Compliance with EU Fiscal Rules

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1. Motivation

Adopted in 1997, as part of the third phase of the Economic Monetary Union (EMU), the Stability and Growth Pact (SGP) was introduced to ensure that the national budgetary policies of the European Union (EU) member countries remained sound after the introduction of the single currency. In 2011 and 2013, in response to the 2008 Financial Crisis and the Sovereign Debt Crisis, the EU introduced additional precautionary and corrective measures via the "Six-Pack" and "Two-Pack" regulations. The SGP builds into three pillars: (i) up to 3% of GDP as reference for annual deficit ratios; (ii) up to 60% of GDP as reference for the debt ratio; and (iii) accomplish with the pre-defined national medium-term budgetary objectives (MTO). It forms part of the EU's economic policy coordination mechanism, which is now an integral part of the European Semester. The SGP consists of two different components: the preventive arm and the corrective arm.

Besides being crucial for maintaining economic stability, fostering sustainable growth, and upholding the principles of fiscal responsibility of each country, the harmonisation of national budgetary policies through the SGP aims to reduce the likelihood of financial contagion spreading across borders and not jeopardise the stability of the monetary union as a whole. Given this, we propose to analyse the evolution of the fiscal governance framework at the EU level with a special focus on the penultimate one (as another one is now in the implementation phase), its effectiveness and shortcomings, and the macroeconomic behaviour of countries during its implementation.

The preventive arm[1] (governed by Articles 121 and 126 of the Treaty on the Functioning of the Union (TFEU) on multilateral surveillance) is applied to all member countries with a public

[1] The original operationalisation of the preventive arm is defined in Regulation (EC) No 1466/97 and its subsequent amendments (Regulation (EC) No 1055/2005 and Regulation (EU) No 1175/2011).

deficit of up to 3% of GDP or which comply with the reduction of their public debt. It aims to prevent fiscal policies from heading in potentially problematic directions.

On the other hand, the corrective arm, or the Excessive Deficit Procedure (EDP), is applied to EU members that exceed or are at risk of exceeding the 3% of GDP deficit threshold or have violated the debt limit (60% debt-to-GDP), which is not diminishing at a satisfactory pace. Note to be reducing at a commendable rate, the gap between a country's debt level and the 60% reference value must be lessened by 1/20th annually (on average over three years) (European Commission, 2024). In this context, the member must correct its excessive debt within a specific timeframe taking into consideration European Council binding recommendations provided to that member state. A deadline extension for corrections in the budgetary excess and a revision of the recommendations may exist when the national economy suffers from exogenous shocks. However, if the regular monitoring reveals that effective actions are not being taken and recommendations to rectify the excessive deficit are not being followed, stricter requirements and new deadlines are imposed within six months (or three, in case of a serious rules' violation). Financial sanctions, such as the funding suspension from European Structural and Investment Funds (ESIF) and non-interest-bearing deposit equivalent to 0.2% of the previous year's GDP (European Commission, 2024). Nevertheless, there are some situations where the country may not be subject to an EDP when the analysis of relevant factors, such as economic circumstances and other specificities of the countries, does not justify it (European Commission, 2024).

2. Literature Review

The ongoing study proposes to approach the corrective arm regarding its policy changes throughout time and the impact they have had in member states, as well as a look into the future possible new policies.

As of now, one of the main criticisms being made to the corrective arm is its acquired meaning of fiscal purgatory, especially when the sanctions are triggered by exceeding the 3% of GDP deficit, a threshold that has been proven to, sometimes, be needed to be exceeded, for example for better absorption of shocks (Leandro, 2019). In a nutshell, the corrective arm is known for its procyclical design, particularly, tightening policies during recessions (De Jong & Gilbert, 2019). Ultimately, following Darvas et al. (2018) view, it "generated excessive fiscal austerity during a crisis, thereby contributing to aggravating and prolonging its economic, social, and pollical consequences." On the other hand, the preventive arm aims to avoid the need to implement that procyclical design by creating buffers during "good times".

Moreover, the policies within the corrective arm have been under fire for using double standards regarding sanctions for small countries (such as Portugal) in comparison to economically stronger and bigger countries (like Germany and France). This imbalance seems to stem from factors such as more economically relevant countries having more votes in the council that approves the sanctions and the inefficiency of these "naughty corner" tactics in countries where the electorate has a weaker European sentiment (Bagus, 2010), we see a detailed economic model for this in Jakob de Haan et al, 2004. Despite the criticism, the corrective arm is seen in general as a positive group of policies, with the essential characteristic of not being immutable. Changes and adjustments to the policies are, in fact, allowed and have happened throughout

