



T.C.

ANKARA YILDIRIM BEYAZIT UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES

THE IMPACT OF FISCAL RULES AND FISCAL COUNCILS ON FISCAL PERFORMANCE: EU COUNTRIES

MASTER'S THESIS

Emine KEPEZ

DEPARTMENT OF PUBLIC FINANCE

ANKARA, 2023

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APPROVAL PAGE

The thesis study titled as “THE IMPACT OF FISCAL RULES AND FISCAL COUNCILS ON FISCAL PERFORMANCE: EU COUNTRIES” prepared by Emine KEPEZ was unanimously approved by the following jury as a Master's thesis in Ankara Yıldırım Beyazıt University Graduate School of Social Sciences Department of Public Finance.

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Emine KEPEZ



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ABSTRACT

The Impact of Fiscal Rules and Fiscal Councils on Fiscal Performance: EU Countries

Discretionary fiscal policies implemented onwards the 1930s within the framework of the Keynesian approach to fiscal policy, which emerged as a remedy for depression or stagnation, have led to an increase in budget deficits and debt stocks since the 1980s. In countries seeking permanent solutions to prevent macroeconomic instability and deterioration in fiscal discipline, fiscal rules and then fiscal councils emerged and became widespread. In this thesis, the effect of fiscal rules and councils, whose main objectives are to ensure macroeconomic stability, fiscal discipline, and efficiency in public finance and to improve fiscal performance, on fiscal performance is analyzed. For this purpose, the effect of fiscal rule index value, fiscal council dummy variables, and interaction terms representing fiscal rules supported by fiscal councils on the primary budget balance is examined. The study's main research questions are whether fiscal rules and councils effectively achieve the specified objectives and whether these effects differ in pre- and post-crisis periods. In this context, a comparative dynamic panel data analysis is carried out between 1996-2008 and 2009-2019 in the study covering 28 EU countries. The distinctive aspects of the study are the consideration of the separation of remits of the fiscal councils, the inclusion of interaction terms in the analysis, and the comparative analysis before and after the crisis. According to the results of the model using the System Generalized Method of Moments, it is seen that the fiscal rules improved the fiscal performance in both periods. However, each fiscal council does not have a statistically significant effect on improving fiscal performance, given the separation of fiscal council remits. Furthermore, it is concluded that interaction terms improve fiscal performance in both periods.

Keywords: Fiscal Rule, Fiscal Council, Fiscal Performance, Dynamic Panel Analysis.

ÖZET

AB Ülkelerinde Mali Kuralların ve Mali Konseylerin Mali Performans Üzerindeki Etkisi

Maliye politikasına depresyon veya durgunluk için bir çare olarak ortaya çıkan Keynesyen yaklaşım çerçevesinde 1930'lu yıllardan itibaren uygulanan iradi maliye politikaları, 1980'li yıllardan itibaren bütçe açıklarının ve borç stoklarının artmasına neden olmuştur. Yaşanan makroekonomik istikrarsızlığın ve mali disiplindeki bozulmanın önlenmesi amacıyla kalıcı çözüm arayan ülkelerde ilk olarak mali kurallar ardından mali konseyler ortaya çıkmış ve yaygınlaşmıştır. Bu tezde, temel amaçları makroekonomik istikrarı, mali disiplini ve kamu maliyesindeki etkinliği sağlamak ve mali performansı iyileştirmek olan mali kural ve konseylerin mali performans üzerindeki etkisi analiz edilmektedir. Bu amaçla, mali kural indeks değeri, mali konsey kukla değişkenleri ve mali konseylerle desteklenen mali kuralları temsil eden etkileşimli terimlerin birincil bütçe dengesi üzerindeki etkisi incelenmektedir. Mali kuralların ve konseylerin hedeflenen amaçlara ulaşmada etkili olup olmadığı ve bu etkilerin kriz öncesi ve sonrası dönemde farklılaşıp farklılaşmadığı çalışmanın temel araştırma sorularını oluşturmaktadır. Bu kapsamda 28 AB ülkesini kapsayan çalışmada 1996-2008 ve 2009-2019 arası dönemler için karşılaştırılmalı bir dinamik panel veri analizi yapılmaktadır. Çalışmanın özgün yönleri mali konseylerin görev ayrımlarının dikkate alınması, etkileşimli terimlerin analize dahil edilmesi ve kriz öncesi ve sonrası karşılaştırmalı bir analiz yapılmasıdır. Sistem Genelleştirilmiş Momentler Metodunun kullanıldığı model sonuçlarına göre, mali kuralların her iki dönemde de mali performansı iyileştirdiği görülmektedir. Ancak mali konseylerin görev ayrımı dikkate alındığında her mali konseyin mali performansı iyileştirmede istatistiksel olarak anlamlı bir etkisi olmadığı görülmektedir. Etkileşimli terimlerin ise her iki dönemde de mali performansı iyileştirdiği sonucuna ulaşılmaktadır.

Anahtar Kelimeler: Mali Kural, Mali Konsey, Mali Performans, Dinamik Panel Veri Analizi.

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LIST OF ABBREVIATIONS

CAB	: Cyclically Adjusted Budget Balance
CAI	: Cyclically Adjusted Income
CAPB	: Cyclically Adjusted Primary Budget Balance
CAPE	: Cyclically Adjusted Primary Expenditure
CPI	: Consumer prices index
ECOFIN	: European and Financial Affairs Council's
eu	: European Monetary Union Dummy Variable
EU	: European Union
fc_cwo	: Fiscal councils that consistency with objectives
fc_fa	: Fiscal councils that forecast assessment.
fc_lts	: Fiscal councils that long-term sustainability
fc_mfr	: Fiscal councils that monitor fiscal rules.
fc_re	: Fiscal councils that recommendations
fr	: Fiscal Rule Index
FRA	: Financial Responsibility Act
GDP	: Gross Domestic Product
GMM	: Generalized Method of Moments
IMF	: International Monetary Fund
inf	: Inflation
IV-2SLS	: Instrument Variables- Two Stage Least Squares
kof	: KOF Globalization Index
kofegi	: KOF Economic Globalization Index
LSDV	: Least Squares Estimator Dummy Variable
LSDVC	: Bias-Corrected Least Squares Dummy Variable
MT	: Maastricht Treaty

MTBF	: Medium-Term Budgetary Framework
NLPCA	: Nonlinear Principal Component Analysis
OECD	: Organization for Economic Cooperation and Development
OLS	: Ordinary Least Squares
pb	: Primary Budget Balance
SGP	: Stability and Growth Pact
to	: Trade Openness
TSCG	: Treaty on Stability, Coordination, and Governance
unemp	: Unemployment

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1. INTRODUCTION

The belief in limited government intervention, fundamental principle of classical economic thought, led to the conclusion that fiscal policy plays a secondary role in achieving and maintaining macroeconomic stability. It was not until the devastating effects of the Great Depression and the publication of Keynes' magnum opus in 1936 that fiscal policy began to be considered as a secondary tool in economic management. In other words, it was only after the Great Depression and the subsequent New Deal program that fiscal policy was firmly institutionalized as a major policy option, and discretionary fiscal policy was considered as an effective means of supporting aggregate demand, stimulating consumption, reducing unemployment, and increasing output. The Keynesian approach to fiscal policy as a remedy for depression or recession is straightforward. The basic assumption of classical economics is that natural market forces would automatically stabilize the imperfections in any economy. The Keynesian argument, on the other hand, challenges this claim and emphasizes the importance of expansionary fiscal policies through an effective demand mechanism. The failure of the classical economic approach in dealing with the rising unemployment and contraction in total demand in the wake of the 1929 economic depression gave rise to the idea of using fiscal policy as a tool to ensure economic stability. In this context, the suggestions of John M. Keynes that expansionary fiscal policies could overcome this crisis have been implemented in many countries and have been successful. Given the experiences of many countries, Keynesian policies revealed the importance of fiscal policy elements and the fiscal policy performance of countries. From the 1930s to the 1970s, discretionary fiscal policies were implemented in various countries. These policies led to a significant increase in public spending after the Second World War, and, as a result, the budget deficits increased sharply. In the mid-1970s, public debt stocks and budget deficits began to increase sharply and steadily, reaching alarming levels in many countries and exacerbating the troubling phenomenon of stagflation. Although discretionary fiscal policies were implemented until the 1980s to ensure macroeconomic stability, these policies were insufficient to solve the widespread unemployment problem that emerged after the first and second oil shocks. Following the implementation of discretionary fiscal policies, a prevailing trend since the 1980s has been the substantial escalation of budget deficits and debt levels around the world, across national borders. As a result, macroeconomic instability has become apparent again as a disturbing concern for both policymakers and academics. Recent developments have

sparked controversy over the effectiveness of discretionary fiscal policy and its ability to ensure economic stability. Amidst the prevailing pessimistic economic climate characterized by alarming levels of budget deficits and rising debt stocks, the question arose as to whether fiscal policy elements, which could pull the economy out of the crisis and prevent contraction, can also be used for political purposes. In other words, it was beginning to be argued that politicians use fiscal policy to serve their own interests. The main factors causing deficit bias are the short-sightedness of policymakers and their desire to be re-elected, political myopia, principal-agent relationship, asymmetric information, common pool problem, and time inconsistency. Fiscal rules and fiscal councils are institutional arrangements created to overcome the inefficiencies caused by the factors mentioned above. First, the fiscal rule is applied in countries seeking permanent solutions to prevent deviations in social welfare and deterioration in fiscal discipline, which is followed by emergence and becoming widespread of fiscal councils.

For the European Union (EU) to be able to react quickly to economic and fiscal shocks and to maintain the balance, public finances need to be sound. Since the 1980s, public debt stocks and budget deficits have been increasing in EU countries, as is the case for other countries around the world. In the wake of the global economic crisis in 2008 and subsequent EU debt crisis, budget deficits and debt stocks in EU countries rose to critical levels. It was crucial to strengthen the fiscal framework, as concerns about fiscal discipline and fiscal sustainability also increased in EU countries. Since the 1990s, first fiscal rules and then fiscal councils and medium-term budgetary frameworks have come to the fore in efforts to strengthen the fiscal framework and contribute to the fiscal performance in the EU. In this context, the Maastricht Treaty (MT) signed in 1992 and the Stability and Growth Pact (SGP) adopted in 1997 emphasizes the importance of rules and councils for fiscal discipline. While encompassing the fiscal targets in the Maastricht criteria as they are, the SGP recommends a medium-term budgetary position aiming at budget balance or surplus. Over time, the SGP has undergone many reforms to achieve fiscal discipline and strengthen the EU's fiscal framework. In addition to the supranational fiscal rules, many fiscal rules are applied at the national level to improve the fiscal performance in EU countries. In addition to the fiscal rules, there are 29 fiscal councils in the EU to ensure fiscal discipline and macroeconomic stability and to strengthen the fiscal framework.

The impact of fiscal rules in EU countries on fiscal discipline and fiscal performance has been extensively studied in the literature. However, the impact of fiscal councils, created to enhance the credibility of fiscal rules and the quality of fiscal policy implementation, on countries' fiscal performance has not been sufficiently analyzed in both theoretical and empirical studies. The main purpose of this thesis is to shed light on the impact of fiscal rules and fiscal councils, established to ensure the sustainability and stability of public finance, on fiscal performance. In this context, it is analyzed whether the fiscal councils and the fiscal rules applied in EU countries are effective in achieving the specified objectives. In line with the above-mentioned purpose, this thesis conducts dynamic panel data analysis using annual data for 28 EU countries between 1996 and 2019.

