

Fiscal governance and forecasting Bias: a case study of Greece during the economic crisis

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Abstract

In this paper, we examine the correlation between budget and growth forecast errors of the Greek Government, during the last decade. We explore if these budget forecast errors are the result of fiscal performance, economic conditions, or other qualitative characteristics of economic policy reform. We try to explain whether biased macroeconomic forecasts were responsible for biased fiscal forecasts. Besides, we investigate the role of business and consumers expectations, the election process and the financial aid disbursements following positive reviews of the Greek policy reform. We conclude that fiscal governance reform has improved fiscal forecasting framework, even though pessimistic forecasts prevail.

JEL classification numbers: E6, H6

Keywords: fiscal governance, fiscal planning, forecasting bias, Greek economic crisis

1 Introduction

Fiscal governance's objective is the improvement of fiscal policy making through rules, regulations and procedures that influence how budgetary policy is planned, approved, carried out, monitored and evaluated (European Commission Fiscal Governance). Its ultimate aim is to enhance growth through fiscal sustainability. Fiscal discipline is very important for the efficiency of the economic policy and particularly for the quality of the forecast process by which a country's budget outcome is predicted. This should be seen as an important variable in the appraisal of macroeconomic policy decision (Artis and Marcellino 2001). Also, Blanchard and Leigh (2013) dispute the impact of the fiscal multipliers on the future growth reaction, following the planned fiscal policy. Therefore, wrong forecasts regarding the expected growth are responsible for the wrongly planned fiscal policy. As a result, frequent forecast deviation of fiscal elements performance prevents the execution of long-term economic performance plans. More recently- regarding the European Commission's forecasts- Jalles (2020) finds that fiscal forecast errors can be explained by growth and inflation wrong forecasts and the accuracy of projections depends on the time horizon. Hence, it is important to investigate fiscal and growth forecast linkages, exploring the role of fiscal governance.

State Budget is the main law of economic policy, planning and implementation. Furthermore, it is an official document which creates restrictions on the political ambitions of each government (OECD 2002), through the limits on revenue that the government expects from the citizens, and the expenditures that the government offers. Generally, investigating the budget process and system, we are able to

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understand the country's social and political structure (Menifield 2010). The budget process is divided into four stages (von Hagen and Harden 1995): Planning process, Budget Law, Implementation and Ex-post monitoring. Each one of these stages contributes to the successful and credible implementation of the Budgetary Plan. In addition, Beetsma et al. (2013) point out that both economic factors and public finance procedures are significant determining factors of either fiscal planning or implementation process. Following Beetsma et al. (2013), we analyze the 1st (planning) and the 3rd (implementation) stage, focusing on selected variables in Greece for the period between 2009-2019, trying to investigate fiscal and growth forecast errors correlation under specific fiscal governance conditions. We investigate whether economic and fiscal factors (previous fiscal performance, prices and real economic growth) or political factors (business and consumers expectations and election procedures) or institutional factors (loan disbursements following fiscal adjustment procedures in a financial aid scheme) cause deviations in fiscal planning and implementation.

Economic, political and institutional factors affect the budget outcome, thus expenditures' and revenues' over/under performance, is based on biased, optimistic or pessimistic, forecasts. Fiscal policymaking is based on governments' budget forecasts. A striking feature of budget forecasting is whether it is negatively or positively biased during fiscal adjustment, by making (over or under optimistic) forecasts on the future budget and macroeconomic conditions, under an inefficient fiscal governance or even in the existence of specific fiscal rules. In addition, a more challenging issue is whether budget forecasting is biased under the existence of real time large budget deficits or in an economic recession environment, especially for high debt countries. This also allows for a further investigation of qualitative (institutional or political) factors that may affect budget forecasting. Furthermore, it allows the investigation of the implications of adopting counter-cyclical fiscal policies in order to affect the cycle duration and the cyclical impact on the economy³. During growth expansion periods, counter-cyclical fiscal policies are restrictive (decreasing expenditures and/or increasing taxes) and during recessions, they are expansionary (increasing expenditures and/or reducing taxes).

According to Jonung and Larch (2006), macroeconomic forecasting affects the fiscal elements' forecast, noting that for this reason these two procedures should be independent. The main reasons for budget deviation are the widening of expenditures, revenue shortfalls or forecast errors in both expenditures and revenues (World Bank 2005). The interaction between the fiscal and economic forecasts gives governments the opportunity to overestimate revenues, so that the option of allocating more on expenditures would be available. Therefore, increasing expenditures paves the way for enhanced political power. However, according to Jochimsen and Lehmann (2017) overoptimistic revenue forecasting has absolutely no correlation with the re-election of governments. Thus, governments may engage in an overoptimistic revenue forecasting in order to satisfy the electoral body, but this is not always the success key for their re-election. It is clear that there is a significant relationship between budgeting and the political environment. Perotti and Kontopoulos (2002) argue that budgeting, particularly a deficit balance is affected by the political environment. Sometimes we can observe instability on the government's fiscal performance over a period because of political conditions.

One reason might be the forthcoming elections⁴ (Merola and Pérez 2013). Katsimi and Sarantides (2012) find that elections, although not affecting public spending and expenditures, affect revenues negatively, especially because of a decrease on direct taxes. On the other hand, Prichard (2014) maintains that a regular election period is not associated with revenue collection reduction. Oppositely, taxes are falling significantly when there is harsh competition during election period, revenues from indirect and direct taxes decrease equally (reaching up to 0.5% of the GDP). However, another reason could be the

³ According to the EU fiscal governance, EMU members' fiscal performance should depend on sound fiscal policymaking, mostly by retaining the deficit bias, reducing the cyclicity of fiscal policy making and ameliorating the efficiency of public expenditures.

⁴ Shi and Svensson (2003) call the periodic fluctuation of fiscal policy due to electoral cycles as the "political cycle of the budget".

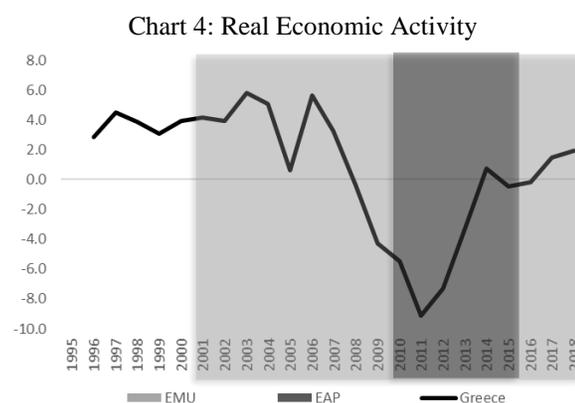
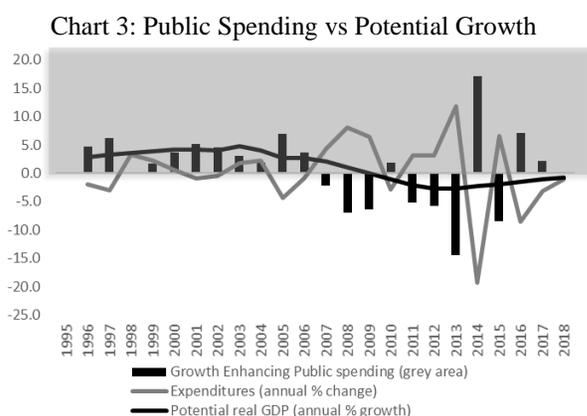
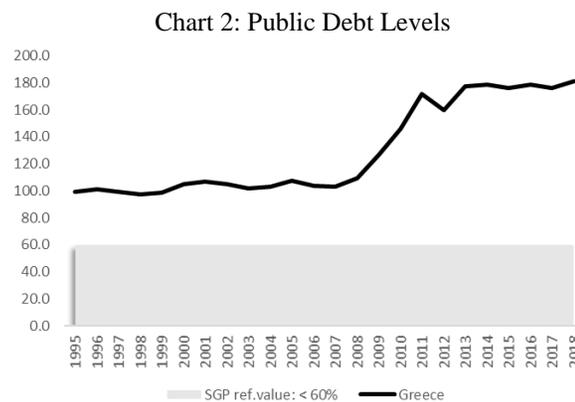
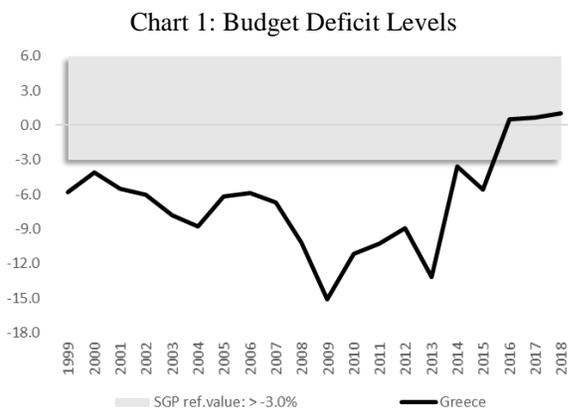
government's composition, which affects the decision-making process that actually influences the governmental efficiency. Therefore, both the planned and the actual fiscal policy depend on the political environment. Jochimsen and Lehmann (2017) support that leftist governments compared to the right ones usually make more optimistic revenues forecasting, while fragile majorities in governments and parliaments result in realistic forecasts over revenues. Instead, Mody and Fabrizio (2014) identify that vulnerable governmental coalitions do not influence the outcome of the budget unless ideological differences exist.