time. Because the SGP is a comprehensive pact for a large number of countries and there are backdraws from the 'one-fits-all' model, the Program began to attach greater importance to economic condition and specificities of each country's public finances. For instance, with the ‘Six Pack’ in force in 2011 (Regulation (EU) no. 1177/2011), an amendment to address weaknesses exposed by the crisis in the previous framework, its defined a clause with the possibility of extending the deadline for correcting non-compliance with the deficit reference value, in serious recession situations affecting most Euro countries (European Commission, 2024). Although the current fiscal policy oversight framework meets its objectives, the EU's economic context has changed significantly since they were established after the 2008-2009 financial crisis (European Commission, 2020). In this sense, the ‘Two Pack' and the 'Six Pack', which were suspended in 2020 and to be reactivated in 2024, are being studied for potential adjustments. A review is expected to reinforce the EU's ability to act in an increasingly volatile geopolitical context, as demonstrated by the pandemic crisis and invasion of Ukraine (Alde Party, 2023). Considering this review, we have seen several reform proposals, some of which are based on the US legal tradition and primarily advocate for the adoption of a standard-based regulation to the detriment of the existing rules-based one. The possible advantage of these policies stems from the undefined and unbinding nature of standards, which would enable more discretion for the EU authorities (Blanchard et al, 2021).

3. Data

The selection database procedure will be based on the four main rules of the SGP are: I. Deficit rule: a country is compliant if (i) the budget balance of general government is equal or larger than -3% of GDP or, (ii) in case the -3% of GDP threshold is breached, the deviation remains small (max 0.5% of GDP) and limited to one year; II. Debt rule: a country is compliant if the general government debt-to-GDP ratio is below 60% of GDP or if the excess above 60% of GDP has been declining by 1/20 on average over the past three years; III. Structural balance rule: a country is compliant if (i) the structural budget balance of general government is at or above the medium-term objective (MTO) or, (ii) in case the MTO has not been reached yet, the annual improvement of the structural balance is equal or higher than 0.5% of GDP, or the remaining distance to the MTO is smaller than 0.5% of GDP; IV. Expenditure rule: a country is compliant if the annual rate of growth of primary government expenditure, net of discretionary revenue measures and one-offs, is at or below the 10-year average of the nominal rate of potential output growth minus the convergence margin necessary to ensure an adjustment of the structural budget deficit in line with the structural balance rule.

Utilizing these parameters facilitates the transition to the subsequent data requirement, which involves identifying Member States that adhere to the fiscal rules and those that do not. Following this segregation, we will delve deeper into economic parameters to analyse factors that may compromise performance.

All in all, we will examine: Average compliance with fiscal rules, GDP per capita, GDP per capita growth, Current Account Balance (% of GDP), Gross Fixed Capital Formation (% of

GDP), Gross Savings (% of GDP), Public and Private Debt (% of GDP), Unemployment rate, and Labour Productivity per hour worked (***Table 1*** to detailed information on each variable).

Table 1 *- Synthesis of fiscal compliance variables and economic variables*

Variables	**Abbreviation**	**Sources**
GDP per capita	*'GDP'*	Eurostat
GDP per capita growth	*'GDP_grwth'*	World Bank
Current Account Balance (% of GDP)	*'CA'*	World Bank
Gross Fixed Capital Formation	*'GFCF'*	Eurostat
Gross Fixed Capital Formation (% of GDP)	*'GFCF_GDP'*	World Bank
Gross Savings (% of GDP)	*'savings'*	World Bank
Public Debt (% of GDP)	*'public_debt'*	Eurostat
Private Debt (% of GDP)	*'private_debt'*	Eurostat
Unemployment Rate	*'unemp_rate'*	World Bank
Labour productivity per person employed and hour worked	*'labour_prod'*	Eurostat

Among the economic variables, we aim to evaluate the magnitude of economic compliance or non-compliance with the Deficit and Debt Rules among countries, and to observe how each country's macroeconomic health (indicated by variables such as income per capita, current account balance, investment, savings, and unemployment rate) evolves.

4. Methodology

After a brief overview of the recent situation in the EU Member-States, our analysis of compliance with fiscal rules within the EU will be concentrated under a smaller scope of six EU Member-States: Germany, France, Hungary, Portugal, Greece, and Italy. The rationale behind this selection is based on the conditions established under Article 126 of the Treaty for launching an EDP.

Our paper's economic analysis will consist of breaking down each country's variables mentioned in the section "Data" across a relevant timeframe (2000 - 2020), which will capture the period of modifications to the corrective arm and the COVID-19 crisis. For that, our method will be to plot both the graphs with the evolution of each parameter for the group of six countries over time and the graphs with all the variables for each country over time. As for analysis, there will be visual analysis of the graphs to detect patterns, and more quantitative analysis using annual growth rates. This will allow for observation of potential patterns of non-compliance within, for example, the aftermath of economic shocks, as indicators of, once again as an example, outdated and/or ineffective fiscal policy.

5. Results

In order to conclude regarding the impact of the alterations of the corrective arm (dated from 2005, 2011, 2013, and 2020), the results obtained of the treated data were plotted and the rates (variation) of the numerical values were computed.

GDP per capita

In the 2005 timestamp, it is possible to observe an accentuated growth of GDP per capita (positive evolution) in France, Germany, Italy, and Greece, and a more discrete evolution (continuation of the past trend) for Portugal and Hungary.