This thesis differs from the studies in the literature in important respects. The first of these differences is that it provides a comparative analysis of the pre-crisis and post-crisis periods. In addition, the study divides fiscal councils into five different remits and analyses the impact of fiscal councils on fiscal performance according to their remit differences. The literature has not examined the impact of the fiscal council, which undertakes these five remits, on fiscal performance. Examining the impact of fiscal rules supported by fiscal councils on fiscal performance in the context of the interaction term is another contribution of the thesis to the literature. Although the impact of the fiscal rules supported by the fiscal councils on the fiscal performance has been examined before, neither the remit separation of the fiscal council nor a dynamic analysis has been conducted (e.g., Maltritz & Wüste, 2015; Dimitra, 2021). Moreover, this thesis differs from other studies in the literature in that it makes model predictions using the GMM system, which gives more effective results in dynamic panel data models than other methods. Based on these differences, this thesis aims to be the first study in the literature that focuses on the impact of fiscal councils on fiscal performance within the framework of five different remits and analyzes the impact of fiscal rules supported by fiscal councils on fiscal performance in a dynamic structure.

After briefing introductory remarks, the second chapter of the study provides conceptual explanation of the fiscal framework and fiscal performance. First, the main components of the EU fiscal framework-the fiscal rule, the fiscal council, and the medium-term budgetary framework- are examined in detail. In the context of fiscal rules, the definition of the rules, the reasons for their emergence, their characteristics, scope, and types are mentioned. Fiscal authorities are divided into two categories: fiscal councils and

independent fiscal institutions. The medium-term budgetary framework is also broadly explained, which is followed by its description and indicators in the fiscal performance section.

The third chapter of the study examines fiscal rules and councils in EU countries in detail. Within the legal and institutional framework of fiscal rules and councils, the MA, the SGP and their reforms are covered. The stages of establishing an economic and monetary union are explained in the relevant section. For EU countries, both the supranational and national fiscal rules are described in detail. The establishment, characteristics and duties of 29 fiscal councils in the EU are then examined in detail.

The fourth chapter of the study first presents the existing empirical literature related to the study. After providing information about the methods and variables used to analyze the impact of fiscal rules and councils on fiscal performance, the model results are reported. And the model results are also evaluated in detail.

A general evaluation is made in the last chapter of the study, and a conclusion is drawn. Considering the results of the model, policy recommendations are also presented in the relevant section.

2. A CONCEPTUAL EXPLANATION OF FISCAL FRAMEWORK AND FISCAL PERFORMANCE

2.1. Fiscal Framework

Fiscal anchors for fiscal targets and indicators constitute the fiscal framework for establishing fiscal responsibility, enhancing the credibility of fiscal policy, ensuring fiscal sustainability and macroeconomic stability. Fiscal rules and councils are crucial for the sustainability and strengthening of the EU fiscal framework. In the aftermath of the 2008 financial crisis, most EU member states made significant fiscal efforts to avoid any deflationary spiral. This resulted in high budget deficits and debt burdens. Amidst growing concerns about fiscal sustainability, it became essential to strengthen and adjust the domestic fiscal framework considering the lessons learned from the crisis. In this context, the European and Financial Affairs Council's (ECOFIN) decisions of October 2009 stated that strengthened national budgetary frameworks would be a part of the fiscal exit policies (EC, 2010). The number of fiscal councils in EU countries has dramatically increased in order to improve the domestic fiscal framework, monitor compliance with national fiscal laws, ensure fiscal discipline and compose or approve official macroeconomic forecasts. Simultaneously, the structure of the fiscal rules that have been widely applied since the 1990s has been changed. Fiscal councils, whose role in fiscal surveillance over time in the EU has grown over time, are primarily responsible for critically assessing fiscal policy decisions and budgetary developments. In some cases, they may also provide objective advice. Fiscal councils and sound fiscal rules support sound budgetary policies and sustainable public finances and are the main components of the fiscal framework (Von Trapp et al., 2016).

The implementation of fiscal rules in the EU is considered within the framework of the MT and the SGP. Over time, the problems that may arise from strict rules have come to the fore, and several regulations have been made within the framework of the SGP, the first of which was in 2005. Although considerable changes were made on the basis of the 2005 fiscal rules, the debt crises in 2008 and subsequent years highlighted the need for reform. Many initiatives have been proposed over this period to strengthen the fiscal framework. The proposals both address international fiscal governance in the context of the revised SGP and aim to improve the design of fiscal frameworks at the national level. The SGP's six-pack reform in 2011 introduced independent evaluation components with a more prominent role

in the EU fiscal framework. A well-designed fiscal framework enhances the sustainability of public finances and helps to internalize the costs of fiscal indiscipline. The new regulations strengthen the fiscal framework by effectively countering governments' deficit tendencies and ensuring coordination between a single monetary policy and multiple national fiscal policies (Nerlich & Reuter, 2013).

Domestic fiscal frameworks have three main components, namely numerical fiscal rules, fiscal authorities, and budgetary procedures that govern the planning, approval and implementation of the budget (EC, 2010, Claeys et al., 2016). In addition, due to their importance in developing medium-term plans for fiscal policies, medium-term budgetary frameworks (MTBF) for multi--annual budget planning are among the components of the domestic fiscal framework (EC, 2010).

2.1.1. Fiscal Rules

2.1.1.1. Definition and Features of Fiscal Rules

There are different definitions of fiscal rules, which can be broadly categorized into two different approaches: narrow definitions and broad definitions. In the narrow sense, fiscal rules are legal and constitutional restrictions on fiscal indicators (debt, expenditure, budget balance, taxation) (Kennedy et al., 2001; Von Hagen, 2005). According to Kopits & Symansky (1998), fiscal rules, defined as a determinant of fiscal performance, are permanent restrictions placed on fiscal policy, usually in proportion to GDP. As is clear from the definitions, the narrow definition of fiscal rules highlights numerical constraints on fiscal performance indicators, while the decision and application methods, as well as the behavioral and legal procedures affecting the implementation stages of the rules gain importance in the broad definition. In a broad sense, fiscal rules are defined as legal and behavioral constraints including the stage of organizing, approving and implementing the budget. They can take various forms, such as policy statements, multi-annual budget plans or budgetary regulations. (Hallerberg et al., 2007; Kennedy et al., 2001). In addition to numerical rules, fiscal rules also include several procedural rules to enhance predictability and provide more transparency.

Fiscal rules are accepted as a general indicator of fiscal performance in the macroeconomic context, as they are prudential in nature and often set targets for specific

periods. Legal agreements known as fiscal rules have been created to ensure macroeconomic stability, fiscal sustainability and fiscal discipline, with a view to increasing government credibility, preventing populist policies and eliminating deficit tendency (Bergman et al., 2016). Including numerical restrictions and legal regulations on discretionary fiscal policy, fiscal rules are implemented to reduce the level of economic vulnerability (Karayazı, 2017). Being a trade-off between commitment and flexibility, fiscal rules on the one hand, provide commitments that can limit the government's tendency to run deficit, and on the other hand, they can put the government in a difficult position in cases of fragility and adverse shocks (Halac & Yared, 2017).

Fiscal rules contribute to fiscal consolidation as they increase the credibility of the government's fiscal policies (Fiess, 2004). Associated with improving fiscal performance, they aim at strengthening fiscal discipline (Kumar et al., 2009). As a requirement of the morality of fiscal responsibility, fiscal discipline is a balance between public revenues and expenditures. In this context, fiscal rules are a tool to help eliminate the instability that may arise from the political effects of discretionary fiscal policy and ensure fiscal discipline (Aktan et al., 2010). Fiscal discipline aims to keep the debt stock at a certain level; however, limiting the debt stock alone is not sufficient to ensure fiscal discipline. In this regard, efficiency is a prerequisite for the efficient allocation of resources and the efficiency of public services. Moreover, persistence in fiscal discipline is essential and must be ensured. One purpose of fiscal rules is to ensure macroeconomic stability, and the key to macroeconomic stability is fiscal discipline.

Fiscal rules should not hinder, but rather support, the three main functions of fiscal policy: stabilization of the economic cycle, promotion of long-term growth, and inclusiveness (Lledó et al., 2018). There are several perspectives on the requirements for the characteristics and structure of fiscal rules. According to Kopits & Symansky (1998), fiscal rules should have specific essential characteristics. Accordingly, fiscal rules should be simple, flexible, transparent, consistent, well-defined, sufficient, enforceable and supportable. The fiscal rules in place must be simple, i.e. understandable to all and consistent with other policies. The rules need to be flexible in order to deal with external shocks and extraordinary circumstances. Transparency helps to make fiscal rules more realistic, which is crucial for a sustainable fiscal position. Besides, fiscal rules should be clearly defined and free from ambiguity. In other words, it should be clearly stated to which indicator the

restriction will be introduced, which sectors it will be applied to and whether the constraint will be applied at the local or national level. Fiscal rules should be sufficient, compatible, and applicable to achieve the objectives. They should be neither too narrow nor too broad to be consistent with the objectives. The fiscal rule should be designed in a way that structural reforms can support it. Moreover, they should be supported by effective policies.

Fiscal rules should be sustainable, stable, simple, flexible, traceable, enforceable and operationally guiding. Compliance with the rule should ensure long-term debt sustainability. Sustainability of quantitative targets is a requirement to that end. The sustainability of fiscal rules requires that they do not interfere with the conduct of discretionary and non-discretionary fiscal policies. In addition, compliance with the fiscal rule should reduce, rather than increase, economic volatility. Besides, the operational guidance function covers the fiscal rules that guide the budget process (Lledó et al., 2018).

Some essential elements should be taken into account when designing fiscal rules. These elements are; the legal basis, multi-annual character, monitoring of the accounting system, monitoring of the rules, enforcement mechanisms and well-defined escape clauses (EC, 2010). Fiscal rules should be supported by legal provisions and the relevant legal basis which provides for changing the rule and enforcement mechanisms in case of any non-compliance. Fiscal rules in a medium-term budgetary framework with a multi-annual character can achieve more effective results. The rules should be observed by an impartial institution in order to monitor compliance with the rules effectively. At this point, enforcement mechanisms are essential (Schick, 2003). The measures to be taken and the sanctions to be applied in case of non-compliance should be determined in advance. In addition, well-defined escape clauses are essential for effective fiscal rules. For instance, the widespread use of escape clauses was one of the novelties in the COVID crisis and helped provide policy space to respond to the health crisis (Davoodi et al., 2022). Fiscal rules must be adaptable and flexible to cyclical fluctuations. Coordination mechanisms, escape clauses allowing the rules not to be applied temporarily, and stability funds, also known as rainy day funds, are applications that can give rules flexibility against the cyclical risks (Schick, 2003). Escape clauses, which allow for a limited number of conditions, can increase reliability, are specific and concrete and set out the conditions under which deviations from the rules can be accepted. However, there is a risk of abuse of escape clauses.

Escape clauses must be implemented under certain conditions (Schaechter et al., 2012):

- i. A minimum number of factors must trigger escape clauses.
- ii. Instructions for the interventions to be performed using the escape clauses should be clearly stated.
- iii. As a result of the implementation of the escape clause, there should be a road map to return to the rule.

Most rules provide for escape clauses, in the event of unanticipated exogenous shocks. In other cases, the escape clause is to be used at the discretion of the parties in the event of a global emergency, a national catastrophe or other unspecified shocks (Kopits, 2001). As a result, some escape clauses should be considered in the event of more serious economic problems. Particularly in the case of economic shocks, the inclusion of articles in the text of the fiscal rule allowing for temporary deviations helps to ensure that the integrity of the rule is not compromised when such a shock occurs.

2.1.1.2. The Reasons and Scope of the Emergence of Fiscal Rules

2.1.1.2.1. Reasons for the Emergence of Fiscal Rules

For more than a century and a half, formal efforts have been made at various levels of government to enshrine the fiscal discipline in binding laws or constitutional articles (Kopits, 2001). This process can be divided into three distinct periods: The first period, post-World War II period and the period following the Fiscal Responsibility Act of 1994.