Auerbach (1994) explains that the basic causes for the forecast error are political (fiscal indiscipline due to political budget cycles), economic (i.e. interest rates, inflation) and technical (parameters that cannot be explained by policy or macroeconomic changes, i.e. tax collection and income distribution). Accordingly, Beetsma, Giuliadori, and Wierts (2009) claim that the probability of accurate budget implementation is disproportionately related to the time factor. In a more general aspect, Leal et al. (2008) support that the process of fiscal state budget forecasting should not be considered as an "art", but as a very clear scientific procedure. Moreover, the technical specialization and optimization by ex-post monitoring, frequently analyzing the recent fiscal actual data as well as indicating the last forecast errors is the best way for accurate forecasting. Instead, various political assumptions may negatively affect correct forecasting.

But, what about official restrictions that bind governments to achieve their targets? Fiscal rules according to Kopits and Symansky (1998) are indicators - numerical rules - that are dictated to governments, determining the level of budget revenues and expenditures, or even the level of public borrowing⁵. Therefore, these rules should induce governments, firstly to plan the budget in line with the rule and to execute the budget according to the rule and finally according to their plans. Frankel and Schreger (2013) support that countries embark on overly optimistic forecasts and thus avoid fiscal rules that bind them to specific budgetary targets. EMU members' fiscal rules compliance is actually questioned. Among others, Hallerberg, Strauch, and Von Hagen (2009) argue that when fiscal decision-making process is decentralized, the given fiscal governance efficiency depends significantly on the underlying political system and that any delegation is functional when there are few, or no, ideological differences among government parties, which is not the case in the EU countries. In addition, Andrieu et al. (2015) point out the complexity and the operational difficulties of the EU fiscal governance claiming for a single fiscal anchor with a single operational rule. In parallel, Wyplosz (2015) concludes that both the design and the implementation of fiscal rules could be decentralized (laws and constitutions at the national level) without questioning the importance of fiscal discipline. Moreover, Leal et al. (2008) prove that SGP rules have not acted as a sufficient tool which motivates countries to implement their Budgets successfully, abiding by the fiscal rules set by the SGP. In 1999-2006, it is observed that in the EMU area, there are significant forecast errors in both the macro and fiscal field. This is the result of non-binding fiscal rules and fiscal governance weaknesses.

In the above context, Greece is more than a perfect case study. It is an EMU country since 2001, mainly performing during the last decade high budget deficit (Chart 1) and public debt (Chart 2) levels. It exerts a public spending structure that often affects negatively growth (Chart 3) as from 2006-2015 public spending was higher than potential GDP (public spending non enhancing growth). Finally, from 2008-2013 the country was in an extremely recessional environment (Chart 4). Moreover, Greece during 2010-2018 was under the Economic Adjustment Programmes (EAPs)' framework and since August 2018 in the post-programme monitoring period (The Enhanced Surveillance framework).

⁵ As for example the Stability and Growth Pact (SGP, 1997) reference values: a general government deficit up to 3.0% of GDP and a general government consolidated gross debt up to 60.0 % of GDP.



Notes: i) Budget balance: General Government net lending (+)/net borrowing (% of Nominal GDP), Public Debt: General Government consolidated gross debt (% of Nominal GDP), Expenditures: Total Government expenditures – Excessive deficit procedure (€ mn), Potential real GDP: Potential GDP - 2015 reference level (€ mn); ii) Public Spending Enhancing Growth = Potential real GDP (annual % change) – Expenditures (annual % change); iii) Real Economic Activity: Real GDP (annual % change)

Source: AMECO database

The years before 2010 large and frequent fiscal deficits created a huge amount of public debt. This was the result of fiscal indiscipline and constant deviation from the annual plans that the government used to schedule, through the given fiscal rules.⁶ Greece, additionally, faced a low competitiveness environment and a problematic banking sector. Finally, in 2010 the country started to lose market access and was unable to repay its public debt, thus asked for help. Then, in the following 8 years, 3 different financial assistance packages were enacted with a total amount of around €290 bn received as foreign loan facility. In order to repay on time its debt maturity, Greece was expecting successive amount disbursements, approved by its creditors: European Central Bank (ECB), European Commission (EC), European Financial Stability Facility (EFSF), European Stability Mechanism (ESM) and International Monetary Fund (IMF), under successful reviewing and reporting. Therefore, successful reviews based upon compliance in various agreed measures and structural reforms and in specific fiscal target achievement.

⁶ See Katsimi and Moutos (2010) for an interesting analysis on the Greek budget deficit and public debt during the pre-EMU accession period (1995-1999) and the EMU period (2000-2009).

However, the specific fiscal targets were under a constant dispute among the Greek Government and its creditors (European institutions and the IMF). It is clear that the forecasts of every institution such as the European Commission, IMF or OECD are not absolutely the same with those of the governments. Particularly, during the EAP or the Enhanced Surveillance framework, we often observe a debate between the partners, which revolves around the final amount of budget balance. However, the main argument is based on the different real GDP growth forecasts that each side maintains. More specifically, IMF argued that the primary fiscal targets (up to a 3.5% surplus of GDP by 2018) of the 3rd EAP would cause a degree of austerity that could avert emerging recovery and that no more measures for higher surplus were necessary (Obstfeld and Thomsen 2016). Moreover, a lower primary balance path would make available additional fiscal space for social and growth oriented policies, but without the exclusion of structural reforms. Greek fiscal policy mix should be improved for enhanced growth with a positive social impact, focusing on investment, on targeted social spending and on lower tax rates, in the back of revenue administration reforms and public financial controlling.

The question that arises, for someone who investigates and analyzes the economic policy developments and mainly the fiscal result of the economic policy, is which forecast is correct and which is wrong? Additionally, does the Ministry of Finance embark on overoptimistic forecasts for the future economic growth, with a view to planning a less restrictive fiscal policy?

Chart 5: 2015-2019 Fiscal Overperformance

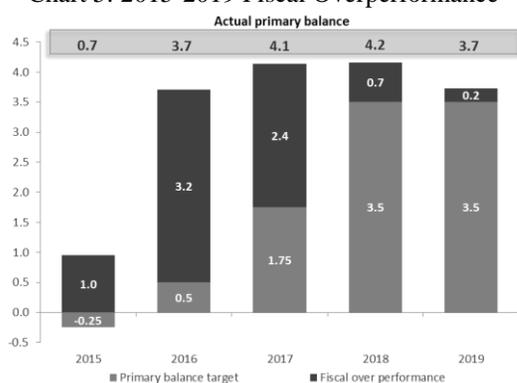
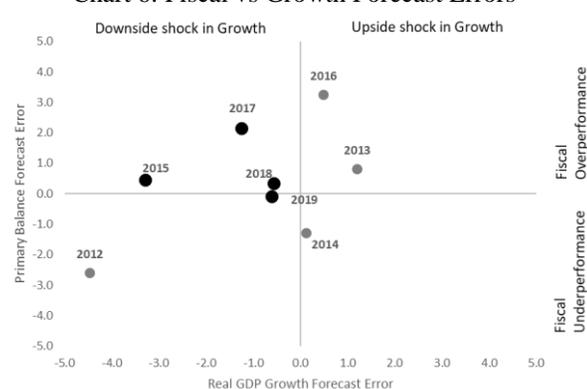


Chart 6: Fiscal vs Growth Forecast Errors



Notes: i) Primary balance as % of GDP (2015-2017 based on MoU definition and 2018-2019 based on Enhanced Surveillance definition); ii) Forecast errors are the difference between the Greek Government (fiscal and growth) projections, as stated in the relevant State Budget, and the actual outcomes.