Before 2011, we can clearly notice the impact of the Financial crisis on the GDP per capita of all countries. During this “inter-crisis" period, we notice a distinct recovery pattern between the countries least affected by the financial crisis (Germany, Hungary and France) who saw a V-shaped recovery, and the ones who were most affected (Greece, Italy and Portugal) whose GDP continuously declined for a longer period than the others. It is also important to mention that Greece’s GDP per capita still has not reached the values prior to the 2007 crisis.

Regarding the year of 2013, some countries experienced a negative growth (Greece, Italy and Portugal), while others (Germany, France and Hungary) saw an increase in their income compared to the previous year. Nevertheless, this positive evolution of the three countries was relatively modest, when comparing annual growth rates of GDP per capita for the group of six.

It is relevant to mention the year that COVID-19 hit the economy (2020) where it is observable a very accentuated drop in the GDP per capita of all countries in the analysis, however, it is also noticeable a speedy recovery of this parameter to pre-COVID levels just around a year after the drop.

GDP per capita growth

The 2005 timestamp was the low peak of a downward trend that had been running on for about the previous year, putting an end to a huge drop in the GDP per capita growth for Greece, and less accentuated drops for the remaining countries, except for Hungary that continued the downward trend on this parameter.

In the period between the Financial Crisis and the Sovereign Debt crisis, we notice sizeable disparities between countries' GDP growth. As expected, the graph shows a deep decline in GDP growth during 2007, followed by a steady recovery across most countries. Greece was the country with the sharpest decrease in GDP growth, whereas Germany was the country with the highest level of growth until the 2012.

In 2013, although we had identified two groups - one experiencing annual positive growth (Greece, Italy and Portugal) and the other experiencing negative growth of GDP per capita - it remains true that the growth of GDP per capita, whether positive or negative, had decreased in magnitude. This reflects into negative values on this parameter to all countries, meaning that all of the countries were less subject to fluctuations on their GDP compared to the previous year.

As of 2020, as expected, there was a huge drop in GDP per capita growth, revealing a huge regression in the GDP per capita values (growth is negative). Despite being an abrupt drop, it allowed for the biggest GDP per capita growth ever seen since the 2000s in the following 1,5/2 years.

Current account balance (% of GDP)

In 2005, with this parameter, it is not easy to generalize for the whole group of countries, once it is possible to observe three distinct groups of trends. The first one, encompassing Germany and Hungary, is characterized by a notorious increase in this parameter. Then, for France and

Italy, it is observable the continuation of the downward trend that was present prior to 2005. Lastly, for Greece and Portugal, there is the accentuation of that prior downward trend.

In the period between 2007 and 2012, we notice a significant in Hungary's current account balances (% of GDP), while the other countries maintained similar levels compared to the previous period, except for Greece who presented the worst CA deficit during this sample period.

As of 2013, only two countries, France and Greece, are presenting negative trade balances. Among the other group, the one with trade surpluses (comprising Germany, Hungary, Italy and Portugal), Germany continues to improve its already positive position, while Hungary, Portugal, and Italy have been improving their balances, shifting from a negative to a positive one, after an adverse period. In the future (with lagged effect), this will translate into a reduction in indebtedness level for these three countries.

Regarding the COVID-19 shock, it is possible to observe three distinct patterns. For Germany and France, the 2020 period configured the point of inflection giving a start to a recovery in this parameter. Then, in the case of Portugal and Greece, there were no significative changes in the year post-2020 shock, although for Greece, 2020 and 2021 were a point of stabilization after the steep decrease of previous years and before another period of steep decline from 2022 onwards. Lastly, for Italy and Hungary, 2020 was the year before an abrupt decline in the values of this parameter.

Gross Fixed Capital Formation

In 2013, countries such as Greece, France, Italy and Portugal registered negative growth in Gross Fixed Capital Formation (GFCF), while the remaining countries experienced positive growth in this indicator.

Regarding the COVID-19 shock, it had no significant effect on Greece, Hungary, and Portugal regarding gross fixed capital formation, while for the rest of the group of countries, that is for Germany, France, and Italy it is observable a drop in absolute values, 2020 configuring the inflection point of this trend, leading to a speedy recovery in this parameter.

Gross Fixed Capital Formation (% of GDP)

Now, evaluating for the same variable but expressed in terms of GDP, we can perform an analysis for the year of 2005, the year of the first modification in the corrective arm. In the 2005 timestamp, it is possible to observe a point of inflection toward a positive trend in Greece, Italy, Germany, and, although less accentuated, Hungary; a soft downward trend in Portugal; and an increase for France.

As expected, after the financial crisis, we also see an accentuated dip in terms of investment, from which only France and Germany recovered completely towards levels of investment similar to pre-2007.

In 2013, all six countries, with the exception of Germany, experienced a reduction in investment in fixed assets. This decline remains a consequence of the full-fledged economic recession (Sovereign Debt Crisis), which forced some countries, public and private sectors, to reduce such investments.

