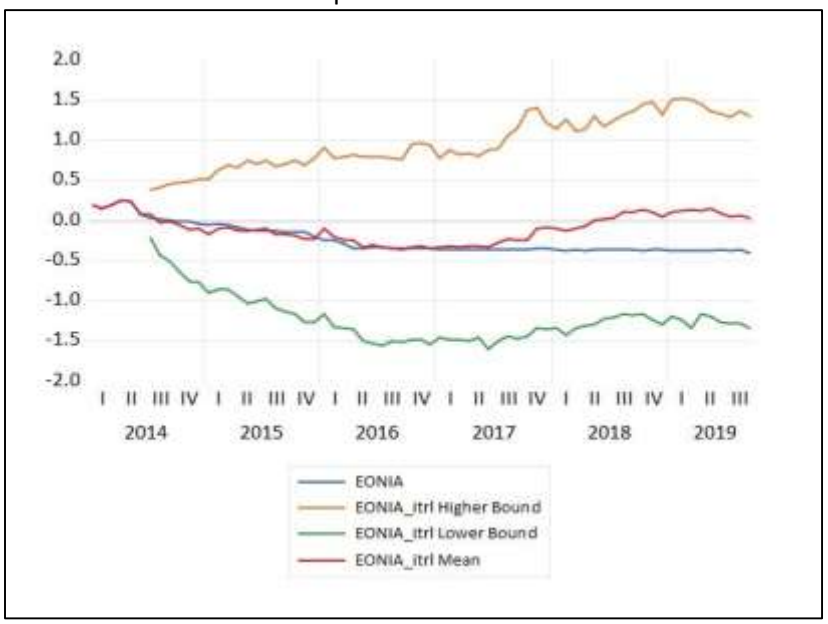
[3] For example, Hooper, Mishkin & Sufi (2019) and also Ball & Mazunder (2020)

Figure 2

Equation 4



Equation 5



Source: Author's Calculations

Debt Sustainability Analysis

As it is examined by the previous sections the severity of the Greek crisis came from unaccommodating fiscal and monetary policies, but instead of just keep debating what went wrong it is more helpful to debate what we can do different next time and how much we have learned from the depression. Blanchard (2019) challenged the conventional wisdom of fiscal policies with his 2019 presidential address to the AEA, in which he presented empirical evidence of the US that even with government deficits the debt to GDP ratio can decline over time. The key of this decreasing path, as described by Blanchard, is to maintain annual interest rates below growth rates.

In the Eurozone, this exact scenario seems quite dubious despite near-to-zero or even negative yields to government bonds. The reason is that the Euro Area is severely hit by secular stagnation and growth rates have remained stubbornly low. This exact phenomenon can be a thriving chance for EU member states to take advantage of this low interest rate environment in order to enforce more cohesive fiscal expansion. Rachel & Summers (2019) in their most recent examination of secular stagnation found a positive correlation between decreasing natural interest rates and the effectiveness of fiscal stimulus. Since natural interest rates in the Eurozone are almost zero this is the right time for fiscal expansion.

Generally, Eurozone member states can be divided into two groups. First, those having fiscal space for stimulus but committed to a balanced budget and second, those having no fiscal space, under the current criteria, but with economic conditions demanding for stimulus. The prospect of a fiscal union, or a more effective banking union, would aim to harmonise these differences among member-states and incrementally create automatic stabilisers used by the fiscal authority. By failing to create this common fiscal body and by failing to establish unconditionally full capital mobility (Krugman, 2013), the EU has suffered from the revenge of the Optimum Currency Union theory.

Greece ultimately should emphasise on promoting fiscal and banking union and at the same time be prepared to stick to rules provided by the EU institutions throughout the crisis. The most comprehensive and integrated report on the Greek economy was provided by Eichengreen et al. (2018) in which they analysed extensively the prospects of the sustainability of Greek debt. All these policies implemented by Greek governments in the last decade were restrained by the need to retain debt ratios to sustainable levels.

The Eichengreen et al. report forecasted different scenarios for the evolution of debt from 2018 to 2060. Their findings suggest that in no case the Greek debt will fall below 100 percent of GDP describing it as unsustainable. The most optimistic and better performing alternatives for Greek debt is either the implementation of a conditional face-value debt relief when the budget surplus exceeds a certain minimum level or the extension of ESM borrowing, targeting to sustain lower interest rates. Unfortunately, it is unthinkable for a country to sustain a minimum level of 2 percent primary surplus for 4 consecutive decades and also it is illegitimate with the current EU legislation to prolong the ESM funding for Greece.