Source: Eurostat, ELSTAT, Greek Ministry of Finance - State Budgets 2010-2019

In parallel, given these fiscal commitments Greece has overperformed against its primary surplus target since 2015 (Chart 5). The question that arises is whether this overperformance had negative effects on growth, and more specifically, whether the greater than projected fiscal outcome had a lower than projected growth outcome. Actually, only in 2016 the 3.2 p.p. fiscal overperformance resulted in a 0.5 p.p. upside shock in the growth outcome (Chart 6). Otherwise, in 2015, in 2017, in 2018 and in 2019 the fiscal overperformance is related with a downside shock in growth. However, this is not the whole story. Greece has a track of forecasting errors in both the budget and growth field since the beginning of the economic crisis, although following the EU fiscal governance or the EAP framework.

Therefore, it is highly intuitive to investigate empirically the budget and growth forecast errors correlation of the Greek government during the last decade. Are deviations of actual budget outcomes against forecasts the result of actual fiscal performance, of actual economic conditions, or of other qualitative characteristics of economic, political and financial adjustment activity; or are these deviations the result of real GDP growth rate forecast errors? Did the Greek government's forecasts of budget

balances and growth rates tend to be overoptimistic, establishing excessive budget deficits occurrence?⁷ Is the real economic activity deliberately underestimated, reflecting pro-cyclical fiscal policies? Was the Greek institutional budgeting framework and generally the fiscal governance, which led to great fiscal imbalances, unable to ensure a sustainable fiscal policy?

In this paper, we try to illustrate whether unrealistic overoptimistic /underoptimistic fiscal forecasts are related to overoptimistic/underoptimistic growth forecasts. We further investigate the role of economic conditions, especially as they are illustrated on business and consumers expectations. Economic sentiment indicator (ESI) is a very important proxy of monthly economic activity, highly related to real GDP data and mainly reflecting the economic and political environment.⁸ Additional political implications are clarified in the impact of elections' procedure on the budget bias and consequently on the budget forecasting procedure. Finally, it seems more than important to shed light on whether the EAP's disbursements (resulted after long and laborious reviews) affected fiscal outcomes and led to positive change of budget forecast errors, underlining possible policy implications about the importance of on time fiscal adjustment procedure.

The novelty of our study, which is based in the above relevant literature but is focused on Greece for the 2009-2019 period, is the following. First, we use budgetary real time quarterly data of the Greek Monthly Budget Execution. Secondly, we construct quarterly budget and growth forecasts. Finally, we use novel variables such as the change in the ESI and the loan (under the EAP) disbursements in order to better capture the economic political and institutional conditions' biases of the relevant period.

The remainder of the paper is organized in five sections as follows. In the second section, basic implications of the Greek budget governance are outlined. In the third section, we present the insights of the Greek forecast bias and in the fourth section we analyze the Greek biased fiscal forecasting after 2010. In the fifth section, an analytical framework analysis of the budget forecast error and the main results are explained. Finally, in the last section, our concluding remarks and further research or policy implications are suggested.

2 Greek Fiscal Governance Insights

A review of the Greek public and financial management and budgeting is probably beyond the scope of this paper. However, due to a high level of public debt and cumulative deficits before the start of the Economic Adjustment Programme we can easily deduce that the fiscal governance used to have a lot of weaknesses. The inability of the institutional framework of budgeting and tax administration to contribute to a sustainable fiscal policy is the basic reason of fiscal imbalances (Kaplanoglou and Rapanos 2011). As a result, the mechanism of the expenditures' control and the revenues collection was inefficient. Kaplanoglou and Rapanos (2013) refer that if the deviations from the plans had not been large enough the fiscal problem would not be significant. Thus, the overall budget process is directly connected with the lack of fiscal governance, as long as any deviations from the budgetary plans are related to actual fiscal imbalances.

⁷ According to Frankel and Schreger 2013, official forecasting of budget and growth has a tendency worldwide to be overoptimistic, leading to excessive budget deficits. The reason behind this is that "a government that foresees, or claims to foresee, healthy surpluses in coming years is less likely today to take the difficult steps that might be necessary to strengthen the budget, such as cutting spending and

⁸ ESI is a composite indicator calculated by five sectoral confidence indicators differently weighted: industrial confidence indicator, services confidence indicator, consumer confidence indicator, construction confidence indicator and retail trade confidence indicator. It is based on surveys conducted by EC-DG ECFIN and its national partners (in Greece the Foundation for Economic & Industrial Research - IOBE).

In the European Fiscal Governance framework, each EU member country's fiscal performance trajectory is represented by three basic composite country-specific indices: the Fiscal Rule Index (FRI), the Index on the Quality of Medium-Term Budgetary Frameworks (MTBF) and the Scope Index of Fiscal Institutions (SIFI). Each one is computed taking into consideration the evaluated performance of different criteria⁹. The performance of the above fiscal rules is indicative of the level of the rules' intensity and strength and of the range of the rules' coverage in each country.

After adopting the Council Directive 2011/85/EU on the requirements for budgetary frameworks of the member states in 2014 (law 4270/14 - a latest amendment is the law 4549/2018), Greece is actually evaluated in all criteria of each index. Additionally, another tangible result of the law above is the introduction of a specific institutional framework for the fiscal and budget governance. Some important points of the framework above are the determination of the operational institutions of the fiscal policy and the clarification of their activity, the establishment of the Hellenic Fiscal Council, the medium term of fiscal strategy and the procedure analysis of the planning, the execution and monitoring for both annual and the medium-term budget. Significant in our research are the articles of the law that define clearly the procedure of the execution of the budget and the correction mechanisms that are becoming stronger. Finally, we point out the significance of the independent fiscal institutions - as the literature indicates¹⁰ - the upgraded role of the Parliamentary Budget Office and the establishment of the Hellenic Fiscal Council. The Fiscal Council expresses its opinion on the macroeconomic and fiscal forecasts and this is a significant procedure of the budget process because the Hellenic Fiscal Council examines any possible intension for biased provisions by the Ministry of Finance. The Parliamentary Budget Office does a similar job but its main responsibility is to inform the committee of the Parliament which bears the responsibility. Besides, according to 2017 data Greece is overperforming the EMU average score in the MTBF index (Chart 7), mostly due to the regular fiscal performance of the country under the EAP framework. Both in the FRI (Chart 9) and the SIFI (Chart 8) indices, Greece's score is below the EMU average in 2017. Even in the Fiscal Rule Strength Index (FRSI)¹¹ of the Budget Balance Rule (BBR) (Chart 10), Greece is assigned a relatively low score.

Having a closer look in the scores that are attributed to all the criteria for Greece - regarding all these indices - the lowest evaluation for Greece is in the criteria relevant to the interrelation of official macroeconomic and budgetary forecasts, particularly when examining the role and the forecasts' endorsement or production of an independent fiscal institution and the evaluation of alternative macroeconomic shocks in the budget forecasts.

However, according to OECD (2019) the budget transparency in Greece remains at low levels and the parliamentary engagement in the budget process is weak. The Parliament votes and approves not only the overall budget of the state but also the budget law of each ministry. However, the Parliament does not intervene in the procedure regarding the monitoring and execution of the budget (Kaplanoglou and Rapanos 2011). The responsible parliamentary committee, through the presentations of the independent fiscal institutions and ministry of finance, monitors the developments of the budget's execution but there is not any direct intervention. The main responsible authority for the execution of the Central Budget is the General Accounting Office, which belongs to the ministry of finance.

⁹ Methodological notes are available in the European Commission (EC)'s Fiscal governance in the EU Member States Databases. Further methodological insights in Ayuso-i-Casals et al. (2009).

¹⁰ See for example Calmfors (2010), Frankel and Schreger (2016), Sherwood (2015), Jankovics and Sherwood (2017) and Beetsma et al. (2019).