As for the COVID-29 shock, Hungary, France, Germany, and Italy experienced drops, followed by a recovery period, and Greece and Portugal were not significantly affected by the shock in this parameter.

Gross Savings (% of GDP)

In the 2005 timestamp, it is possible to observe a point of inflection toward a positive trend in Italy, Germany, France, and Hungary, while Portugal suffered a continuation of the downward trend. Greece has no data available for this period.

In 2007, we can see a common trend of decreasing savings levels, with the exception of Hungary whose savings levels in this period of analysis (2007-2012) never decreased compared to the 2005 levels. Greece's savings level reached its minimum in the year 2011, reaching a value of 4.66% of GDP.

During the Sovereign Debt Crisis, Greece, Portugal and Italy were able to significantly increase their savings by 33.46%, 13.25%, and 2.74%, respectively, against -0.31% and -0.81% experienced by France and Germany, respectively. Despite France and Germany have reduced its savings, and countries like Greece, Portugal, and Italy significantly increased, the interpretation of these results should take in consideration the historical trend of Portugal, Italy and Greece having savings lower than 20% of their GDP, in contrast to the higher saving rates in other countries. Consequently, the magnitude of the positive growth of savings for these countries can be partly explained by their lower average savings.

As for the COVID-29 shock, Hungary, France, Greece, Germany, and Portugal experienced points of inflection from a downward to an upward trend while Italy experienced only the end of a somewhat constant value towards a steep upward trend.

Public Debt (% of GDP)

In 2013, amidst the chaos of the crisis, Germany and Hungary were the only countries able to reduce their indebtedness.

Regarding the impact of the COVID-19 shock (2020) on the public debt parameter, all countries suffered a point of inflection from an upward to a downward trend, differing only in the

direction of trend afterward, being almost constant for France, Hungary, and Germany, and downwards for Greece, Italy, and Portugal.

Private Debt (% of GDP)

In 2005, turning to the debt held by the country's private sector, Germany's value remained constant, Italy and France continued their upward trends, and Portugal, Greece, and Hungary had a point of inflection for more private debt (Hungary) and alteration of the curve slope, towards a less steep curve of private debt (Portugal and Greece).

After 2007, all countries in our sample showed continuously higher levels of private debt, with the exception of Germany, whose growth was negative in the years 2007, 2010 and 2011, and France whose growth rate significantly contracted after 2008.

In the 2013 timestamp, contrary to what was happening in the public sector, all countries managed to reduce their debt levels with except for Germany. However, we cannot interpret the growth rate signals draw meaningful conclusions, as all countries exhibited frequent changes in the growth signals of their private sector debt level. For instance, in the case of Germany, in 2013, there is an inflection point from an increasing debt level to a decreasing debt level. Similar situations with inflection points are verified to other countries, in the year of 2013.

In 2020, relating to the COVID-19 shock, Portugal, France, and Italy registered an inflection point towards less public debt, while Greece put to a stop in the increase in public debt, and Germany and Hungary experienced a decrease in the slope of the upward trend in public debt.

Unemployment Rate

In 2005, Germany had an inflection point towards a decrease in the unemployment rate, Greece and Italy continued their downward trend, France was not significantly affected, and Hungary

and Portugal experienced a point from when onwards the unemployment rate increased less than the previously observed trend.

Between 2007 and 2012 we only see significant increases in the unemployment rate in 2009, with many countries reaching a growth rate of more than 20% YoY (Greece, France, Hungary and Portugal). As we move along this time period we notice as well that, between 2007 and 2012, Portugal, Greece and Italy were the only countries whose unemployment rates continuously increased year after year.

In the 2013 timestamp, countries such as Germany, France, and Hungary that were able to avoid increasing their unemployment rate. In the case of Hungary, the country managed to reduce slightly its unemployment rate, partly offsetting the drastic increase in this variable, in the years of 2008 and 2009. The country's progress was more evidenced in the following periods.

As for 2020 and the COVID-19 shock, Greece and France continued their downward trend, Italy suffered an inflection point from a decrease in the unemployment rate to an increase in this parameter, and positively (and inversely), Portugal, Hungary, and Germany experienced an inflection point from an upward trend in the unemployment rate to a decrease in the unemployment rate.

Labour productivity per person employed and hour worked

In terms of Labour Productivity, we start by witnessing constant levels until the year 2007, where all countries reported a decrease in labour productivity compared to the previous year. This negative trend became more persistent in Greece and Italy, whose productivity remains below the 2005 threshold.

It is clear that, in 2013, Germany, France and Italy continued to be in the leading pack of the race. Nevertheless, even within this group, they experienced decreasing productivity rates with exception of France (but an inflection point from positive to negative signal for the productivity

growth rate). Hungary, Portugal, and Greece have an inflection point from a positive trend to a negative one, regarding the labour productivity annual growth rate.