In order to examine the sustainability of Greek debt we have used major assumption from the Eichengreen et al. report using the methodology of Psarra & Psarras (2019). In equation 6 we have the dynamic evolution of public debt (d) using interest rates (r), annual growth (g) and the primary deficit (df). For our calculations we have used a sample from 2018 to 2060 and we have divided our data in to two subcategories. In the first category we have data from 2018 to 2024 using the forecast provided by the IMF[4] for our four variables while in the second category we have used some assumptions of the Eichengreen et al. report.

$$d_t = \frac{1+r}{1+g} d_{t-1} + df \quad (6)$$

In the second subcategory we have used the interest rates as provided by the Eichengreen et al. report, we have assumed that steady state growth equals 1 percent and the primary surplus from 2025 and onwards will be 1.5 percent of GDP, generally a more realistic scenario, as

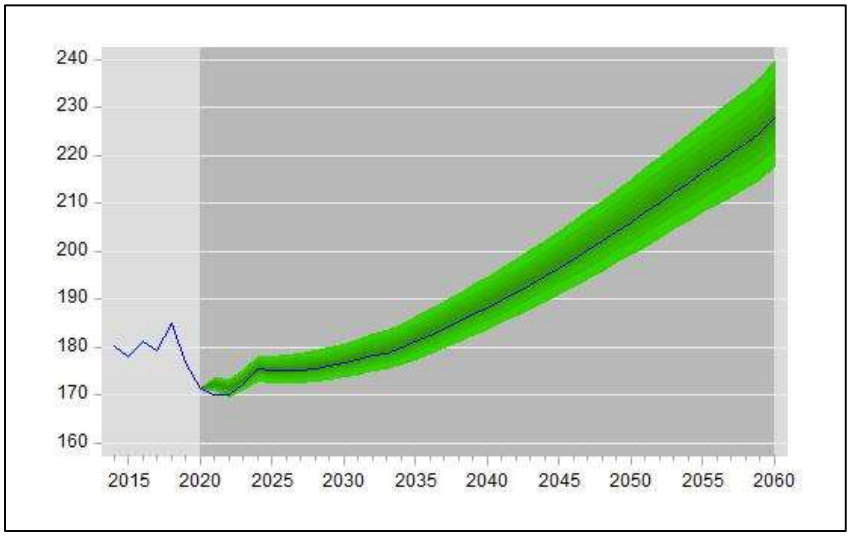
[4] The IMF data of our panel were written before the Covid-19 pandemic, so it is possible to be overestimated compared to the real results.

assumed by the IMF. By estimating the model of equation 6 we have made some conclusions through certain graphs about the progress of Greek debt.

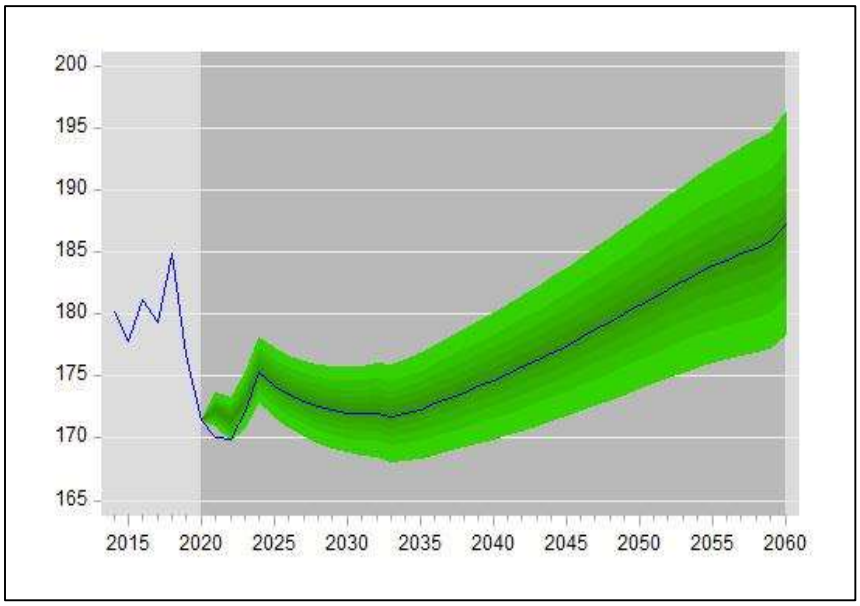
Undoubtedly, the Greek debt is unsustainable and if the circumstances of the baseline scenario[5]stand then the debt ratio will return to its 2018 level by 2031. Having this in mind we have examined three different improving scenarios graphed in Figure 3. In the first scenario of improved fiscal position we have increased the fiscal surplus by 1 percentage point. In the second scenario, we have assumed that the steady state growth rate increases by 1 percent and in the third scenario the borrowing cost of Greece decreases by 1 percent.