In the first period, sub-national levels of government in some federal states implemented the golden rule independently. During that period, the golden rule was applied, which allows borrowing only to finance investment expenditures, not current expenditures. Since the mid-19th century, most states in the US and several cantons in Switzerland have adopted commitments to maintain the budget balance since the 1920s (Karakurt & Akdemir, 2010).

The second period began with the implementation of balanced budget rules by industrialized countries such as Germany, Italy, Japan, and the Netherlands after World War

II. Following their monetary reforms, most of the countries concerned adopted balanced budget rules, generally the golden rule, to support their stabilization programs. In addition, some developing countries such as Indonesia and the Communauté Financière Africain franc region have begun adopting different rules to prevent budget deficits from being financed by local sources such as the central bank (Kopits, 2001).

The third period began in New Zealand in 1994 with the enactment of the Fiscal Responsibility Act. This Act imposed constraints on budget and debt indicators in terms of government revenue, with 3-year and 10-year targets. Following the enactment of the mentioned Act, fiscal rules have been widely implemented in many developed and developing countries (Kopits, 2001; Von Hagen, 2005). In the final period, fiscal rules have begun to be widely applied in most industrialized countries in response to the significant debt accumulation of the past 20 years (Günaydın & Eser, 2000).

As indicated above, although there are historical examples of the application of fiscal rules in earlier times, the rise in public debt and budget deficits as well as their financial consequences in the 1990s reignited the debate on limiting the implementation of fiscal policy through rules. Since then, the use of fiscal rules has become widespread. Due to the existence of fiscal deception, fiscal rule has begun to be used to ensure and strengthen fiscal discipline and macroeconomic stability.

Public choice theory and constitutional economics serve as the theoretical foundations of budgetary rules. Constitutional economic theory has claimed that fiscal rules should be created and enforced by laws. Constitutional economics argues that fiscal indiscipline generated by an overgrown public sector can be prevented through the implementation of fiscal rules included in the laws.

There are many reasons for the emergence of fiscal rules today. The unwillingness or inability of governments to implement disciplined fiscal policy measures is the main reason for the introduction of fiscal rules (Mihaljek & Tissot, 2003). According to the public choice theory literature, policymakers are opportunistic and run budget deficits because they want to be re-elected. Voters who overestimate the benefits of current spending that cause budget deficits underestimate their future tax burden and do not punish policymakers. Fiscal rules can limit this irresponsibility (Di Bella et al., 2003). Political myopia, short-term perspective, and the desire to be re-elected prevent effective and efficient use of public resources. To win

the election, expenditures may be arbitrarily increased, or taxes may be lowered due to short-sightedness (Rogoff, 1987). The existence of deficit bias is one of the main reasons for the introduction of fiscal rules. The deficit bias arises from major difficulties in public finance, such as the principal-agent problem, the asymmetric information problem, the common pool problem, and the time inconsistency problem. The following section addresses these problems by focusing on why they justify the adoption of fiscal rules.

2.1.1.2.1.1. Principal-Agent Relationship

The process by which elected officials and bureaucrats translate societal preferences into budgetary decisions may encounter problems arising from the principal-agent problem. When politicians decide to prioritize their own interests over society's interests, the problem of asymmetric information arising from the principal-agent relationship emerges. Due to the said problem, voters may remain ignorant or be incompletely informed about how their taxes are spent. Ensuring a transparent and accountable budget process and designing institutional mechanisms to reduce the principal-agent relationship are among the methods of preventing this problem. As the principal-agent relationship, which creates the potential for excessive spending, borrowing, and taxation, becomes widespread, the gap between voter preferences and the level and composition of public expenditures widens (Von Hagen, 2002). Overcoming these inefficiencies caused by the principal-agent problem is an important justification for fiscal rules.

2.1.1.2.1.2. Common Pool Problem

The common pool problem, one of the key problems in public finance, arises when the whole society bears the costs of expenditures; however, policymakers incur budget expenditures by targeting only a specific group. As for the public sector, whenever a government body can independently allocate public expenditures without an authorization from other government bodies, public decision-making has a common pool problem (Persson et al., 1997). The mentioned problem arises when more than one decision-maker is involved in budgeting. Thus, as decision-makers deal with their favored public goods, they tend to internalize the cost of their choices in terms of higher taxes needed to service and repay the debt, resulting in a deficit bias (Krogstrup & Wyplosz, 2006). Politicians' actions to promote the social welfare of the groups that support them lead to a spending strategy that

is far from the social optimum. Budget decisions taken in such an environment cause negative externalities, leading to increased budget deficits and public borrowing. While some specific policies enacted by the politician's target voters in a narrow sense, they contribute to the common pool problem in a broader sense. Fiscal rules are one of the various approaches proposed to solve the common pool problem and ensure fiscal discipline (Von Hagen, 2012).

2.1.1.2.1.3. Time-Inconsistency Problem

The argument that a fiscal rule is an effective tool for solving the time inconsistency problem derives its basis from the realm of political processes. The behavior of rational individuals in the economy is shaped by future policy expectations. In the presence of a time-inconsistent discretionary fiscal policy, individuals change their future policy expectations, resulting in a lower welfare. As a result, when expectations are adjusted for actual government behavior, such fiscal policy practices can lead to budget deficits without any output and employment benefits (Calmfors, 2015). However, when rule-based fiscal policies are implemented, the time inconsistency problem is avoided. A higher level of welfare will result from the use of rules rather than discretionary policies (Dräzen, 2004). Implementing fiscal rules reduces the uncertainty of economic policies and increases predictability by making it easier for policymakers to know their decisions and behaviors in advance (Aktan et al., 2007).

2.1.1.2.2. The Scope of Fiscal Rules

Over the past three decades, fiscal rules have been an important policy instrument for enhancing fiscal sustainability. However, the rules must have a number of characteristics to be able to fulfill the functions ascribed to them. Even though the rules are designed in a way that involves a complex set of ingredients, the relevant literature has mostly focused on the legal ground, the time frame, and the comprehensiveness of fiscal rules. Although the theoretical literature on fiscal rules argues that they should be implemented through legal regulations and be binding, in practice, laws, constitutions, policy rules, coalition agreements and international agreements have provided the legal basis for them. While imposing fiscal rules by law makes it harder to abandon or amend them quickly, the inability to quickly adjust the legally binding rules to unexpected shocks has been a significant disadvantage. In

general, constitutional fiscal rules are more binding. However, in some countries, the fiscal rules applied through laws and policy rules have an equal or greater sanctioning power than the fiscal rules applied through the constitution (Kesik & Bayar, 2010). In addition to the constitution and laws, international agreements, such as the SGP and the MT, as in the case of the EU countries, may also serve as the basis for fiscal rules.

In addition to the legal basis, another crucial feature of fiscal rules is their scope. Some argue that the broader the scope of a fiscal rule, the more effective it will be. While fiscal rules can be applied at the national and international levels, they can also be applied at the local level (Karayazı, 2017). They have been applied internationally and nationally in EU countries since the 1990s. Those applied at the national level can be used within the scope of the general government, central government, local government, and social security. Fiscal rules must cover the entire public sector to ensure fiscal discipline.

Fiscal rules can be applied from year to year or over several years. They are also used throughout the government's term of office (Wyplosz, 2012). Although the time frame differs from one country to another, the rules should be in place for a minimum of three years.

2.1.1.3. Types of Fiscal Rules

Fiscal rules are divided into numerical fiscal rules and non-numerical fiscal rules. This distinction is also referred to as fiscal rules in the narrow and broad sense.

2.1.1.3.1. Numerical Fiscal Rules

Numerical fiscal rules refer to the constraints on fiscal policy that introduce specific limits on fiscal indicators such as the budget balance, public expenditure, revenue or debt. They can be applied by setting targets or limits on the ratio of fiscal indicators to the gross domestic product or on the year-on-year rate of change in the fiscal indicators. Setting clear targets or limitations on the ratio of fiscal indicators to the gross domestic product is essential for making comparisons between countries and monitoring fiscal sustainability (Karayazı, 2018). Kopits & Symansky (1998) categorized numerical fiscal rules under three subheadings, namely budget rules, debt rules and expenditure rules. The literature examines numerical fiscal rules in four groups: budget, debt, expenditure, and revenue.

2.1.1.3.1.1. Budget Rules

Budget rules are the rules aiming at reducing and eliminating the budget deficits caused by the deficit bias behaviors of politicians. The rules may require that; the budget revenues and expenditures are equal (balanced budget), the budget deficits do not exceed a certain ratio or the budget deficit is set in nominal terms. Budget rules provide clear operational limits and can be specified as limits on the overall balance, primary balance, structural or cyclically adjusted balance or any combination of these. (Davoodi et al., 2022). There are other rules applied with regard to the budget under the fiscal rules. Non-interest expenditures are obtained by subtracting interest payments from budget expenditures. The difference between the total budget revenues and the non-interest expenditures is called primary budget balance. The primary surplus target is one of the fiscal rules applied regarding the budget (Kaya, 2009). Another fiscal rule applied to the budget is to target budget balance by excluding current investment expenditures. Expenditures such as health and education are called human capital investment. They affect growth positively (Kaya, 2009). Such expenditures are not included in the budget balance calculations to maintain growth. Budget deficit rules can be nominal and proportional. Nominal budget deficit rules cover a certain period and are generally included in the framework of the medium-term expenditure system (Karayazi, 2018).

There are several reasons for the deficit bias. Politicians' short-term perspectives, desire to be re-elected and selfishness trigger their deficit bias. Furthermore, such behaviors prevent the effective and efficient use of public resources. Deficit bias brings along time inconsistency and common pool problems (Hagemann, 2010). Budget balance rules aim at reducing and eliminating the budget deficits resulting from the above-mentioned behaviors of politicians. Although these rules are more widespread after 1990, their adoption and implementation date back to the years following World War II. Germany, the Netherlands, and Japan applied balanced budget rules in the aftermath of the World War II to prevent politicians from running deficits and ensure fiscal discipline.

Today, the budget rule is formulated proportionally as a permanent legal limit in a given period. International treaties, laws or national regulations may serve as the legal basis for the above-mentioned rules. As of 2020, 51 of the 102 rules in force in the EU are budget rules. These rules are mostly applied based on general government and local government (EC, 2020).

The primary purpose of the balanced budget rules is to ensure that the budget is balanced in terms of revenues and expenditures. However, how the rules are formulated has a direct impact on whether this objective is achieved in the desired way. For example, fiscal rules are inappropriate for the economic conjuncture, when applied for a single year. However, a multi-annual budget balance rule can help eliminate the pro-cyclical trend. Therefore, single-year rules may adversely affect economic stability when compared to multi-annual rules. Fiscal rules need to be flexible against cyclical fluctuations. Coordination mechanisms and escape clauses which may allow the rule not to be applied temporarily may increase the flexibility of the rules. Furthermore, stabilization funds, so-called rainy day funds,¹ can provide flexibility against the risk of the procyclicality of the rules (EC, 2010). Lastly, balanced budget rules in the form of the a "golden rule" can be used to boost public investments without increasing public spending², which can ensure that the rules positively contribute to the country's economic growth.

While balanced budget rules are simple and understandable and contribute significantly to fiscal sustainability, they can also be problematic. Balanced budget rules implemented at the regional or local level, for example, may have a positive impact on fiscal sustainability but a detrimental effect on macroeconomic stability (EC, 2006). Balanced budget rules implemented during recessions may have a contractionary effect, but those applied during expansions may have an expansionary impact. Balanced budget rules are also criticized for imposing additional costs on the public sector. Golden rule practices can increase public debt and burden future generations³.

Many numerical and non-numerical fiscal rules are used today to reduce the budget deficit. There are various ways of measuring the budget deficit, such as the primary deficit, operational deficit, structural deficit and so on. However, the most appropriate method for measuring the budget deficit should be selected considering the country's conditions, and

¹ Rainy day funds, which are widely used in the USA, are the allocation of budget surpluses in good times as a reserve to cover deficits in economic downturns; if such a stabilization fund supports the budget balance rules, its flexibility increases.