In 2020, France and Portugal maintained their downward trends in labour productivity; Germany, Italy, and Greece suffered inflection points (the first one from an upward to a downward trend, and the last two countries in an inverse way). Lastly, Hungary experienced a decrease in the slope of its upward trend.

6. Conclusion

The empirical study of the Stability and Growth Pact (SGP) and its impact on the fiscal governance of EU member states has yielded insights. Our analysis focused on the corrective arm, which is designed to address excessive deficits and debt levels among member states. This study aimed to assess the effectiveness of these fiscal rules, their shortcomings, and the macroeconomic behaviour of member countries during their implementation.

The results revealed that the timestamps of the alterations consistently matched with points of inflection in the trajectories of multiple parameters. However, it is important to acknowledge that assuming causality between modifications to the corrective arm and the observed trajectory changes would be incorrect without a comprehensive analysis of other potential contributing factors.

Among the six EU Member States analyzed, Hungary emerged as the best performer, ranking highly for indicators such as GDP per capita growth, Gross Fixed Capital Formation, Gross Savings, Public and Private Debt, and Unemployment Rate. Hungary's overall strong performance could be attributed to its non-adoption of the Euro (unlike the other countries in the group). This is also consistent with the country’s growth phase. Greece was identified as the worst performer in the group, while Germany demonstrated a robust performance, reinforcing its reputation as one of the more stable economies within the EU.

Overall, the findings highlight the complexities and nuances of fiscal policy implementation across diverse economic landscapes. While the corrective arm of the SGP has faced criticism for its procyclical nature and perceived double standards, it remains a pivotal element in the EU's fiscal framework. Future adjustments to the SGP should consider the economic specificities of member states to enhance its efficacy and ensure a balanced approach to fiscal governance.

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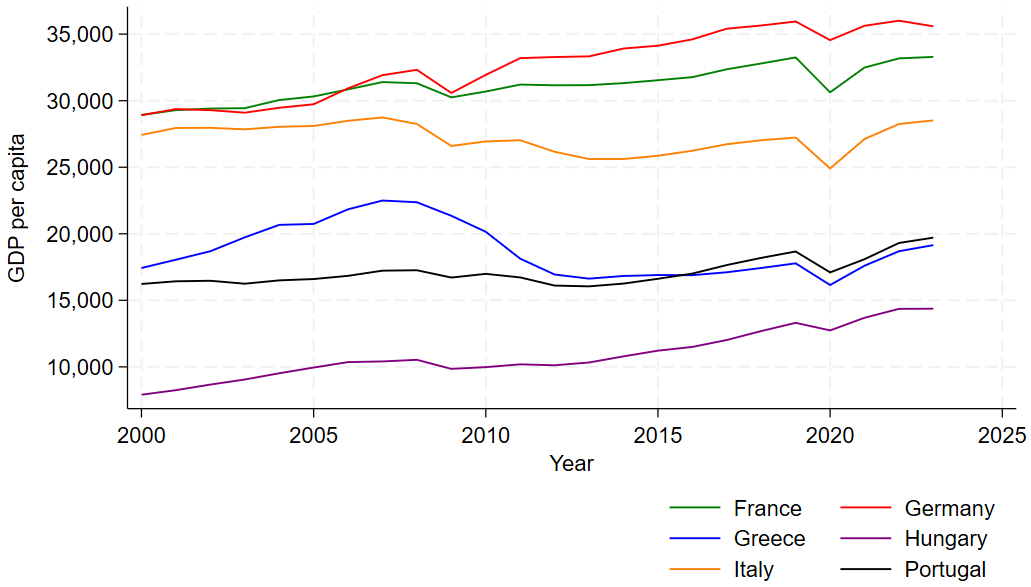
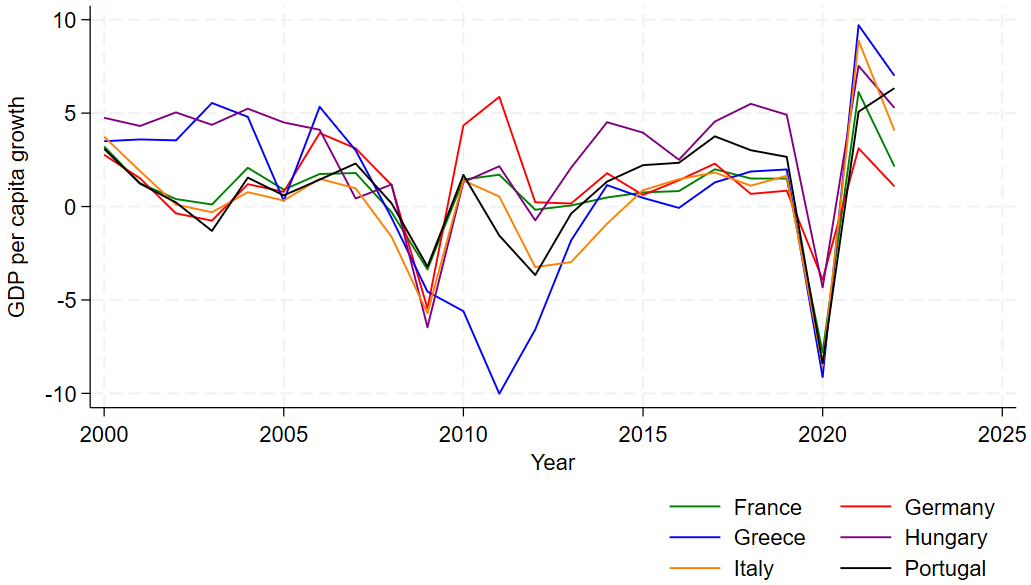
8. Appendices