Figure 3

First Scenario

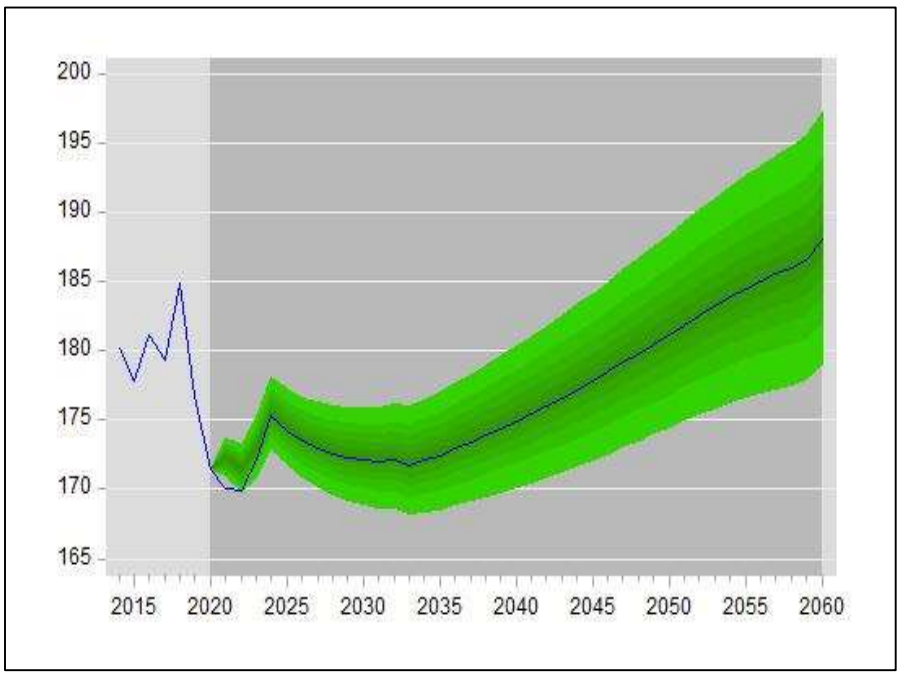


Second Scenario



[5] We have used the Fanchart approach as provided by the IMF assuming no normal distribution and coefficient uncertainty of our model.

Third Scenario



Source: Author's Estimation

The first scenario, of an improved fiscal position, seems the most ineffective compared to the two others once the mean of debt ratio under this scenario will be 192 and it will reach the 2018 peak by 2037. As it was presented by Psarra & Psarras (2019) fiscal consolidation is less effective to stabilise to debt when implemented for debt levels above 90 percent of GDP. The other two scenarios perform almost identically with the second scenario having a mean debt ratio of 176.65 percent, reaching the 2018 peak by 2057 while the third scenario has a mean debt ratio of 176.94 and debt will reach its 2018 peak by 2057.

I believe that it is crucial for Greece to emphasise on keeping interest rates low. Although the debt ratio will end up being lower with a 1 percentage point increase of steady state growth it is much harder to achieve this goal despite the long run benefits of the structural reforms. On the contrary, retaining lower for longer interest rates seems more possible once we have entered the new monetary era environment[6] of near to zero interest rates and the Greek government has already been borrowing with interest rates below 1 percent. In the Eichengreen et al. report they have an Appendix example of Greece borrowing at the same interest rates as Portugal, at around 100-120 bp, but they find it unrealistic to happen. I think that in the long we have to remember that "It's the interest rates stupid"[7], considering that the mean yield of 10-year Greek government bonds is around 150bp despite the Covid-19 crisis.

Conclusion

The purpose of this paper was to test the economic mistakes made during the Greek debt crisis. Fiscal consolidation should be used carefully in stabilising public debt or it should even

[6] The new monetary era environment is extensively described by Rogoff (2017) or Bernanke (2017) and Bernanke (2020)

[7] This exact quote was used by Galbraith (2011)

be avoided as long as interest rates remain below growth rates. Structural reforms in the labour market and in Greek institutions will provide a better potential output in the long run but it is undeniable that they have a huge negative social impact in the short run.

The Greek crisis should be an example showing that something does not work functionally inside the Eurozone. We believe that a revised monetary policy rule adjusted by internal devaluation should be introduced by the ECB and it is also crucial to promote more decisively the importance of a fiscal union so as not to repeat the mistakes of the past and provide more accommodative fiscal policies. After 10 years of crisis and sacrifices I am convinced that we have not yet reached our Ithaca.

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