¹¹ The FRI is based in five fiscal rules: Budget Balance Rule (BBR), Debt Rule (DR), Expenditure Rule (ER), Expenditure Rule/Budget Balance Rule (BBR/ER) and Revenue Rule (RR). For each one of them a Fiscal Rule Strength Index (FRSI) is calculated. In the case of Greece, since 2014 only the BBR and the DR are in force.

Chart 7: Quality of Medium-Term Budgetary Frameworks (2017)

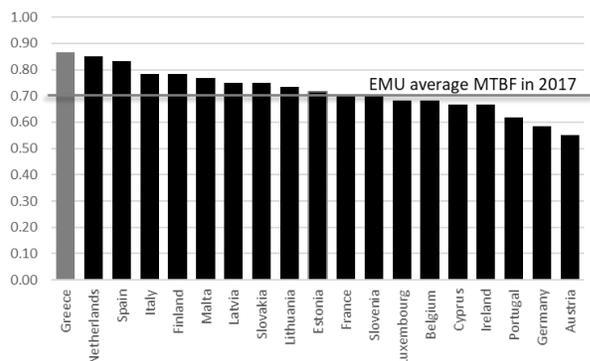


Chart 8: Scope Index of Fiscal Institutions (2017)

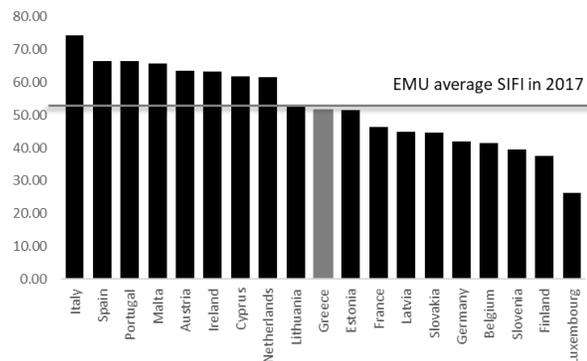


Chart 9: Fiscal Rule Index (2017)

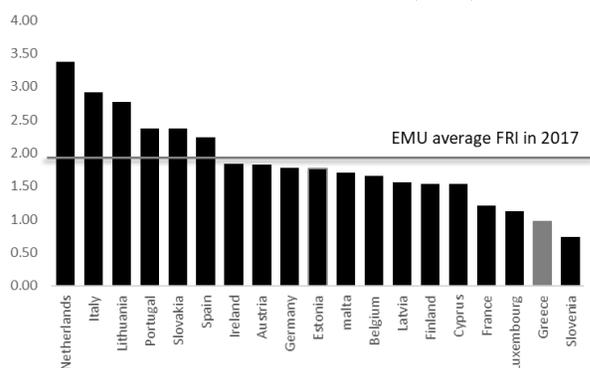
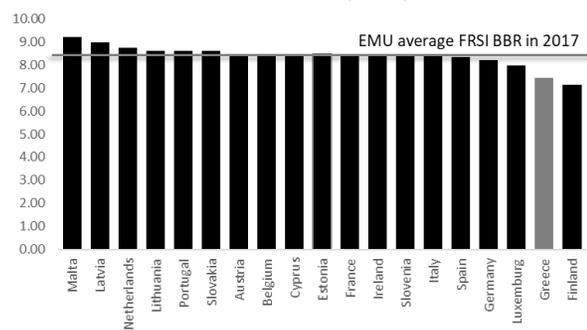


Chart 10: Fiscal Rule Strength Index of the Budget Balance Rule (2017)



Source: European Commission, DG ECFIN

Thus, although officially fiscal governance in Greece is at a better level since 2014 yet it is still below the average performance of the EMU countries. Even in the EAP framework - originally safeguarding a healthier than before the economic crisis domestic fiscal governance - it may be concluded as recorded by the relevant scores of the numerical fiscal rules, that there is a fiscal governance deficit mostly connected with the macroeconomic and budgetary forecasts' interrelation.

3 The Greek Forecasting Bias

Budgetary and macroeconomic forecasts are used as the basis of a fiscal planning. Hence, "wrong" or "correct" policies are based on "wrong" or "correct" forecasts. Thus, these forecasts are either overoptimistic or under optimistic.

An overoptimistic budget forecast results in an actual budget deficit larger than projected (or in a smaller actual surplus). In the base of an optimistic forecast, a strong budget performance is projected giving fiscal space for revenue and expenditure policy planning to be eased. Thus, the existence of Greek excessive deficits, for over 20 years, could be explained by the biased forecasting of the Greek government. Additionally, although the 3.0% GDP deficit threshold of the Greek government was binding, it could also explain why the budget forecasts for the next years were overoptimistic. The deficit exceeded the 3.0% of GDP while devising the new budgets.

On the other hand, an under optimistic forecast results in an actual budget surplus greater than projected (or in a lower actual deficit). This is mostly the case for Greece since 2009. It is interesting though, to find the explanation below of this pessimistic budget forecasting and furthermore to investigate

its interrelation with macroeconomic forecasting. Therefore, our effort is to answer how Greek fiscal forecasting errors are affected by growth forecasting errors, during the EAP period.

First, we define forecast error as the deviation of the forecasted variable from the actual variable in units, for both budget and growth outcomes. When the forecast error is positive, then the actual outcome is better than projected. Thus, the higher the level of the forecast error the better the performance of the variable examined. For example, if a greater than projected surplus or a smaller than projected deficit is the actual outcome, then the fiscal forecast error will be positive (fiscal overperformance). Similarly, if a lower than projected surplus or a larger than projected deficit is the actual outcome, then the fiscal forecast error will be negative (fiscal under performance). In parallel, a positive (negative) growth forecast error is equal to a better (worse) performance of the economic activity, interpreted as an upside (downside) shock in growth (Table 1).

Table 1: Forecasting Errors and Performance Evaluation

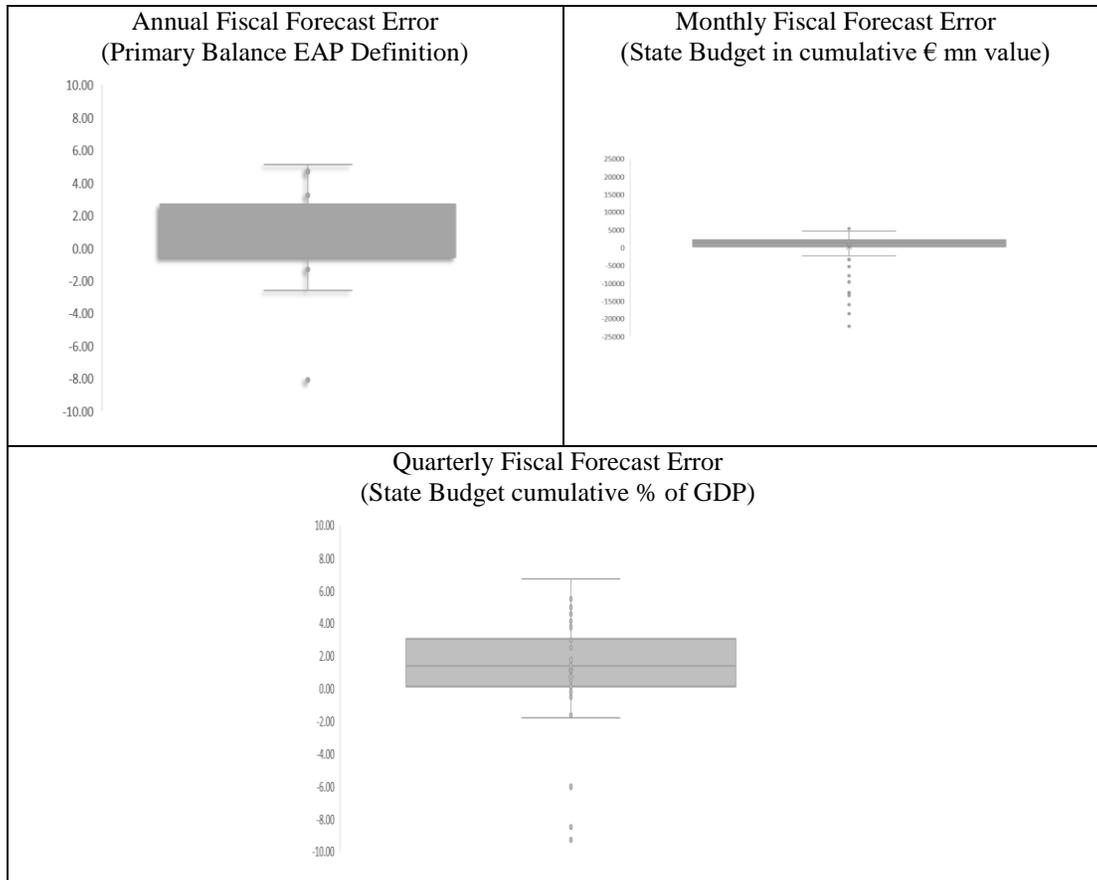
Fiscal Forecast Error = Actual Budget Outcome – Forecasted Budget Outcome	
Fiscal Forecast Error	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px solid black; padding-left: 10px; margin-right: 10px;">+</div> <div style="text-align: right; padding-right: 10px;">fiscal over performance</div> </div> <hr style="border: 0.5px solid black; margin: 5px 0;"/> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px solid black; padding-left: 10px; margin-right: 10px;">-</div> <div style="text-align: right; padding-right: 10px;">fiscal under performance</div> </div>
Growth Forecast Error = Actual GDP Growth Rate – Forecasted GDP Growth Rate	
Growth Forecast Error	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px solid black; padding-left: 10px; margin-right: 10px;">+</div> <div style="text-align: right; padding-right: 10px;">upside shock in growth</div> </div> <hr style="border: 0.5px solid black; margin: 5px 0;"/> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px solid black; padding-left: 10px; margin-right: 10px;">-</div> <div style="text-align: right; padding-right: 10px;">downside shock in growth</div> </div>