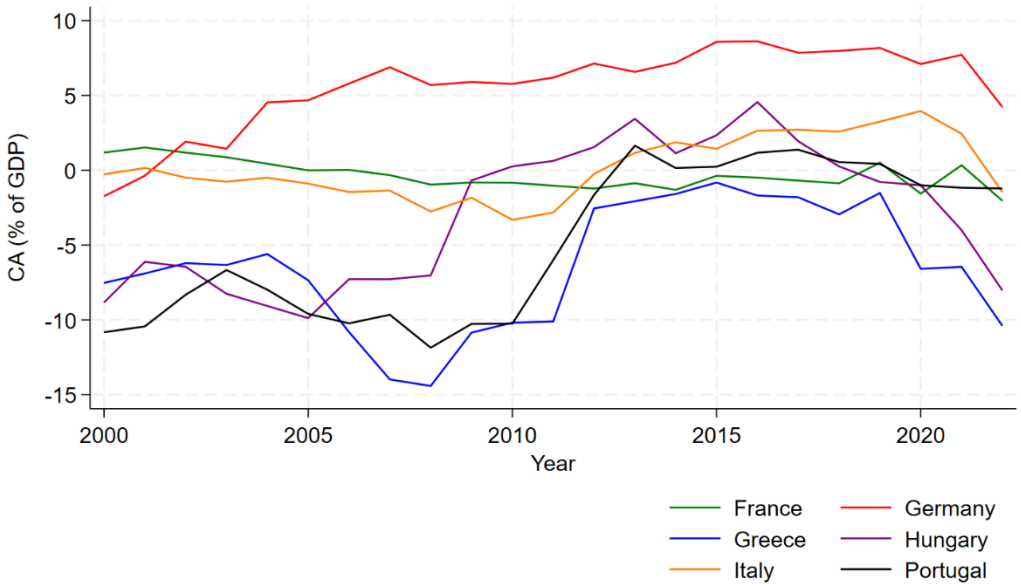
Appendix 1 *- GDP per capita*



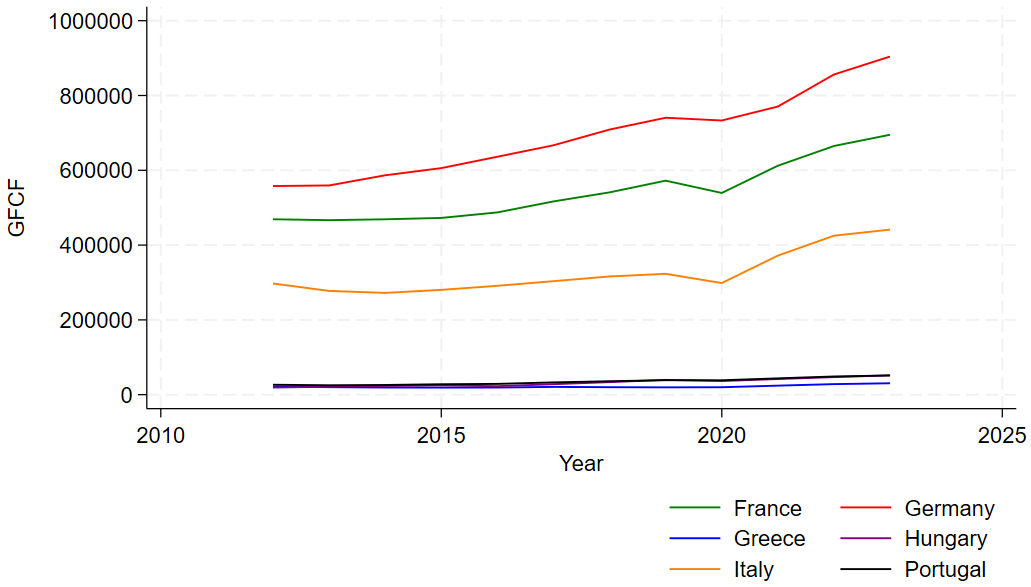
Appendix 2 *- GDP per capita growth*



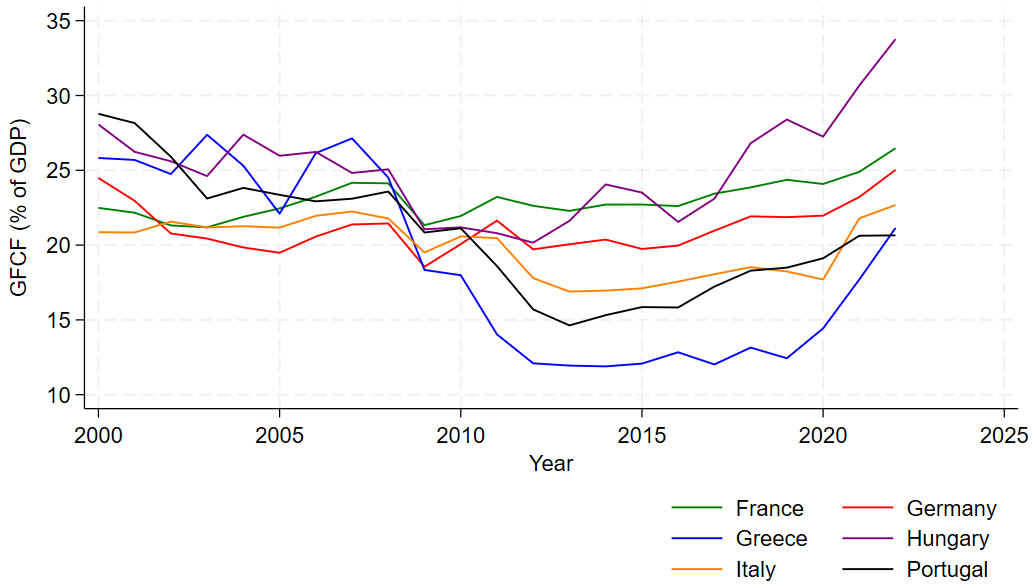
Appendix 3 *- Current Account Balance (% of GDP)*