² Golden rules were first introduced in the US, followed by Switzerland, Germany (1969) and the UK (1997-2009) (see: Kennedy et al., 2001:8; IMF, 2022). The IMF identified nine countries with a genuine golden rule since 1985 (Brazil, Costa Rica, Germany, Japan, Kosovo, Liberia, Malaysia, Pakistan, and the United Kingdom). On the other hand, some countries have adopted variants of the golden rule or significant elements of it (e.g., Argentina, India, New Zealand, Mexico, and others). Many have used the net investment rate as the primary target (e.g., the United Kingdom and New Zealand), while Germany has employed a gross investment rule (Thygesen et al., 2020).

³ At this point, it is crucial to borrow following tax revenues.

policies should be determined by this method. Whichever budget rule is applied depending on the conditions of the countries, for the rule to be successful, it must be implemented in a multi-annual framework, the measures for deviations from the target must be determined in advance, the escape clauses must be determined, and compliance with the rules must be monitored.

2.1.1.3.1.2. Debt Rules

Debt rules can be defined as the setting of an explicit limit or target for public debt. They are the most effective rules in ensuring convergence towards a debt target or limit. However, when the debt level or ratio is below the limit, , such a rule is not binding (IMF, 2013).

Debt rules may take the form of limits on the ratio of domestic and foreign debt stock to GDP, restrictions on the nominal (or real) debt stock of local and central government, or prohibitions on the use of central bank advances by the treasury.

This rule is common in developed economies and some emerging market economies. The oldest borrowing rule limits or prohibits government borrowing from central banks. Since financing through monetary expansion has an inflationary effect, countries try to limit or prohibit it.

Debt rules are used in many countries with a view to improving and maintaining long-term fiscal sustainability. In countries with high levels of public debt, the main objective of these rules is to reduce and keep at sustainable level the total public debt ratio. Like budget rules, they have a significant impact on fiscal discipline. As in the case of budget rules, debt rules must have certain characteristics to fulfill their intended function. For example, debt rules enacted in a medium-term framework may yield more effective results in ensuring macroeconomic stability. Debt rules can also be strengthened with escape clauses and rainy-day funds, as is the case in budget rules.

Debt rules are an important tool for reducing debt ratios or debt levels in highly indebted countries. However, determining the optimal debt level is critical in debt rules. Determining the optimal debt level emerges as the main problem regarding the debt rules used to specify the public debt at a certain level or as a ratio to GDP. Nevertheless, the rule on debt stock in the Maastricht Criteria provides guidance in this regard. The EU debt rule

sets a limit of 60% of GDP for public debt under the Maastricht Criteria. Apart from the supranational rules in place, national rules are also applied and in 2020, the number of national debt rules implemented in the EU is 27 (EC, 2020).

2.1.1.3.1.3. Expenditure Rules

Expenditure rules are rules that limit total, primary, or current expenditures. These rules may be applied by setting a ceiling on expenditures in absolute terms, restricting the growth rate of governmental spending, or setting an upper limit on public expenditure as a percentage of GDP (IMF, 2013). Since expenditure rules do not impose restrictions on the revenue side, they are not directly related to the debt sustainability objective. When they are accompanied by debt rules, they can, however, offer an operational tool to start the necessary fiscal consolidation consistent with sustainability (Davoodi et al., 2022). While the basis of expenditure rules in developed countries is generally coalition agreement, in developing countries, expenditure rules are implemented through legal norms.

The expenditure are designed to ensure fiscal discipline. They are used to prevent the size of the public sector in the economy from growing. Expenditure rules may be executed together with the debt rule, the spending rule, and the revenue rule. However, they are often implemented together with budget rules. Besides, the most effective results can be achieved if rules defining expenditures as a share of GDP are supported by budget balance rules and clear regulations limiting tax expenditures (EC, 2006).

Although expenditure rules can be applied at different levels of the public sector, they usually cover central government expenditures. (Cordes et al., 2015). In 2020, 20 of the 102 fiscal rules applied in the EU are expenditure rules. However, most of these rules are applied within the scope of the general government (EC, 2020).

The interest in such rules has gradually increased because of their ability to prevent policy-induced increases in expenditures, to have a positive impact on budget savings, to help create fiscal space, to impact the budget deficit positively and to adapt to revenue losses caused by shocks. However, expenditure rules must be well-designed to be able to them reap the advantages. For instance, it is necessary, while applying the expenditure rules, to pay attention to public investment expenditures that will have a positive impact on growth. Rules imposing proportional limits on expenditure increases may ignore current investment

expenditures with a positive effect on growth. Inefficient expenditures can be limited, except for research development, education, and health expenditures.

2.1.1.3.1.4. Revenue Rules

Revenue rules are restrictions imposing upper or lower limits on revenues. These rules aim to increase revenue collection or prevent excessive tax burdens (or both) (IMF, 2013). Since such rules indirectly limit public expenditures, they cannot directly control public debts (Kumar et al., 2009). They can be applied as a numerical limit on the tax burden rates or revenues, or as a maximum tax rate for some tax types. Revenue rules are used together with the balanced budget, expenditure or debt rules. The revenue rule has been implemented in the EU countries, such as Belgium, Denmark, Finland, France, Lithuania, and the Netherlands, and some of them still apply. In addition to the revenue rules, Finland Lithuania and the Netherlands apply the expenditure rules, , the Netherlands and Finland the debt rules , and Finland, Lithuania, the Netherlands and France the budget rules . The expenditure rule in Belgium and the budget rule in Denmark were applied together with the revenue rule (EC, 2020).

Strict revenue rules on income or tax ceilings may have a negative impact on the budget deficit by negatively affecting borrowing costs unless supported by other rules. Another point is that a revenue rule applied together with an expenditure rule may be sufficient to control public debt (EC, 2006). One of the reasons why revenue rules are less preferred than other rules is that they are significantly affected by factors such as tax evasion and tax avoidance.

2.1.1.3.2. Non-Numerical Fiscal Rules

Non-numerical fiscal rules, which are included in the broad definition of fiscal rules, serve to provide the institutional infrastructure required for the rule-based fiscal policy to function properly (Kopits, 2007). These rules aiming to improve the quality of the fiscal decision-making and implementation process significantly affect the operationalization of numerical fiscal rules.

Examples of such rules include transparency, accountability, reporting and monitoring, and the creation of special conditions that ensure the formation of objective

fiscal rules (Karakurt & Akdemir, 2010). Other examples of non-numerical fiscal rules encompass multi-annual budgeting, restrictions on supplementary budgets, and the prohibition of open-ended applications in the budget process. (Drazen, 2004).

2.1.1.4. Efficiency of Fiscal Rules

Fiscal rules improve the efficiency of fiscal policy decision-making process by limiting the politicians' discretionary decisions that lead to deviations from social welfare. Although they are prominent tools in strengthening fiscal discipline and enhancing the credibility of fiscal policy, the rules will be more effective if they are supported by the following budgetary arrangements (Shick, 2003):

- i. Lengthening the time horizon from one year to the medium-term
- ii. Baseline forecasts of the government's future budget position
- iii. Estimating the impact of policy changes on future budgets
- iv. Procedures for monitoring budget performance and taking corrective action
- v. Enforcement mechanisms to prevent opportunistic politicians from breaking the rules.

Fiscal rules must have three main features to be effective, which are flexibility, simplicity and enforceability (Eyraud et al., 2018). Fiscal rules must be flexible in order to adapt to external shocks. Otherwise, the country's economic situation may deteriorate due to inflexible fiscal rules in times of crisis (Günaydın & Eser, 2009). Setting the fiscal rules as a percentage of GDP or applying them in the form of ratio of fiscal indicators to growth rates may increase their flexibility. The rules should be simple to be easily understood by both the public and the decision-makers. Finally, the implementation of the rule should be under the control of the government and sanctions should be imposed in the event of any deviation.

A fiscal rule should have a number of core elements in order to be effective. (Kopits & Symansky, 1998; Buiter, 2003; Ayuso-i-Casals et al., 2009). The elements that fiscal rules should have in order to be effective can be summarized as follows (Buiter, 2003):

- i. The rule should not be complex, and compliance should be easily verifiable.
- ii. Adherence to the rule should preserve the solvency of the government.
- iii. The rule should be applied to encompass the most comprehensive public deficit.

- iv. The rule should not prejudice the optimal size of the public sector.
- v. The rule should not promote policy instruments to operate pro-cyclically; instead, it should allow automatic fiscal stabilizers to make work freely.
- vi. Fiscal rules should also have favorable implications in the long run.
- vii. The rule should allow for heterogeneity in economic structure and initial conditions.
- viii. The rule should be meaningful at the national and supranational area.
- ix. The rule should be credible.
- x. The rule should be applied neutrally and coherently.

The effectiveness of fiscal rules is a key issue in achieving the desired objectives. In the aftermath of the global financial crisis, the macroeconomic environment characterized by new and emerging risks has revealed that the rules are inflexible to economic shocks, compliance is weak in the absence of sanctions, and they adversely affect the macroeconomic situation unless supported by escape clauses. Moreover, because pre-crisis fiscal rules restricted discretionary fiscal policies, many countries occasionally broke the rules in an effort to maintain macroeconomic stability. As a result, it was observed that fiscal rules did not function properly in times of crisis. Following the global economic crisis of 2008, the rules designed to be more flexible were updated to ensure their effectiveness. They were referred to as the second-generation fiscal rules (Eyraud et al., 2018). The effectiveness of fiscal rules is a crucial factor in achieving the intended results. The rules in place before the crisis did not deliver the expected results in terms of flexibility. Thus, flexibility was attached more importance while designing the second-generation fiscal rules. However, as fiscal rules have become more flexible, their complexity has increased. As the rules became more complex, this time, discussion of effectiveness came from a different direction. The role of fiscal councils became more important as the rules became more flexible.

2.1.2. Fiscal Agencies

OECD defines the concept of governance as follows: “*Governance is the exercise of political, economic and administrative authority necessary to manage a nation’s affairs*” (OECD, 2006). Fiscal discipline is essential for the effective functioning of public finances. One of the fiscal governance tools used to strengthen the fiscal framework and establish fiscal discipline is the fiscal agencies.

Fiscal discipline may contribute to the achievement of sound public financial management. Fiscal agencies, which are considered a necessity for macroeconomic stability, are a tool to establish fiscal discipline. In addition to the fact that the objectives of setting up fiscal agencies are the same as those of the fiscal rules, it is also argued that they may prevent opaque behaviors that fiscal rules may cause, such as accounting frauds. Efficiency debates arise because fiscal rules designed to be more flexible may lead to political manipulation given the difficulty of complying with fiscal rules in times of crisis. As a complement to fiscal rules, fiscal agencies monitor compliance with fiscal rules. In general, although the view that fiscal agencies and fiscal rules are complementary to each other prevails in the literature, some argue that independent fiscal agencies are superior to fiscal rules. In countries with a single-party government, fiscal agencies equipped with certain powers seem to be more effective than fiscal rules in ensuring fiscal discipline, in cases where governments deviate from fiscal targets (Shah, 2007). Moreover, in the absence of a fiscal rule, fiscal institutions provide assessments and recommendations on the actual state of public finances. More precisely, fiscal councils are not required to complement the rules, but they are crucial in monitoring compliance. Even without rules, they openly share their assessments, suggestions, and recommendations regarding public finance in order to contribute to fiscal discipline.

Today, fiscal rules and fiscal agencies are coming to the fore in efforts to ensure fiscal discipline and sustainability, provide macroeconomic stability and efficiency in public finances, and strengthen the fiscal framework in both developed and developing countries. Political reasons are among the sources of fiscal indiscipline, and political factors can cause time inconsistency, common pool problems, principal-agent relationship problems and externality problems. Fiscal authorities have emerged to address these problems.