Second, in order to define the budget outcome we use the State Budget Balance (positive [+] when surplus or negative [-] when deficit), which is the difference between State Budget Net Revenue (Ordinary plus Public Investment Budget Net Revenues) and State Budget Expenditure (Ordinary plus Public Investment Budget Expenditure). These actual data are presented monthly in the State Budget Execution Bulletin (on a modified cash basis) by the Greek Ministry of Finance and are compared against the monthly target, which is presented in the same Bulletin. In order to define the growth forecast error we use the year over year percentage change of Real Gross Domestic Product (GDP). Real GDP is a measurement of economic activity (of the output) that accounts for the inflationary (or deflationary) effects. It is officially measured (by the Hellenic Statistical Authority - ELSTAT) on quarterly and annual basis and with or without seasonal adjustment process.

Third, for fiscal data though the official figures announced monthly are on a nominal and seasonal basis. Moreover, the higher frequency fiscal data (monthly) are presented in values (in million usually), however annual targets are usually expressed as percentage of Nominal GDP. For evaluating the government’s fiscal performance, we also calculate the fiscal forecast error based on a budget outcome, which is presented as percentage of nominal GDP. Furthermore, the fiscal outcome is presented either on a monthly or on a cumulative basis. It is important to investigate the month on month performance, however as long as the benchmark is the annual target, the cumulative performance of a whole three-

month, six-month, nine-month and the annual performance is more representative. This is the scope of the continuous intra-annual monitoring of the budget execution (Table 2).

Table 2: The Greek Forecast Errors in a Box & Whisker Structure



Source: Greek Ministry of Finance

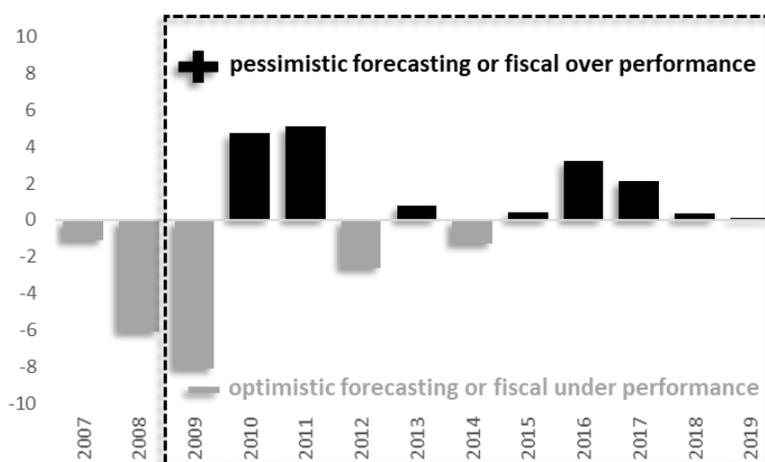
Finally, in order to overcome data unavailability and inconsistency among our dataset, we employ further data transformation, when the data accessible are unstructured or unorganized. Due to data (fiscal targets) unavailability for the period 2009-2011 (different Ministry's format bulletin), we calculate the monthly forecasts, by the annual budget forecasts (presented in the State Budget), using as a proxy the monthly data performance during 2012-2018. Additionally, we extract the annual real GDP growth rate forecasts from the annual Draft Budgetary Plans for the period 2009-2019, given by the Greek Ministry of Finance. We construct quarterly growth forecasts by proxy variables (weights) based on the actual quarterly data. And finally, we extract actual data for both Nominal and Real GDP by ELSTAT.

Consequently, it is significant that for both the budget and growth forecasts, we use real time data that are available in real time through the original documents. We use reliable (ensuring data consistency when data are transformed) and higher frequency (quarterly) data. We extract them from the official/original documents (Monthly State Budget Execution Bulletin and Annual State Budget, if they are not available in an official database: EC DG-ECFIN, Eurostat, ELSTAT, Ministry of Finance). The final data are better reflecting the performance (cumulative) and are measurable upon annual fiscal and economic activity targeting (percentage of GDP and growth rates). Thus, with the dataset used we actually evaluate the Greek Ministry of Finance's "decision", examining the forecast ability of the policymaker.

4 A Snipping View of Greek Fiscal Forecasting Error

Having a closer look at the pessimistic forecasting of the Greek government, we observe that Greece is mostly overperforming (or underestimating) its fiscal targets from 2009 to 2019. In a growth-enhancing environment with budget deficit expectations, the Greek Government was biased towards fiscal optimistic forecasting. However, since November 2009 (State Budget 2010 announcement) the situation is completely different. In the aftermath of global economic crisis, with a recessionary Greek economic activity and with a new elected government fiscal forecasting reverses to the pessimistic forecasting territory (Chart 11). From 2010 to 2019, several events should be considered in the pessimistic forecasting examination. The fiscal monitoring under the EAP framework (fiscal targets, continuing reviewing and policy commitments), the GDP and fiscal data revision (Excessive Deficit Procedure - EDP), the foreign and domestic market conditions (government borrowing interest rates, debt levels, repayment ability and ratings) and the political stability (expectations, elections and Institutions' decisions - Eurogroup, ECB, EFSF, ESM, IMF).

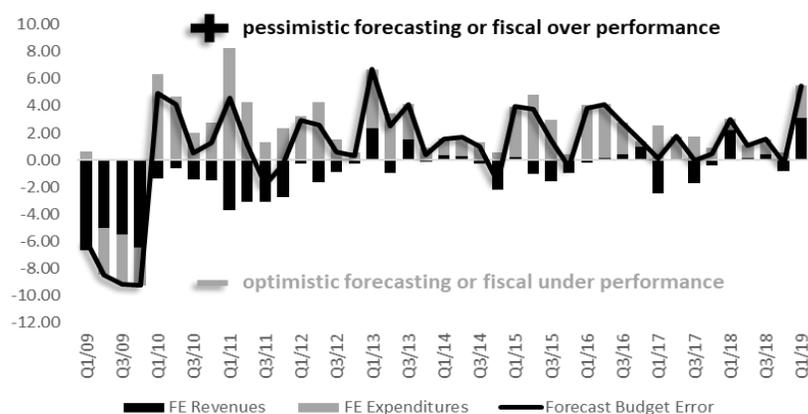
Chart 11: Annual Fiscal Forecast Error (Primary Balance - after 2010 EAP Definition)



Source: Greek Ministry of Finance - State Budgets 2007-2019

Furthermore, it is interesting to explain the Greek government forecasting bias by decomposing the budget balance, revenues minus expenditures in a quarterly basis (Chart 12). We note here that when the fiscal forecast error represents the deviation of forecasted expenditures from actual expenditures, then a positive forecast error denotes a worse performance. After 2009, in the cases where the government overestimated the budget outcome (negative forecast error), only in Q2.09, in Q3.09 and Q4.09 there was a worse than expected performance in expenditures. Actually, we observe that in 2010-2019 period, there was always a better performance than expected in the State Budget Expenditures. Indeed, it was strong enough to overbalance a worse performing in the revenues side in most of the cases, resulting in the pessimistic forecasting of the Greek government during this period.