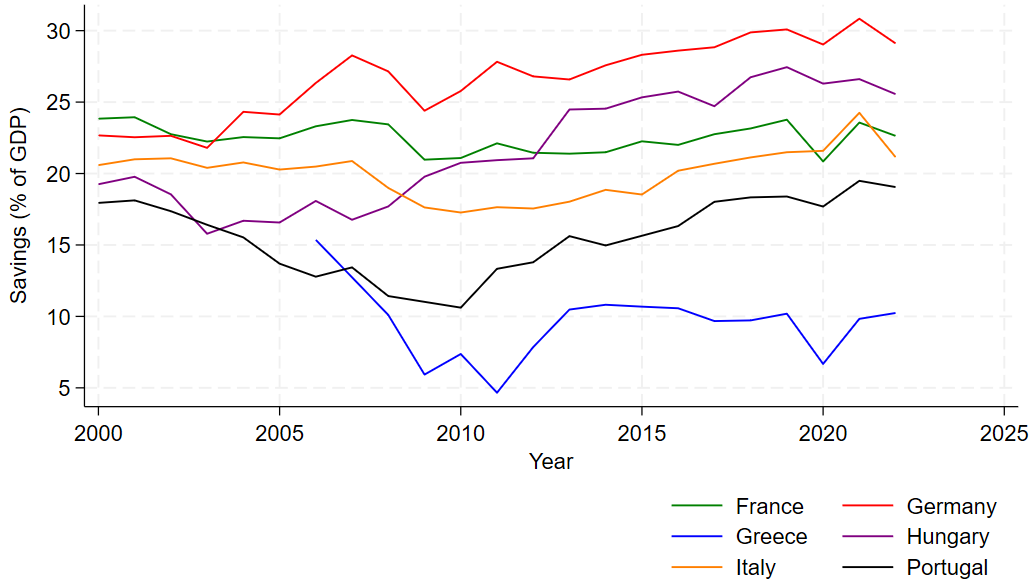
Appendix 4 *- Gross Fixed Capital Formation (absolute terms)*



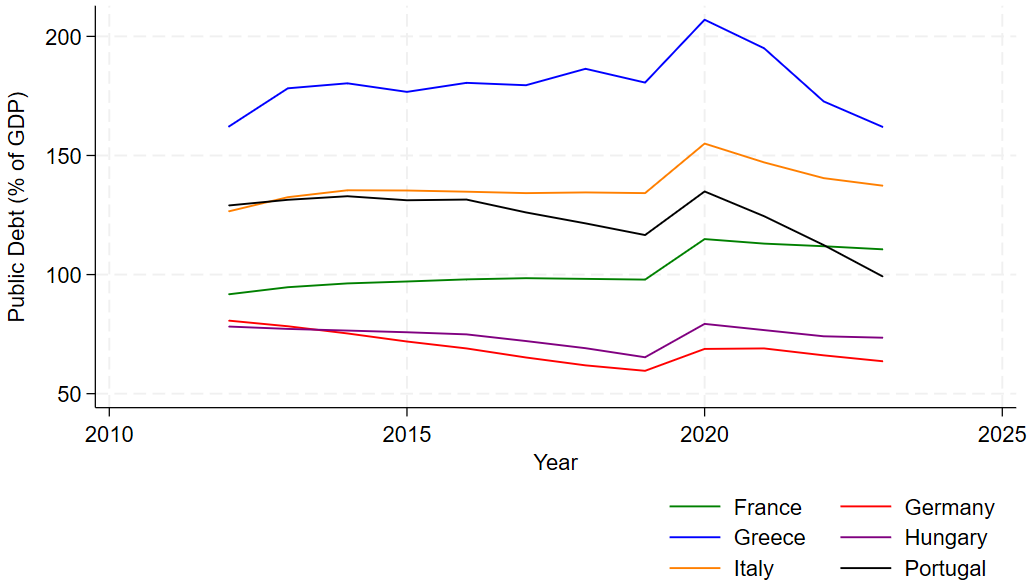
Appendix 5 *- Gross Fixed Capital Formation (% of GDP)*