Independence, composition, and influence are the most important factors in the effectiveness of fiscal agencies (Camlfors, 2011). A council should have an apparent mandate to fulfill its responsibilities independently, without any interference from the government. Furthermore, the council's budget should be formulated for long-term, and its members should be appointed on a long-term and non-renewable basis, which, in turn, leads to politically non-populist consequences and facilitates the recruitment of members from the academy. An example of an extended mandate is the Hungarian Fiscal Council, with nine-year non-renewable appointments. The composition of a fiscal authority includes certain

persons, such as academic researchers, public finance experts, analysts in the financial sector and former politicians. In terms of independence, the majority of the members of the authority should be academics. Impact, one of the most critical factors in the effectiveness of fiscal authorities, includes the reputation of the fiscal authority for excellent and impartial analysis and the ability to create a media effect that prevents the government from ignoring the authority's recommendations. The fact that the Swedish Fiscal Policy Council proposed strong incentive fiscal measures to combat the recession in 2009 while at the same time recommending fiscal restraint measures in the long term is an indication that it considers the characteristics of the situation and is open-minded. This event probably contributed to the Council's reputation for excellent and unbiased analysis (Camlfors, 2011).

In practice, fiscal agencies improve the quality of fiscal decisions when they are independent of political interference and generate external influence. They make positive assessments using up-to-date data and provide normative analyses with a comparative perspective to achieve long-term goals. However, many factors influence their effectiveness. These include well-defined remits, consideration of their assessments by the state, involvement in the budget process, the willingness of the government to involve the fiscal authority in its work, and the legal strengthening of the position of authority in conflict situations (Debrun et al., 2009).

Fiscal councils and independent fiscal institutions are the two categories used in the literature to describe fiscal authorities. Independent fiscal institutions can determine fiscal policies independently of the government. There is not a single country in the world today that has an independent fiscal institution. On the contrary, many countries have established fiscal councils with no authority to determine fiscal policies. Fiscal councils inform policymakers and voters with their forecasts and assessments and make recommendations. The following section provides detailed information about fiscal councils and independent fiscal institutions.

2.1.2.1. Fiscal Councils

A fiscal council is a permanent organization vested with a legislative or executive authority that impartially assesses the government's budgetary policy. Tasked with monitoring public finances, these councils aim to enhance the credibility of fiscal policy

decisions/implementations. They develop and assess macroeconomic objectives for long-term fiscal sustainability and short- and medium-term macroeconomic stability (IMF, 2021).

There are three different types of fiscal councils. The first type of council objectively assesses macroeconomic and fiscal changes, long-term sustainability challenges and the costs of budgetary initiatives. The second type of fiscal council provides independent forecasts on macroeconomic indicators and budget variables. The third type of fiscal council is authorized to make normative assessments apart from its other functions (Debrun et al., 2009).

The success of fiscal councils depends on their capacity to deal with the asymmetric information problem between politicians and voters (Debrun, 2011). Fiscal councils monitor and assess whether policymakers fulfill their commitments regarding fiscal indicators. The council's success in enforcing fiscal discipline is related to the extent to which it can cause controversy by sharing these assessments with the public. To be clear, fiscal councils enlighten the public by producing reports that describe information that may be hidden or misinterpreted in official documents. This way, they ensure that politicians favor a budget deficit close to the social optimum by avoiding asymmetric information. (Beetsma & Debrun, 2016).

2.1.2.2. Independent Fiscal Institutions (Authorities)

Independent fiscal institutions are budget institutions that have the authority to comprehensively evaluate the budget process and the benefits and costs of public policies with the aim of solving the common pool problem in public finance. They are publicly funded but operate independently of the government to ensure fiscal discipline (Dziemianowich, 2014).

The objectives of independent fiscal institutions are to mitigate the negative budgetary impact of politicians' decisions, to improve the quality of fiscal decisions, to estimate the costs of the proposed policy changes, to compare alternative public policies and make recommendations based on them, to generate objective forecasts and ensure their use in the budget process, and to improve the effectiveness of the fiscal rules by supporting them. Independent financial institutions should have certain characteristics to achieve their objectives. These include having independent and technically competent staff and good

communication networks with the public to ensure transparency. In addition, an independent fiscal institution should not be able to benefit from extra-budgetary resources and should be supported by the government and structural reforms when necessary.

To improve fiscal discipline, there are two main categories of independent fiscal institutions to which some aspects of the budgetary process could be delegated: Independent fiscal institutions could be commissioned to set annual goals for the budget balance or to veto proposals that conflict with a specific fiscal rule. There is no example of an independent fiscal institution because policymakers are reluctant to delegate any critical component of their policy authority (Debrun et al., 2009).

2.1.3. Medium-term Budgetary Framework

Budgetary arrangements known as medium-term budgetary frameworks (MTBF) extend the fiscal planning horizon beyond the annual budget calendar. A well-designed MTBF covers the future costs of new policy changes and the impact of past budgetary commitments (EC, 2010: 106). Effective budget management requires medium-term planning, which extends the fiscal policy-making horizon beyond the annual budget cycle. The benefits of incorporating MTBFs in the budget process can be listed as follows (EC, 2007):

- i. Increasing the transparency of medium-term budget targets
- ii. Better time consistency in the execution of fiscal policy
- iii. Providing economic agents with information on trends in public finances
- iv. Assisting in reducing the deficit bias
- v. Contributing to the solution of the common pool problem
- vi. Increasing the quality and stability of the decision-making process
- vii. Developing structural reforms through better planning.

Multi-annual budgeting, i.e., budgeting expenditures and revenues for the next year and the years to come, is formulated on the basis of the medium-term budgetary framework. The multi-annual budgeting process allows economic decision-makers to be informed of their medium-term approaches to economic and financial targets and to make plans (Tüngen & Özen, 2004).

A medium-term fiscal perspective is required for a sound fiscal rule. The EU's rules-based fiscal framework relies heavily on member states' adherence to and ability to develop medium-term fiscal plans. Since 1998, EU member states submit annual reports on their medium-term fiscal plans as part of their Stabilization and Convergence Programs under Article 99 of the Maastricht Treaty (Von Hagen, 2008). The SGP accepts the same budget and debt rule as set out in the Maastricht criteria. In addition to these rules, it recommends a medium-term budget position that aims at a budget balance or surplus (Schuknecht, 2004). The increasing importance of considering public finances from a medium-term perspective and the absence of such practices in the EU countries led to the inclusion of relevant provisions in the SGP (Sherwood, 2015). The main objective of the preventive arm of the SGP, which consists of a preventive arm and a corrective arm, is to ensure fiscal sustainability by strengthening the surveillance mechanism of member states. In this context, country-specific medium-term budget targets form the basis of preventive rules. EU countries have adopted MTBFs for their budgetary processes, especially for fiscal planning because a one-year perspective provides a weak basis for successful policymaking and management in fiscal policy (Szymanska, 2018). Moreover, structural deficit targets in the EU are limited separately for each country within the scope of medium-term budget targets.

2.2. Fiscal Performance

Fiscal performance is defined as the budget discipline that requires governments to maintain their fiscal positions that support macroeconomic stability and sustainable growth (Coletta et al., 2015). It is measured by using summary indicators of fiscal policy, such as public revenues, budget balance, public debt, and public expenditures (Schick, 1998).

2.2.1. Fiscal Performance Indicators

As indicated above fiscal rules can take in the form of numerical ceilings or targets on some fiscal indicators that can measure fiscal performance (Kopits & Symansky, 1998; Aktan, 2010). These restrictions may be in the form of a numerical upper limit on summary indicators of fiscal performance or numerical limitations on the ratio of fiscal performance indicators to national income (Von Hagen, 2005; Schick, 2010). Fiscal performance indicators serve to set annual or multiannual fiscal targets for governments and assess governments' fiscal performance by measuring compliance with them. These indicators are

classified under four different sub-headings: public budget, public debt, public expenditures, and others.

2.2.1.1. Budget Balance

The budget balance is defined as the difference between budget revenues and budget expenditures. Budget imbalances can be in the form of a budget surplus or a budget deficit. A budget deficit or surplus is an indicator of fiscal discipline and fiscal performance. However, at this point, the definition of the budget deficit and what it covers is crucial (Tüleykan, 2016). Traditional budget deficit, structural deficit, and primary deficit are commonly used as indicators of fiscal discipline and fiscal performance.

The conventional deficit, the classic definition of fiscal deficit, measures the difference between total government revenues and expenditures, excluding changes in debt. When this deficit is measured on a cash basis, the public sector deficit converts into a net borrowing requirement (Egeli, 2002). It is criticized because it includes traditional open interest payments, is significantly affected by inflation, and does not reflect only the central government's budget deficit. Traditional budget deficits are insufficient to evaluate the fiscal policy trend within the scope of the country's medium and long-term goals (Rutayisire, 1987). On the other hand, the public sector borrowing requirement represents the difference between the public's total cash expenditures and its total cash revenues (Weiss, 1995). The public sector borrowing requirement cannot provide a reliable assessment of the fiscal year's performance (Şen et al., 2007).

To determine the extent to which the governments' fiscal policies are contractionary or expansionary, the full employment level of the economy should be used as the basis for measuring the budget deficit. The structural deficit is the type of deficit that occurs when the economy is at full employment. Structural deficit, also called cyclically adjusted or full-employment budget deficit.

Potential rather than actual revenue is used when measuring structural deficit. However, the difficulty in calculating the potential revenue limits the use of the structural deficit. In addition, when measuring the structural deficit, it is unrealistic to assume that unemployment will be at minimum level at full employment.

Another technique used to measure budget deficits is calculating the primary budget deficit. The primary budget deficit is often used to assess government fiscal performance and fiscal discipline based on expenditures and revenues. Since the primary budget balance does not include interest payments, it contributes to sustainability and indicates the part of the budget that can be controlled (Önder & Kirmanoğlu, 1996). Primary budget balance is commonly used, especially in countries with large debt stock (Blejer & Cheasty, 1992: 41). In countries where the ratio of public debt stocks to GDP is high, sustainability of debts is significant, in which case primary budget balance is critical (Şen et al., 2007). The main economic and financial reason for having a primary surplus in countries with a high debt stock is to reduce the pressure on borrowing and to enable less government borrowing. In this regard, primary budget balance is seen as an indicator of the government's fiscal stance and its ability to generate stable revenues and realize its expenditure plans (Emil & Yılmaz, 2003). The primary budget balance is also essential for EU countries having to comply with the Maastricht criterion which states that the ratio of public debt stock to GDP cannot exceed 60%. Moreover, the IMF attaches importance to primary budget balance as a proxy for fiscal performance. It takes such balance into account in its stand-by agreements with member countries. The primary budget balance is used as an analytical tool for setting the targets for public institutions and measuring their annual performance. The primary budget balance is also crucial in terms of revealing the level of macroeconomic responsibility of governments to international markets and institutions (Emil & Yılmaz, 2003).

2.2.1.2. Government Debt

The total consolidated assets of the general government, including currency and deposits, securities apart from shares, and loans made over time, can be used to calculate the general government debt as defined by the EU. According to Derya & Yavuz (2016), this calculation results from implementing Maastricht criteria in fiscal management. The EU-defined debt stock can be a proxy for debt sustainability because it provides a detailed and widely accepted framework. It can also define the obligations of EU countries and other countries.

In the literature, the conventional balance, the primary budget balance, and the structural balance are generally used as measures of fiscal performance. The debt variable is added to the model as an explanatory variable. However, a review of the relevant literature

shows that Lagona & Padovano (2007) use the ratio of general government debt stock to GDP as one of the fiscal performance indicators.

In case of a low level of domestic savings and tax revenues, external borrowing, one of the financing methods of budget deficits, becomes an essential source of financing. Foreign debt refers to the sum of debts owed to foreign creditors. An increase in the external debt burden may be an indicator of failed financial management, as well as raising doubts about the ability to finance the debt (IMF, 2002). The continuous increase in the external debt to GDP ratio may negatively affect fiscal performance by increasing investors' risk perception. In addition, it is expected to have a preventing effect on fiscal sustainability. Therefore, external debt can be used either as a determinant of fiscal performance or as a function of fiscal sustainability, which enables the government to meet its obligations in the short and medium term.