Chart 12: Quarterly Fiscal Forecast Error (State Budget cumulative as % of GDP)

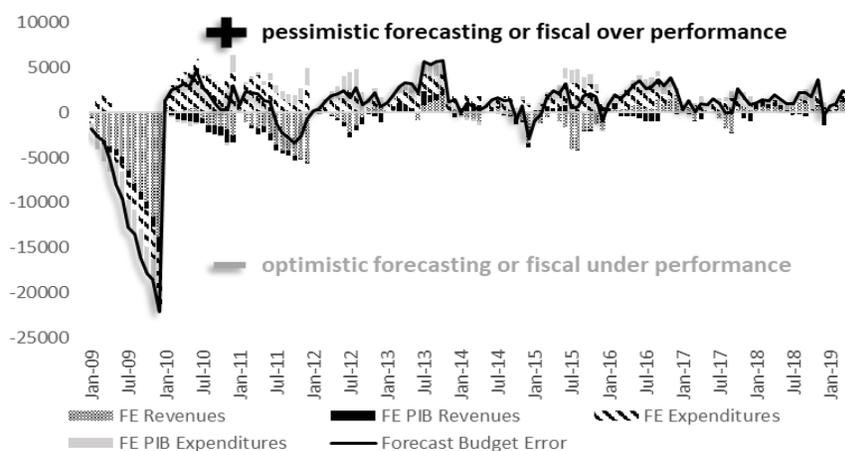


Notes: FE Expenditures (the Forecast Error in State Budget Expenditures) is expressed in a reverse (-) sign, as Forecast Budget Error = FE Revenues – FE Expenditures.

Source: Greek Ministry of Finance - Monthly State Budget Execution Bulletin Jan.2009-Apr.2019

Finally, in an additional analysis of the forecasted decomposed budgetary outcome, a higher frequency (on a monthly basis) and a further budget breakdown are important (Chart 13). The Public Investment Budget (PIB) execution is significant for the fiscal performance. Although the PIB expenditures have a negative fiscal impact in the budget balance formation, a positive performance in the PIB expenditures is denoted by a target achievement or overachievement. This means that when actual performance is bigger than projected (positive forecast error), then a positive performance was achieved, even if there is a negative fiscal impact on the budget balance (expenditures increase). On the contrary, negative forecast errors are indicative of a worse performance. PIB's expenditures overperformance may affect negatively fiscal performance, but on the other hand may affect positively the economic growth. Thus, this is mostly the case on a monthly basis after January 2010 (with the exception of a several month period in 2010 and in 2014). However, it is observed (as anticipated in a target-oriented framework) that cumulatively in the last months of the year - even in a pessimistic forecasting environment - the forecast error is ameliorated.

Chart 13: Monthly Fiscal Forecast Error (State Budget cumulative in € mn)



Notes: FE Expenditures (the Forecast Error in Ordinary Expenditures) and FE PIB Expenditures (the Forecast Error in Public Investment Budget Expenditures) are expressed in a reverse (-) sign, as Forecast Budget Error = (FE Revenues + FE PIB Revenues) – (FE Expenditures + FE PIB Expenditures).

Source: Greek Ministry of Finance - Monthly State Budget Execution Bulletin Jan.2009-Apr.2019

5 Budget vs Growth Forecast Error: Enlarging the Base Macro and Fiscal Effect Model

The scope of this paper is to investigate the relation between fiscal and growth forecast errors. We focus on Greece. A country with high debt levels, ballooned budget and trade deficits, with a prolonged economic recession and under both the EU fiscal governance and the EAP framework.

So, based on the methodology of Frankel (2011) which is also suggested by Kaplanoglou and Rapanos (2013) and particularly based on the framework of Beetsma et al. (2013), we construct the regression model below in order to examine the relation between growth and budget forecast error. We expand the regression model using more novel independent variables, as Beetsma et al. (2013) and others did before, to ensure that the political and institutional factors of the fiscal governance are taken into consideration too.

We use quarterly time-series data for the period Q1.2009-Q1.2019. We model an analysis (in two phases) applying a general ordinary least square (OLS) regression framework technique. In the first phase, we try to explore the basic effect of budget and growth factor (Blöndal 2003) on the forecasted budget outcome. In the second phase, the growth forecast error and other political and institutional factors' impact on the forecasted budget outcome. All variables used in the model (acronyms used, description of the variable, the data source and their descriptive statistics) are reported in Table 3.

Table 3: Variables of Interest

<i>VARIABLES</i>	<i>DESCRIPTION</i>	<i>SOURCE</i>					
FBE	Forecast Budget Error (cumulative, percentage of Nominal GDP)	Greek Ministry of Finance, Hellenic Statistical Authority, authors' calculations					
BSE	Budget Base Effect (the difference from each quarter from the relevant sample period's average)	Greek Ministry of Finance, authors' calculations					
GE	Growth Effect (annual real GDP growth rate on a quarterly basis)	Hellenic Statistical Authority					
DEFL	Price Index - implicit deflator (percentage change on previous period)	Eurostat					
GFE	Growth Forecast Error (annual real GDP growth rate on a quarterly basis vs quarterly disaggregated annual growth forecast)	Greek Ministry of Finance, Hellenic Statistical Authority, authors' calculations					
SENTIMENT	Economic Sentiment Indicator ($t - t_{-1}$ difference on a quarterly basis)	European Commission					
DISCIPLINE	Disbursements under EAP loans (dummy variable: 1 or 0)	European Commission, ESM/EFSF, IMF, ECB					
ELECTIONS	Elections process – assumed as a 2 month period, when elections held and the previous month (dummy variable: 1 or 0)	Hellenic Parliament					
<i>DESCRIPTIVE STATISTICS</i>	<i>Mean</i>	<i>Median</i>	<i>Min</i>	<i>Max</i>	<i>Standard Deviation</i>	<i>Kurtosis</i>	<i>ADF p-value</i>
TBE	0.928	1.387	-9.289	6.696	3.620	5.095	0.0083
BSE	0.007	2.800	-11.000	6.200	5.151	1.910	0.4031*
GE	-2.502	-1.000	-10.800	2.400	4.092	2.031	0.6591*
DEFL	-0.002	-0.100	-1.600	2.500	0.793	4.280	0.0000
GFE	-2.578	-1.400	-9.600	3.700	3.339	2.176	0.0583*
SENTIMENT	0.273	0.633	-11.400	7.133	3.343	4.768	0.0000

Note: *stationary at first differences

In the previous section, we examined statistically the forecast budget error occurrence based on a revenues and expenditures analysis. Further investigating the existence of the forecast budget error (*FBE*) we move to the econometric modelling part, estimating in the first-phase the following specification (with static OLS using robust standard errors):

$$FBE_t = \beta_0 + \beta_1 BSE_t + \beta_2 GE_t + \beta_3 DFL_t + \varepsilon_t \quad (1)$$

where *BSE* is the budget base effect, *GE* is the growth effect and *DFL* is the inflationary effect. Our model (in the first phase of our analysis) is based on the theoretical statement that when there is a deviation of actual budget outcome from the forecasted one, then there is a two-dimension impact that actually contributes to that error. On the one hand, the part of the error that is explained by a different than expected budget outcome *ceteris paribus* other economic conditions, best captured on the difference between actual outcome and the relevant average performance of that period (*BSE*). On the other hand, the change in the economic activity that resulted in a different from the expected budget outcome, best reflected by the real GDP growth rate (*GE*). An inflationary effect (the price index - implicit deflator is chosen, *DFL*) is also important to be incorporated in the budget error formation as long as it depicts the nominal impact of the economic activity change (integrated in the *FBE* expressed as percentage of nominal GDP).

Table 4: First-phase Correlation Matrix

	BSE	GE	DEFL
BSE	1.000	-	-
GE	0.793	1.000	-
DEFL	-0.141	-0.115	1.000

The correlation matrix between the three explanatory variables is presented in (Table 4). No extreme correlations between these variables are detected, thus multicollinearity problems are not anticipated. We note, though, a relatively high correlation between *BSE* and *GE* (less than 0.8).