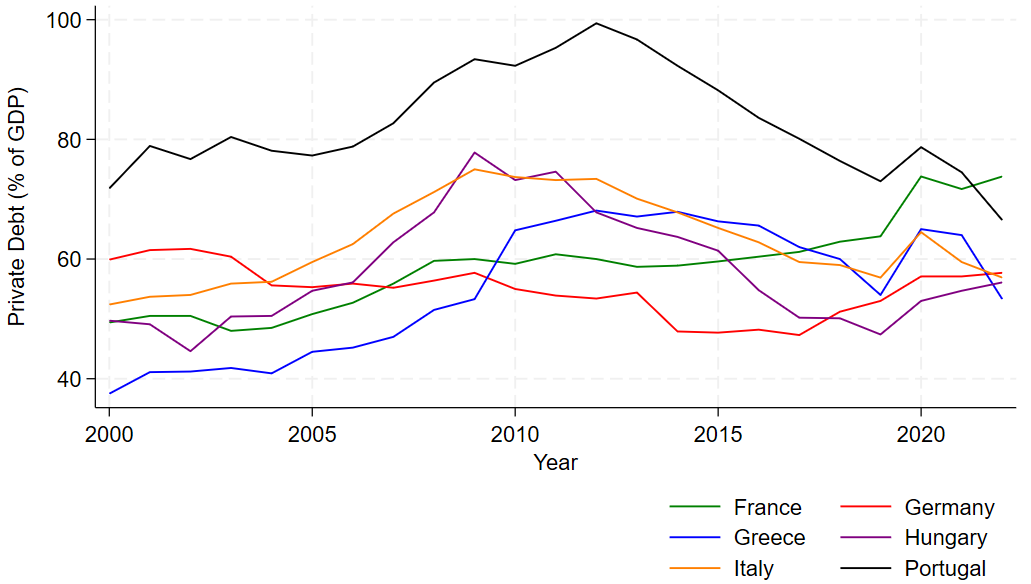
Appendix 6 *- Gross Savings (% of GDP)*



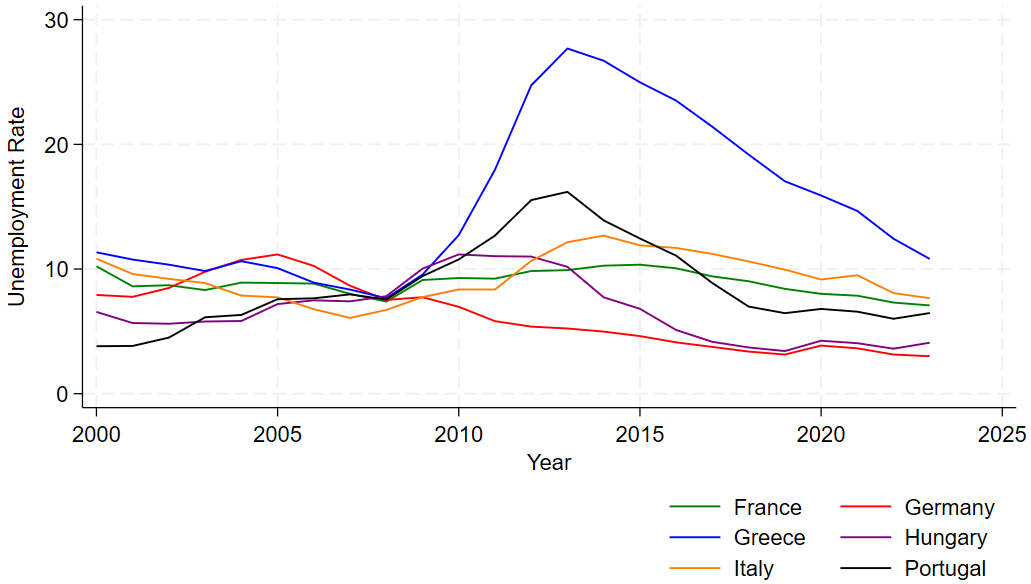
Appendix 7 *- Public Debt (% of GDP)*



Appendix 8 *- Private Debt (% of GDP)*



Appendix 9 *- Unemployment Rate*



Appendix 10 *- Labour productivity per person employed and hour worked*