2.2.1.3. Others

Public expenditures are also one of the summary indicators of fiscal performance on which numerical limitations are placed. In the relevant literature, the ratio of public expenditures to GDP is also used to indicate fiscal performance, although not very widely (Ayuso-i-Casals et al., 2007; Lagona & Padovano, 2007; Nerlich & Reuter, 2013; Martins & Correia, 2020).

Restraining public revenues by setting an upper and lower limit can also be used as summary fiscal performance indicators. In the relevant literature, Martins & Correia (2020) use countercyclical revenues as one of the fiscal performance indicators.

3. FISCAL RULES AND FISCAL COUNCILS IN THE EU COUNTRIES

3.1. Legislative and Institutional Framework for Supranational Fiscal Rules and Fiscal Councils in the EU

Fiscal rules can be applied at different levels, including local, regional, national, and supranational domains. Initially, fiscal rules in the European Union (EU) began to be implemented at the supranational level. Fiscal rules in Europe began to be implemented at supranational level under MT of 1992. In addition to the fiscal rules established institutionally by the EU, individual countries within the Union also implemented their own distinctive fiscal rules. The objectives of the common fiscal rules required by being a member of the Union are to ensure the coordination of fiscal policies among member countries to help implement time-consistent fiscal policies among member countries, to prevent possible negative externalities, and to ensure fiscal discipline for each country. The objectives of the fiscal rules implemented by the member countries can also be listed as ensuring economic growth, stability, fiscal restraint, and sustainability in their own countries.

To ensure fiscal discipline in the EU, the implementation of fiscal rules started with the MA and then continued with the SGP. The sustainability of public finances is a prerequisite for the stability of a single currency. For this reason, fiscal rules were adopted in the EU before the transition to monetary union. The MA (Article 104) and the annexed Protocol on the excessive deficit procedure, the SGP, the Council Regulations and related guidelines are the main texts governing the common fiscal rules of the EU Member States.

3.1.1. Maastricht Treaty

The efforts of the European Communities to establish a monetary union took about thirty years. The European Community was renamed as the EU with the MT signed on 7 February 1992 and entered into force on 1 November 1993. Ensuring fiscal discipline in the EU Member States or candidate countries is considered a prerequisite for the successful progress of the EU towards economic and monetary union. The criteria introduced by the MT are of great importance for both Member States and candidate countries. The MT

established the "three pillars" of the EU and introduced a new legal structure (Eraslan, 2011). The main innovations provided by the MT are economic and monetary union, common foreign and security policy, and cooperation in justice and home affairs.

The most notable aspect of the MT was the changes it brought to the economy. The agreement decided to switch to a single currency on 1 January 1999 and set out how the system would work. The Treaty also regulated the European Central Bank Law. Conditions on borrowing and budget deficits were set to ensure fiscal discipline, while criteria on the interest rate, inflation rate and exchange rate were set to ensure monetary discipline. The MA laid down several mandatory conditions for the EU Member States to join the Economic and Monetary Union (Eichengreen, 1992; Maastricht Treaty, 1992):

- i. Each member's average annual inflation rate may exceed the average annual inflation rate of the three member states, with the lowest price increase not exceeding 1.5 points.
- ii. The ratio of Member States' planned or actual public deficits to their gross domestic product cannot exceed 3 %.
- iii. The ratio of Member States' planned or actual public debt stocks to their gross domestic product cannot exceed 60 %.
- iv. Each Member State may exceed the average nominal long-term interest rate of the three best performing Member States in terms of price stability by two percentage points.
- v. The national currencies of the Member States must remain within the "normal" fluctuation margins allowed by the European Exchange Rate Mechanism.

Implementing the monetary policy in harmony with the fiscal policy is necessary to achieve the desired objectives through stable implementation of the monetary policy. Since the monetary policy in the EU is under the control of a supranational authority, the problem of coordination between monetary and fiscal policies is quite significant in the EU (Akdemir et al., 2014). The criteria regarding the budget deficit and borrowing, included in the Treaty as fiscal policy convergence criteria, both have a direct and indirect impact on the exchange rate, inflation, and interest rate requirements as monetary policy convergence criteria. Governments generally intend to avoid raising tax rates or cutting public spending to finance budget deficits. For this reason, various methods are used to finance the deficit, such as monetization and borrowing. When domestic borrowing is used to finance budget deficits,

interest rates rise, which in turn leads to the crowding-out effect that has an adverse impact on inflation, economic growth, investments, output level and income distribution. While the aim of the monetary policy convergence criteria in the MT is to ensure monetary and exchange rate stability, the purpose of the fiscal policy convergence criteria is to reduce the adverse effects of the inflation pressure resulting from excessive budget deficits on the stability of the Eurozone (Afxentiou, 2000). The European Monetary Union's approach worries the European Commission about appropriate fiscal policy. A major concern is that the systematic lack of fiscal stability of some European Monetary Union members may lead to persistent inflation by creating political pressure through monetary expansions (Von Hagen, 1992).

An increase in the money supply because of monetization can cause inflation in the short and long run, but the results are more definitive in the long run. The money-making process that generates and increases inflation can be summarized as follows: As a result of monetization, the money supply in the market increases, which means abundant money in the market. At the same time, interest rates fall as the money supply increases. In other words, the interest paid on savings decreases. Consumption expenditures and aggregate demand increase because of rising money supply and falling interest rates. An increase in aggregate demand causes and increases inflation.

One of the methods used to finance budget deficits is domestic borrowing. Domestic borrowing increases the supply of bonds in the market. When the bond supply increases, the price of the bond falls and the bond's interest rate rises. Moreover, confidence declines if domestic borrowing is used to finance persistent budget deficits. As a result of the fall in confidence, the demand for bonds decreases, and interest rates increase. The crowding-out effect is defined as the increase in interest rates that excludes private sector investment and keeps the output level lower level than it should be. In addition to crowding-out effect, rising interest rates have other adverse effects. Rising interest rates will increase costs, as they are a cost element. As a result of the increase in input costs, production costs and prices will rise. In this case, the problem of cost inflation arises in the long run. If the rise in interest rates is high and brings investors to a point where they will not invest, there will be a recession in the economy. As a result, even the problem of stagflation, where stagnation and inflation occur simultaneously, may also arise. Given the results of these two methods used in financing budget deficits, the sustainability of budget deficits is crucial. The fiscal policy

convergence criteria are included in the Treaty for governments to control their budget deficits and debt stocks.

These criteria set for the budget deficit and public debt are referred to as the budget and debt rules. The corrective, punitive mechanism of the fiscal framework of the EU is the excessive deficit procedure (Tóth & Berta, 2017). The excessive deficit procedure, on the other hand, is a rule-based process that follows the fiscal policies of the Member States and aims to correct the errors arising from the guidelines. The provisions regarding the excessive deficit procedure are as follows (Maastricht Treaty, 1992):

“1. Member States shall avoid excessive government deficits.

2. The Commission shall monitor the development of the budgetary situation and of the stock of government debt in the Member States with a view to identifying gross errors. It shall examine compliance with budgetary discipline based on the following two criteria:

(a) whether the ratio of the planned or actual government deficit to gross domestic product exceeds a reference value, unless

— either the ratio has declined substantially and continuously and reached a level that comes close to the reference value;

— or the excess over the reference value is only exceptional and temporary and the ratio remains close to the reference value;

(b) whether the ratio of government debt to gross domestic product exceeds a reference value unless the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace. The reference values are specified in the Protocol on the excessive deficit procedure annexed to this Treaty.

3. If a Member State does not fulfill the requirements under one or both criteria, the Commission shall prepare a report. The report of the Commission shall also consider whether the government deficit exceeds government investment expenditure and consider all other relevant factors, including the medium-term economic and budgetary position of the Member State. The Commission may also prepare a report if, notwithstanding the fulfillment of the requirements under the criteria, it is of the opinion that there is a risk of an excessive deficit in a Member State.

4. *The Council shall, acting by a qualified majority on a recommendation from the Commission, and having considered any observations which the Member State concerned may wish to make, decide after an overall assessment whether an excessive deficit exists.*

5. *Where the existence of an excessive deficit is decided, the Council shall make recommendations to the Member State concerned with a view to bringing that situation to an end within a given period. These recommendations shall not be made public.*

6. *Where it establishes that there has been no effective action in response to its recommendations within the period laid down, the Council may make its recommendations public.*

7. *If a Member State fails to comply with a decision the Council may decide to apply or intensify one or more of the following measures:*

— *to require the Member State concerned to publish additional information, to be specified by the Council, before issuing bonds and securities.*

— *to invite the European Investment Bank to reconsider its lending policy towards the Member State concerned.*

— *to require the Member State concerned to make a non-interest-bearing deposit of an appropriate size with the Community until the excessive deficit has, in the view of the Council, been corrected.*

8. *The Council shall abrogate some or all of its decisions to the extent that the excessive deficit in the Member State concerned has, in the view of the Council, been corrected. If the Council has previously made public recommendations, it shall, as soon as the decision has been abrogated, make a public statement that an excessive deficit in the Member State concerned no longer exists.*

9. *When taking the decisions, the Council shall act on a recommendation from the Commission by a majority of two-thirds of the votes of its members weighted in accordance with Article 148(2), excluding the votes of the representative of the Member State concerned. (Maastricht Treaty, 1992).”*

The Excessive Deficit Procedure have regularly addressed the fiscal policies of the Member States and have been complemented by the sanctions to be applied in case of excessive deficit (Annett, 2006). Unfortunately, the excessive deficit procedure, designed to

create strong public finances in Member Countries and thus to maintain the healthy existence of the European Monetary Union, could not be implemented in a disciplined manner as planned. Although most states have stated that they will meet these criteria to switch to the Euro, some countries are unable to do so (Ngai, 2012).

3.1.2. The Establishment of the Economic and Monetary Union

The first stage of establishing the monetary union, using a single currency among the Member States, was aimed at coordinating the economic policies of the Member States. The multilateral surveillance mechanism is based on budget discipline. Thanks to this mechanism, the Council may intervene in the event of deterioration or risks in the economy of any member state.

The establishment of the monetary union took place in three stages. The first stage, which began on 1 July 1990, includes complete freedom for capital transactions, enhanced cooperation between central banks and improved economic convergence (The European Monetary Institute, 1997). An innovation that highlights the importance of price stability in the first stage of the establishment of the monetary union is that the Committee of Presidents started to give opinions to the central banks of the Member States and the Council of Ministers regarding the monetary and exchange rate policies (Eraslan, 2011).

Following the entry into force of the MT on 1 November 1993, the transition to the second stage of Economic and Monetary Union took place at the beginning of 1994. According to the agreement, on 1 January 1999, the countries that meet the criteria will switch to a single currency. At that stage, efforts have been made to complete the legal and institutional arrangements necessary for the transition to a monetary union. In this context, the European Monetary Institute was established on 1 January 1994. The duties of this institute are to strengthen the coordination between the monetary and exchange rate policies of the Member States, to confirm the European Central Bank and to complete the technical preparations in this transition period.

At the end of 1995, during the transition period, vital decisions were taken at the Madrid European Council. The decisions taken at the Madrid Council, which is seen as the final stage in the establishment of the monetary union, can be listed as follows (Simon, 1997):

- i. On 1 January 1999, the euro single currency will be introduced in the countries that meet the criteria considering compliance with the Maastricht criteria.
- ii. From 1999 to the end of 2001, the Euro was used as fiat money, and from the beginning of 2002, as paper money.
- iii. The European Central Bank will be established instead of the European Monetary Institute.