From a statistical aspect, it should be noted that the above estimated equation (eq. 1) discloses relative medium degrees of fit. Given the regression analysis above we found, through White Test, that there is no homoscedasticity. Thus, we estimate again the regression using the Huber-White method with heteroscedasticity consistent standard errors. Additionally, given that the Durbin Watson statistic is 1.7, we move on further serial correlation test using Breusch-Godfrey LM Test with 4 lags, which accepts the null hypothesis of no serial correlation (see Table 6).

According to the results of the (eq. 1) which are presented in Table 6, we find that the *BSE* exerts a significantly positive impact on the *FBE* and that *GE* has a significantly negative impact on the *FBE*, respectively. Moreover, there is a negative statistical significant relation between *DFL* and *FBE*. A positive 1% increase of the deviation of the actual budget outcome from the average expected one, results in a 78% increase in the forecast budget error. But what that relation between *FBE* and *BSE* means? The development of the actual fiscal data does not depend only on the forecasting but also on factors that enforce the successful implementation. So, a better or worse actual fiscal result, in comparison to the average of the period in question, depends on the efficiency or inefficiency of those factors. These factors could be generally the fiscal governance and especially the tax administration system, spending reviews and the tax evasion. Nevertheless, a 1% positive real GDP growth rate increase, affects negatively by 70% the forecast budget error. Furthermore, a 1% positive change in the deflator will result in a 91% decrease in the budget forecast error. However, relatively only the 53% of the forecast budget error is explained by the above variables included in (eq. 1).

Expanding the previous equation, in the second phase of our model we try to explain the impact that growth forecast error exerts on the *FBE*, investigating accordingly the impact of the economic crisis and

of the EAP framework. We estimate the following specification (with static OLS using robust standard errors):

$$FBE_t = \beta_0 + \beta_1 GFE_t + \beta_2 SENTIMENT_t + \beta_3 DISCIPLINE_t + \beta_4 ELECTIONS_t + \varepsilon_t \quad (2)$$

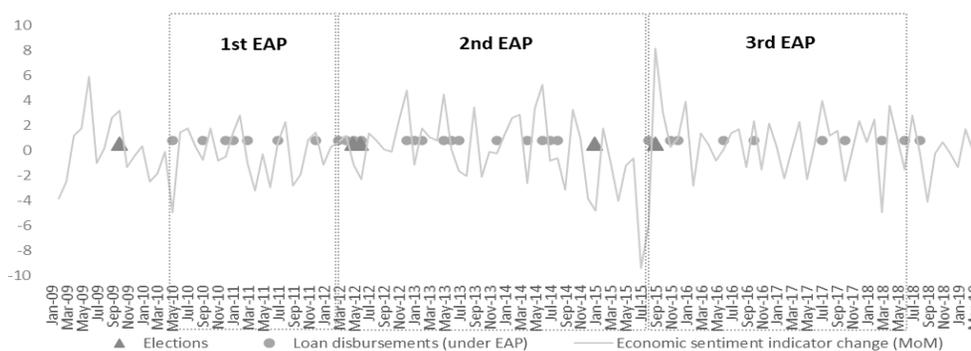
where *GFE* is the growth forecast error, *SENTIMENT* is an economic sentiment indicator, *DISCIPLINE* is a performance evaluation indicator (according to the EAP framework) and *ELECTIONS* is a political instability indicator (during an election period). Our main question is framed as follows: do growth forecast errors affect fiscal budget errors and to which extent does the political and institutional framework influence this relation? In the political and institutional context, a large range of qualitative variables could be available.

As for the economic sentiment indicator, we choose the ESI quarter over quarter difference that includes the consumer confidence and business (retail, services, industry and construction) expectations or overall estimations of the economic activity evolution. There is a change in both the consumer and business economic climate (either on the same or on different direction) when specific important economic or political events occur: election's announcements, institutions' reports, successful reviews, credit ratings, new bonds issuances, political negotiations, measures legislation, etc. Most of these events had consequently a great macroeconomic and fiscal impact on the Greek economic activity during 2009-2019.

Exploring the importance of discipline to the EAP programmes (i.e., reflecting mostly a fiscal discipline), we selected as a more representative explanatory factor the loans disbursements to Greece. This dummy variable (1 when a disbursement happens and 0 when not, during a quarter) includes both economic/fiscal and political implications. A loan disbursement during the EAP's period was the result of a positive review (usually later than expected), evaluating a successful fiscal or economic performance, after economic and policy measures' legislation. Thus, reflecting relatively an important degree of discipline. Furthermore, an EAP loan disbursement equals a cash flow in the Greek economy, safeguarding debt servicing, government's credibility and commitment to fiscal planning. Finally, when oriented to the government's in arrears clearance this had a direct effect on the public and private sector economic activity.

The fourth explanatory variable selected is representative of the political and fiscal stability. When elections took place, we assume that there was a two-month effect of the elections process (in the previous and in the current month). Usually elections resulted in a change of the government followed by a change in fiscal policy - in the allowed degrees of fiscal freedom during the EAP period -, targeting, planning and actual fiscal outcome. Moreover, the frequency of elections is representative of political and fiscal commitment to specific targets. Finally, elections are directly related to greater public spending. Thus, when elections are not expected spending could also be related to a deviation from the original fiscal target. The Greek political and institutional context during 2009-2019 is represented in (Chart 14).

Chart 14: Greek Political and Institutional Context (January 2009-April 2019)



Source: Greek Ministry of Interior, ESM, IMF, EFSF, EC DG-ECFIN

In the correlation matrix between the four explanatory variables (Table 5) no multicollinearity problems are anticipated, as between the chosen variables, all correlations are small.

Table 5: Second-phase Correlation Matrix

	GFE	SENTIMENT	DISCIPLINE	ELECTIONS
GFE	1.000	-	-	-
SENTIMENT	0.302	1.000	-	-
DISCIPLINE	0.040	0.214	1.000	-
ELECTIONS	-0.224	-0.176	-0.211	1.000

Firstly, we tested for heteroskedasticity in the residuals of equation by implementing the White's Heteroskedasticity test, which accepts the null hypothesis of homoscedasticity. Additional to this we observe that the residuals follow the normal distribution. We checked the regression above (eq. 2) for autocorrelation given that the Durbin-Watson statistic is 1.23. Additionally, we implemented Breusch-Godfrey Serial Correlation LM Test with four included lags and we found that the test accepts the null hypothesis of no serial correlation. Finally, we checked the stability of the parameters of our model across the sample using Chow's Breakpoint Test defining as a breakpoint date the Q3.2015. We selected Q3.2015 as a breakpoint date for testing, because at this period capital controls were implemented in Greece. This could be considered as an exogenous parameter. The result accepts the null hypothesis of no breaks at specified breakpoints. All the above diagnostic tests are shown in Table 6.

According to the results of the (eq. 2) which are presented in Table 6, we find that there is a positive significant relationship between the *FBE* and the *GFE*. Moreover, the *DISCIPLINE* exerts a significantly positive impact on the *FBE*. However, we find that there is a significantly (at the 10% level) negative impact of the *ELECTIONS* and of the *SENTIMENT* on the *FBE*, respectively. A positive 1% increase of the deviation of the actual growth outcome from the forecasted one, results in a 47% increase in the forecast budget error (at the 1% level of significance). Additionally, a loan disbursement under the EAP framework (*DISCIPLINE*=1), affects positively by 203% the forecast budget error (at the 5% level of significance). Nevertheless, an elections' occurrence (*ELECTIONS*=1) affects negatively the *FBE*, and will result in a 238% decrease in the budget forecast error. Furthermore, a positive 1% increase in the economic sentiment indicator (period over period) difference causes a 26% decrease in the budget forecast error.