At the European Council in 1998, it was decided that eleven countries had met the necessary conditions for transition to the euro. At the same time, the European Central Bank was established in 1998 in accordance with the decision taken at the Council. On 1 January 1999, the euro was adopted as the single currency in 11 countries which were decided to meet the necessary conditions. The responsibility for the standard monetary policy of the relevant countries was also given to the European Central Bank (Eraslan, 2011). On 1 January 2001, Greece switched to the euro. It was physically introduced on 1 January 2002, after being used as a deposit currency for two years. Following the physical launch of the euro, the countries switched to the euro single currency, one by one: Slovenia in 2007, Malta, Cyprus in 2008, Slovakia in 2009, Estonia in 2011, Latvia in 2012 and Lithuania in 2012.

The transition to monetary union in the EU countries required significant changes in both monetary and fiscal policies. While the European Central Bank was managing the monetary policy, more authority was needed to manage the fiscal policy. The lack of such authority has led to coordination problems. Since the independent implementation of the Member States' fiscal policies leads to more than one fiscal authority, it becomes difficult to achieve common goals (Beetsma & Bovenberg, 1999). The economic policy implemented in the EMU has been shaped within the framework of the monetary policy which is implemented by a joint central monetary authority and the fiscal policy which is implemented by the Member States without a central authority (Šehović, 2015). The most important tool of the EMU's economic policy is fiscal policy, which consists of the identification of excessive deficits and the determination of preventive and corrective measures in case of excessive deficits. In this context, supranational fiscal rules in the MT and the SGP form the basis of fiscal policy (Šehović, 2015).

3.1.3. Stability and Growth Pact

In the transition period of the establishment of the Economic and Monetary Union, the basic principles of the SGP were laid down at the Dublin Council held in 1996 after the Madrid Council. The SGP was adopted by the Amsterdam Treaty of 1997. It is a pact that helps the shape the fiscal policy framework to contribute to the establishment of economic and monetary union. The SGP accepts the fiscal targets in the same way as the Maastricht criteria. Besides, it recommends a medium-term budget position aiming at achieving a budget balance or surplus (Schuknecht, 2004). Ensuring price stability in the EU, making long-term sustainable growth rates permanent, preventing excessive budget deficits by pursuing a balanced public finance policy in the medium term, and ensuring budgetary discipline are among the objectives of the SGP, which offers a rule-based framework (Tóth & Berta, 2017). There are two different strategies for the procedure to be followed in the event of excessive budget deficit in the member countries of the Pact. The first strategy covers an early warning system to prevent member countries' excessive budget deficit. In this system, to be designed to ensure that the government stays within the budget deficit criterion, which is set as 3%, countries in the Euro area must submit their stabilization programs to EU Council. Countries outside the Euro area, on the other hand, must submit their convergence programs to the EU Council. The Council will promptly alert Member States to take the necessary measures. According to the second strategy, countries with excessive deficits will be subject to fiscal sanctions if they do not bring their deficits below the 3% limit within the given period. In addition, member states will report their budget deficits and debt stocks to the European Commission twice a year (Buti et al., 2003).

The EU fiscal framework aims to homogenize the fiscal discipline standards under a single currency. The MT and the SGP emphasize the importance of rules and institutions for fiscal discipline (Debrun et al., 2008). There are two procedures to ensure fiscal discipline in the EMU. The first is the Excessive Deficit Procedure, which was introduced by the MT, and the second is the SGP. While the Maastricht criteria are considered a prerequisite for EU countries to join the economic and monetary union, the SGP aims at a sustainable fiscal discipline by controlling the Member States' budget deficits and subjecting them to fiscal sanctions.

3.1.3.1. The 2005 Reform of Stability and Growth Pact

The SGP consists of two parts: preventive rules and corrective rules. The reasons why the SGP is not thought to have the expected impact on the fiscal discipline in the EU are that it discourages public investment, the fiscal rules are strict, it does not consider structural reforms, and it reduces budget flexibility. In the Pact, which has undergone many reforms since its entry into force in 1997, the first phase of resilience and cyclical adjustment took place in 2005, when the Euro area was in good shape. Among the aims of the 2005 reform are to take better account of the economic conditions and specific characteristics of the Member Countries and to move away from one-size-fits-all approach –regarding the rules– to one that is differentiated according to the national characteristics. However, the framework was significantly tightened during the crisis, through the six-pack reform in 2011, the fiscal compacts in 2012 and the two-pack reform in 2013. In 2015, as the economy started to recover, more flexibility was introduced, which led to the loosening of fiscal targets, and escape clauses were explained in detail. The main changes made on 21 March 2005 can be listed as follows (Chang, 2006; Schuknecht, 2004):

- i. Considering the economic conditions of the Member States (level of public investment, potential growth rates, public debt burden), a budget balance must be achieved in the medium term.
- ii. Member States are required to review their medium-term targets every four years to adapt to changes in economic conditions.
- iii. Member countries must reduce their structural budget deficits by five per thousand each year, considering their potential growth rates. In countries where growth is higher than the potential growth rate, this rate will be higher, and in other cases, it will be the opposite.

In 2005, some changes were also made in the implementation for countries exceeding the budget deficit criterion which is 3%. Under the escape clause introduced in the EU with the 2005 reform, the excessive deficit procedure is not applied to a country temporarily exceeding the 3% limit and is close to the limit (Schaechter et al., 2012). Countries that do not meet the criteria are given the opportunity to prepare a defense including the justification for exceeding the limit. The European Council evaluates the defense and decide whether to impose fiscal sanctions. For countries exceeding the 3% limit, the time given for meeting the criteria has been increased from 1 year to 2 years. It has been specified that, in

exceptional cases, the period may be longer than two years. This flexibility applies when unexpected economic difficulties adversely affect the Member States' public finances.

The inability of the 2005 reform of the SGP to ensure fiscal discipline was understood after the 2008 crisis. Although the need for fiscal rules in the EU is greater compared to the past, it is believed that this will only be possible with a comprehensive revision of the SGP. A simple, predictable, and transparent framework is required to deepen the European Monetary Union. Since its adoption, the Pact has been criticized and has undergone many reforms. As a result of these reforms, complexity has increased, and conflicting goals have emerged. The current problems with the fiscal rules implemented under the SGP call for a reform of the EU fiscal framework. The existing problems can be listed as follows (Beetsma et al., 2018; EC, 2018a):

- i. Rules are complex, and their effectiveness is controversial,
- ii. Decreased transparency and impartiality, and lack of predictability,
- iii. A less clear distinction between European Commission and European Council,
- iv. Sanctions are ineffective for enforcing rules, and there is no system in place to correction mechanism,
- v. The rules have a complex system of flexible regulations.

The SGP has a growing system of warnings and sanctions for non-compliance in, although the latter has never been used (EC, 2018b). A general overhaul of the SGP is needed to simplify the framework and make the rules more effective. The new reform proposal accepts the agreement but includes changes in secondary legislation, which also requires significant changes to the intergovernmental Fiscal Contract. The main features of the reform proposal can be listed as follows (EC, 2018a):

- i. A medium-term ceiling of 60% GDP.
- ii. For Member States with a debt ratio over 60% of GDP, an operational target developed as a ceiling on the growth rate of primary expenditure, net of discretionary revenue measures, to verify the required debt reduction over the medium term.
- iii. An improved system of sanctions.
- iv. Escape clauses for exceptional situations should be used sparingly and on the basis of sound economic judgment.

- v. A simplified, one-step surveillance cycle. Adjustments and corrections to fiscal requirements would not be made every year in response to minor deviations, but somewhat over the medium term or in the event of significant variations from the ultimate objective,

Even if a more straightforward framework is proposed and implemented to ensure effectiveness, more is needed as one of the main problems is the blurring of the distinction between those who oversee the implementation of the rules and the final decision of policymakers. The role of assessors should be separated from that of decision-makers to increase trust between member countries and the Commission and Council. The governance SGP needs to be adapted by assigning the assessment task to an independent body or by giving the assessor the necessary independence (EC, 2018a). The SGP has failed to ensure fiscal discipline. One of the reasons for these negative results is the unwillingness to apply the fiscal rules stipulated by the Pact and the weak pressure to implement them. The procedures for dealing with non-compliance needed more automation, leaving too much room for discretion. No sanctions were imposed until the six-pack rules (Marzinotto & Sapir, 2012).

3.1.3.2. The Fiscal Position of the EU

During the implementation of SGP in 1997 and the reform process in 2005, some countries failed to comply with the budget and debt rules. Table 3.1 shows the ratios of public debt to GDP of the EU countries between 1996 and 2007. Between these years, the Czech Republic, Estonia, Finland, Croatia, Lithuania, Luxemburg, Latvia, Poland, Romania, Slovenia, Slovakia and England met the criteria specified by the debt rule. Spain's public debt to GDP ratio decreased continuously from 1996 to 2007 and fulfilled the criterion standard between 2000 and 2007. Austria, Belgium, Greece, and Italy could not meet the 60% criterion in any year. Even though Belgium gradually reduced the ratio of public debt to GDP from 1996 to 2007, it is still relatively high at 87.3% in 2007. In Portugal, this ratio has risen to over 60% since 2003.

Table 3.1. General Government Debt Stock (1996-2007), % of GDP

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
AU	67.81	63.06	68.82	61.10	65.74	66.35	66.98	64.90	64.85	68.32	67.00	64.74
BE	129.00	124.27	119.19	115.36	109.59	108.22	105.44	101.66	97.17	95.14	91.49	87.32
BG	n/a	96.23	67.45	75.35	72.71	67.60	53.74	46.60	38.57	30.09	28.69	24.18
CY	47.09	50.96	54.66	54.84	55.74	57.32	60.52	63.84	64.77	63.44	59.26	54.03
CZ	11.58	12.19	13.96	15.18	16.99	22.71	25.83	28.17	28.38	27.71	27.56	27.33
GE	57.79	58.87	59.53	60.14	59.07	57.94	59.70	63.31	64.99	67.35	66.70	63.99
DE	68.26	64.28	60.28	56.76	52.35	48.51	49.08	46.15	44.16	37.41	31.55	27.35
ES	7.31	6.04	5.41	5.93	5.11	4.77	5.66	5.60	5.11	4.70	4.63	3.77
GR	101.34	99.45	97.42	98.91	104.93	107.08	104.86	101.46	102.87	107.39	103.57	103.10
SP	65.69	64.41	62.47	60.76	57.82	54.05	51.25	47.71	45.37	42.43	39.06	35.76
FI	55.31	52.22	46.83	44.01	42.43	40.89	40.12	42.69	42.57	39.86	38.00	33.90
FR	60.00	61.43	61.35	60.50	58.88	58.34	60.26	64.42	65.94	67.38	64.61	64.54
CR	25.10	22.63	21.97	28.26	33.37	34.76	36.80	38.18	40.31	41.26	38.75	37.35
HU	71.41	62.04	60.08	60.02	55.23	51.70	54.89	57.36	58.24	60.12	64.14	65.16
IR	69.87	61.61	51.45	46.63	36.13	33.23	30.54	29.92	28.19	26.08	23.64	23.92
IT	119.11	116.78	114.13	113.29	109.03	108.89	106.36	105.49	105.10	106.56	106.74	103.89
LT	13.91	15.37	16.54	22.70	23.49	22.89	22.14	20.37	18.67	17.63	17.24	15.87
LU	10.13	10.02	9.49	8.37	7.46	7.67	7.43	7.45	7.91	8.02	8.30	8.20
LA	8.76	7.29	9.58	14.45	14.77	17.52	14.93	14.37	13.82	11.17	9.17	7.24
MA	42.72	50.46	55.08	65.90	60.66	64.89	63.15	68.63	71.28	69.90	64.28	61.91
NE	42.72	50.46	55.08	65.90	60.66	64.89	63.15	68.63	71.28	69.90	64.28	61.91
PO	43.39	42.93	38.89	39.57	36.58	37.35	41.78	46.63	45.11	46.61	47.25	44.50
PR	59.51	55.20	51.84	51.06	50.34	53.44	56.21	58.69	62.04	67.43	69.17	72.73
RO	10.99	15.03	16.47	21.72	22.49	25.87	24.82	22.11	18.95	15.91	12.42	11.95
SW	68.68	67.43	65.13	60.07	50.23	51.76	49.77	49.27	48.48	48.77	43.67	38.98
SL	21.56	22.06	22.73	23.71	25.92	26.06	27.36	26.78	26.90	26.40	26.06	22.85
SK	30.64	32.99	33.92	47.05	50.45	51.11	45.30	43.24	41.71	34.73	31.43	30.35
UK	44.12	43.25	40.97	39.50	36.79	34.02	34.18	35.43	38.38	39.58	40.46	41.52

Source: IMF, 2022.