Table 6: Model Results

Variables	First-Phase Analysis	Second-Phase Analysis
	(eq. 1)	(eq. 2)
		<i>FBE_t</i>
β_0	-0.837 (0.863)	1.368 (0.880)
<i>BSE_t</i>	0.782*** (0.210)	
<i>GE_t</i>	-0.702*** (0.229)	
<i>DFL_t</i>	-0.907** (0.451)	
<i>GFE_t</i>		0.469*** (0.155)
<i>SENTIMENT_t</i>		-0.257* (0.132)

<i>DISCIPLINE_t</i>		2.031** (1.014)
<i>ELECTIONS_t</i>		-2.384* (1.427)
Diagnostics		
R-Squared	0.532	0.353
Adjusted R-squared	0.494	0.281
Durbin Watson statistic	1.68	1.23
Breusch-Godfrey LM test (p-value, null Hypothesis of no serial correlation)	0.2405	0.2631
N	41	41

Notes: 1.* denotes significance at the 10% level ($p < 0.1$), ** at the 5% level ($p < 0.05$) and *** at the 1% level ($p < 0.01$), 2. Robust standard errors in parenthesis (value in the 2nd row)

In the previous section, we point out that during 2009-2019 (a period incorporating a prolonged economic recession and being under the EAP framework) the Greek government (on a quarterly basis) achieved mostly a fiscal over performance (or was biased towards pessimistic fiscal forecasting). Explaining further these positive fiscal budget errors, our main results show the following. Fiscal over performance is explained:

- By an increase in growth forecast error. When better than expected macroeconomic performance achieved (upside shock in growth) or forecasted macroeconomic activity was underestimated (by 1), then there was a positive impact (by 0.5) on fiscal budget over performance. Respectively, when a worse than expected Real GDP growth (downside shock) is reached (by -1), a negative impact on fiscal budget over performance (by -0.5) will be expected. This positive relation is in line with the relevant literature. Governments release growth overoptimistic forecasts creating fiscal space which this leads to negative (or lower than expected) fiscal forecast errors. Thus, it indicates in the case of Greece that better fiscal governance -incorporating growth cyclical and structural effects - will ensure sustainable fiscal performance in a high debt environment.
- By an EAP performance under discipline. During the three EAPs, Greece had to implement specific reform commitments, to satisfy all the prerequisites agreed, legislate specific measures and fulfill successfully the programme's reviews. The target was a loan disbursement in order to meet the country's financing needs and repay public debt on maturity. Discipline in the EAP, equals economic and fiscal policy adjustment and as we found resulted in fiscal discipline. According to our findings discipline in the EAP is related to increases in the fiscal budget error (fiscal overperformance). When a loan disbursement occurred, fiscal over performance increased by 2 (points of actual minus forecast deviation). This result is very intuitive. Greek discipline under all three EAPs was rather low. Most of the reviews were delayed and disbursements financed Greek debt close to the final repayment date. Monthly, and consequently quarterly, overperformance could be greater, if specific commitments and significant reforms were implemented regularly and on time, resulting in more frequent disbursements (not only at a debt maturity deadline). If quarterly fiscal over performance was greater, probably no greater annual fiscal targets (primary fiscal balance) defined in the third EAP should be required.
- By an increase in political stability (or no elections occurrence). An election's occurrence decreases the fiscal over performance by 2.4 (points of actual minus forecast deviation). Given that during January 2010 - April 2019, five national elections were held (excluding municipal, regional and

European Parliament's elections and a referendum¹²), resulting in different governments or political coalitions, it is important to explore elections' significance in the fiscal budget error. The negative relation found is in line with the literature findings. Governments often implement a fiscal stimulus policy to offer benefits to the electoral base looking forward to their re-election. However, the Greek political instability (new elections' occurrence) under the EAP framework had a low significant negative relation to budget forecast error. Governments had little institutional space or time-horizon to make optimistic forecasts. Intuitively though, a greater political stability (the same governmental power or broader parliamentary coalitions during the EAP period) could result in greater fiscal overperformance.

- By a downside in consumers and business expectations. Apparently, consumers and business confidence indicators are indicative of the real economic activity (leading indicator) as reflecting the households and businesses' view. A fiscal over performance is the result of a better actual than expected outcome, because of more budget revenues or/and less budget expenditures. Consequently, consumers and businesses negatively anticipate more taxes (successive tax increases during 2010-2018) and less public expenditures (decreases in pensions, new retirement systems, decreases in public sector wages and abolition of social welfare subsidies). When the expectations turn out to be negative, then a fiscal overperformance is expected. Thus, it is extremely intuitive as it explains both the Greek citizens "effort" and "pressure" (as consumers/businesses and as voters) in a restrictive policy environment during the economic and fiscal adjustment period, which resulted mostly in fiscal overperformance.

6 Concluding Remarks

National fiscal governance is acknowledged as vital for fiscal sustainability with a growth enhancing impact. It safeguards sound fiscal policymaking, mostly by retaining the deficit bias and reducing the cyclicity of fiscal policymaking. Fiscal policymaking is based on both governments' budget and growth forecasts.

Greek fiscal governance is also acknowledged with fundamental weaknesses. The institutional framework of fiscal governance was not strong enough to stabilize the fiscal imbalances. Deep-rooted and preserving fiscal and economic imbalances (high debt levels, ballooned budget and trade deficits, inability to borrow from the bond market and a prolonged economic recession), enlarged the EU fiscal governance in Greece, leading to an economic and fiscal adjustment framework (the three EAPs during 2010-2018). These frameworks ensured political and legislative changes, which improved the budgetary procedures and governance. Stronger fiscal rules were adopted and the transparency of the budget process enhanced after the law 4270/2014 (latest amendment: 4549/2018). With the independent fiscal institution establishment, independent forecasts and budget implementation monitoring are enriched. However, there is a fiscal governance deficit mostly connected with the macroeconomic and budgetary forecasts' interrelation (as depicted in the relevant EU fiscal composite country-specific indices: FRI, MTBF and SIFI).

In a growth-enhancing environment with budget deficit expectations, the Greek Government was biased towards optimistic fiscal forecasting, over estimating fiscal outcomes. However, from 2009 to 2019 Greece is mostly under estimating (or overperforming) its fiscal targets. Several events such as, the fiscal monitoring under the European fiscal governance and EAP framework, the GDP and fiscal data

¹² Investigating for fiscal forecasting bias, we choose electoral procedures resulting in new government and parliamentary combination, responsible for fiscal planning and implementation. We note again though that every election process affects public consumption or economic activity.

revision, the foreign and domestic market conditions and the political stability in an unstable economic environment, should be considered in the examination of pessimistic forecasting.

In order to investigate the relation between fiscal and growth forecast errors we use Greek real-time quarterly data and we model an analysis applying a simple OLS regression framework technique. Firstly, we explore the basic effect of the relevant budget performance and the growth influence to the forecasted budget outcome and secondly, the growth forecast error along with the impact of the political and institutional factors, on the forecasted budget outcome.

Our results highlight that the magnitude of the Greek fiscal over performance during the EAPs, was affected positively by the deviation of the actual budget outcome from the average expected one and negatively by the real GDP growth and the deflationary effect. Furthermore, it was also explained by the country's good performance during the economic and adjustment procedure, which was confirmed by loans' disbursements. However, the Greek political instability (new elections' occurrence) under the EAP framework had a negative relation to budget forecast error. Accordingly, when consumers and businesses negatively anticipated more taxes and fewer public expenses, then a fiscal over performance occurred. Finally, in line with the relevant literature, the degree of Greek fiscal overperformance was mainly explained by an increase in the growth forecast error, meaning a better than expected macroeconomic performance achieved (upside shock in growth) or that the forecasted macroeconomic activity was underestimated.

Policy implications of our results are very important. The Greek government during the EAP period released growth overoptimistic forecasts, creating fiscal space and this finally led to negative (or lower than expected) fiscal forecast errors. Therefore, it indicates that better fiscal governance -incorporating growth cyclical and structural effects - will ensure sustainable fiscal performance in a high debt environment. Greek EAP discipline was rather low and loan disbursements achieved close to maturity date. If specific commitments and significant reforms were implemented regularly and on time, then short-term over performance could be greater, resulting in more frequent disbursements (not only at a debt maturity deadline). In this context, probably no greater annual fiscal targets (primary fiscal balance) defined in the third EAP should be required. Additionally, a greater political stability (absence of elections procedure, the same governmental power or broader parliamentary coalitions during the EAP period) could result in greater fiscal performance. Finally, during the economic and fiscal adjustment period, Greece achieved mostly fiscal overperformance. Intuitively, the restrictive policies adopted (more taxes and lower wages and pensions or social welfare policies) were negatively anticipated by the Greek consumers and businesses. That illustrates perfectly both the Greek citizens' "effort" and the Greek voters' "pressure" during the EAP period.

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