As seen from Table 3.2, even before the 2008 global economic crisis in the EU, while some countries failed to meet the debt rule criterion, the crisis led to a serious increase in government debt. In Austria, Belgium, Greece, and Italy, the ratio of public debt to GDP grew and reached gigantic proportions in 2008 and thereafter. Especially the ratios are exceptionally high in Italy and Greece. Also, Portugal, which has yet to be able to comply with the debt rule since 2004, has also had a relatively high public debt ratio since 2008. Ireland, which abided by the debt rule every year from 1997 to 2009, exceeded the debt rule

criterion by 61.7% in 2009. Ireland, whose public debt ratio has been gradually increasing because of the European Debt Crisis, could not comply with the debt rule until 2019. Again, with the impact of the European Debt Crisis, Spain had relatively high deviations from the debt rule from 2010 to 2019.

Table 3.2. General Government Debt Stock (2008-2019), % of GDP

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AU	68.4	79.6	82.4	82.2	81.7	81.0	83.8	84.4	82.6	78.4	74.0	70.4
BE	93.2	100.2	100.3	103.5	104.8	105.5	107.0	105.2	104.9	101.8	99.9	98.8
BG	20.9	23.2	23.7	22.8	24.1	24.8	35.1	32.6	36.9	33.0	29.7	27.8
CY	45.6	54.3	56.4	65.9	80.3	104.0	109.2	107.5	103.4	93.9	100.6	95.5
CZ	28.1	33.4	37.1	39.6	44.2	44.4	41.9	39.7	36.6	34.2	32.1	30.3
GE	65.5	73.0	82.4	79.8	81.1	78.7	75.7	72.2	69.2	65.0	61.6	59.5
DE	33.3	40.2	42.6	46.1	44.9	44.1	44.3	39.8	37.2	35.8	34.2	29.4
ES	4.5	7.2	6.6	6.1	9.8	10.2	10.5	9.8	9.1	9.1	8.3	8.4
GR	109.4	126.7	146.3	180.6	159.6	178.0	180.2	177.8	181.1	179.3	184.8	180.9
SP	39.7	53.3	60.5	69.9	86.3	95.8	100.7	99.3	99.2	98.6	97.6	95.5
FI	32.6	41.5	46.9	48.3	53.6	56.2	59.8	63.6	63.2	61.3	59.6	59.0
FR	68.8	83.0	85.3	87.8	90.6	93.4	94.9	95.6	98.0	98.3	98.1	98.1
CR	39.3	48.7	57.8	64.4	70.1	81.2	84.7	84.3	80.8	77.8	74.7	73.2
HU	71.2	77.5	80.1	80.2	77.8	76.2	75.4	74.2	73.4	71.0	68.4	64.7
IR	42.4	61.7	86.0	111.1	120.0	120.1	104.3	76.7	74.2	67.4	62.9	57.3
IT	106.2	116.6	119.2	119.7	126.5	132.5	135.4	135.3	134.8	134.1	134.8	134.8
LT	14.6	28.0	36.3	37.2	39.8	38.7	40.6	42.7	39.9	39.3	34.1	37.7
LU	15.4	16.2	20.2	19.0	22.0	23.7	22.7	22.0	20.1	22.4	21.0	22.1
LA	16.2	32.6	40.3	37.5	36.7	35.8	38.4	34.8	39.0	40.3	36.5	36.8
MA	61.8	66.3	65.3	69.3	65.9	65.8	61.6	55.9	54.5	48.8	45.2	42.5
NE	61.8	66.3	65.3	69.3	65.9	65.8	61.6	55.9	54.5	48.8	45.2	42.5
PO	46.7	49.8	53.5	54.5	54.1	56.0	50.8	51.3	54.3	50.6	48.8	46.0
PR	75.6	87.8	100.2	114.4	129.0	131.4	132.9	131.2	131.5	126.1	122.0	117.7
RO	12.3	21.8	29.6	34.0	37.0	37.6	39.2	37.8	37.3	35.1	34.7	35.3
SW	37.5	40.7	38.1	37.2	37.5	40.2	44.9	43.7	42.3	40.7	38.8	34.8
SL	21.8	34.5	38.3	46.5	53.6	70.0	80.3	82.6	78.7	74.1	70.4	66.1
SK	28.6	36.4	41.0	43.5	51.8	54.7	53.5	51.9	52.0	51.3	49.5	48.0
UK	49.4	63.3	74.6	80.1	83.2	84.2	86.2	86.9	86.8	86.3	85.7	85.4

Source: IMF, 2022.

Table 3.3 shows the percentages of general government budget balances as a share of GDP between 1996 and 2007. After the signing of the MT, as stipulated by the debt rule,

some countries need to meet the 3% limit determined as the budget rule in the Maastricht Criteria. Slovakia was not able to adapt to the budget rule in any other year except 2007. In this period, the Czech Republic, Portugal, the UK, Germany, Greece, Lithuania, Latvia, Malta, Poland, and Portugal were the countries deviated from the budget rule criterion. Hungary also failed to abide by the reference value in these years. Except for the years 1996, 1997, and 2003 for the Eurozone, and 1996 and 2003 for the EU, they were able to meet the budget rule criteria (IMF, 2022).

Table 3.3. General Government Budget Balance (1996-2007), % of GDP

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
AU	-3.61	-2.06	-2.13	-2.10	-2.15	-0.56	-1.02	-1.50	-4.62	-2.08	-2.23	-0.68
BE	-4.08	-2.15	-1.04	-0.33	0.28	0.37	-0.03	-1.80	-0.19	-2.71	-0.09	-0.04
BG	-10.5	2.17	0.04	-1.05	-0.06	0.79	-1.13	-0.04	2.21	2.36	3.84	2.23
CY	0.98	-1.10	-2.24	-2.12	-0.13	0.07	-1.73	-3.29	-1.40	-0.22	0.70	4.57
CZ	-2.94	-4.20	-4.71	-4.72	-4.20	-6.60	-7.01	-4.18	-2.29	-2.57	-1.60	-0.55
GE	-3.48	-2.97	-2.54	-1.67	-1.47	-3.00	-3.94	-3.79	-3.63	-3.54	-1.76	0.04
DE	-2.48	-1.39	-0.81	0.46	1.57	0.63	-0.40	-0.59	1.72	4.41	4.70	4.92
ES	0.63	3.79	1.91	-1.25	1.98	2.56	4.08	4.77	4.20	3.34	5.81	6.55
GR	-6.64	-4.26	-3.35	-2.04	-1.05	-2.53	-2.98	-4.09	-5.61	-4.49	-4.08	-4.59
SP	-4.31	-2.20	-0.87	0.67	0.53	1.37	1.77	1.70	1.88	3.39	4.33	4.53
FI	-2.44	-0.02	2.58	2.48	7.34	5.43	4.77	3.20	3.12	3.13	4.16	5.54
FR	-2.96	-3.15	-1.68	-0.82	-0.35	-0.43	-2.20	-3.05	-2.57	-2.30	-1.52	-1.67
CR	-2.96	-3.15	-1.68	-0.82	-0.35	-0.43	-2.20	-3.05	-2.57	-2.30	-1.52	-1.67
HU	-7.32	-7.19	-8.28	-6.90	-3.92	-4.25	-7.42	-7.17	-6.34	-7.06	-7.56	-4.22
IR	0.48	2.21	3.11	4.97	6.66	3.46	1.99	2.28	3.04	3.34	4.84	3.20
IT	-6.07	-2.43	-2.34	-1.00	-1.72	-2.38	-2.61	-2.47	-2.63	-3.29	-2.87	-0.68
LT	-4.83	-13.1	-3.87	-3.76	-4.16	-4.41	-1.75	-1.04	-0.59	0.56	1.42	2.16
LU	4.49	4.93	5.93	6.12	7.74	6.68	5.19	3.42	1.66	3.12	3.99	6.22
LA	-4.54	-3.50	-4.58	-8.13	-6.39	-5.15	-4.95	-2.78	-1.49	-1.06	0.46	1.79
MA	-6.67	-5.56	-7.36	-4.22	-3.59	-4.79	-3.57	-6.66	-3.52	-1.11	-1.04	-1.24
NE	-1.60	-1.27	-1.06	0.83	1.87	0.51	-0.75	-1.76	-1.12	-0.06	0.54	0.42
PO	-4.62	-3.97	-3.53	-1.99	-3.83	-4.73	-4.74	-5.97	-4.73	-3.20	-2.29	-0.11
PR	-1.98	-0.31	-1.41	-0.25	-1.04	-2.02	-1.47	-3.60	-3.95	-4.50	-3.23	-2.20
RO	0.32	-1.86	-1.51	-2.47	-1.43	-1.53	0.25	-0.06	-0.06	0.27	1.46	2.02
SW	-2.12	-0.50	0.95	1.52	3.56	2.04	-0.52	-0.45	0.89	2.45	2.90	4.13
SL	0.70	-0.79	-0.76	-1.03	-2.08	-2.51	-0.73	-0.86	-0.06	0.15	0.82	2.52
SK	-11.6	-6.11	-6.68	-9.67	-14.7	-8.44	-9.00	-5.03	-3.56	-3.14	-3.29	-2.04
UK	-6.36	-4.51	-2.90	-2.01	-1.30	-2.23	-4.31	-5.50	-5.08	-4.57	-4.79	-4.83

Source: IMF, 2022.

In Table 3.4, which includes the ratios of the budget balances to GDP of the EU countries between 2008 and 2019, the adverse effects of the 2008 economic crisis are striking. In 2008, the budget balances began to deteriorate, and the budget rule criteria was

not met in 2009 in the Eurozone and the EU, which continued until 2013 (IMF, 2022). In 2009, most countries failed to comply with the criterion, while only Estonia, Luxemburg, Slovenia, and Sweden had budget deficits below the 3% criterion. Even though the budget balance ratio to GDP in Estonia and Luxemburg decreased compared to 2008, they still recorded a budget surplus in the year concerned. Slovenia, on the other hand, deviated from the budget rule criterion, with a deficit of 3.2% in 2010. Another striking point is that Ireland's budget balance to GDP ratio was negative 30.6% in 2010, the highest budget deficit ratio in the world in the relevant year.

Table 3.4. General Government Budget Balance (2008-2019), % of GDP

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AU	-0.7	-4.6	-3.8	-2.2	-1.9	-1.6	-2.4	-0.6	-1.1	-0.3	0.7	1.2
BE	-1.1	-5.2	-3.9	-4.0	-3.9	-2.9	-2.8	-2.2	-2.2	-0.5	-0.4	-1.5
BG	4.1	-2.5	-2.1	-1.3	-0.3	0.6	-3.0	1.8	0.2	1.0	2.1	2.9
CY	2.2	-2.8	-2.4	-4.1	-5.3	-5.8	-9.2	-1.2	0.5	2.5	0.2	2.0
CZ	-1.2	-4.4	-4.0	-2.9	-4.4	-2.2	-2.5	0.2	-0.2	1.0	1.3	1.0
GE	-0.2	-3.1	-4.3	-0.9	-0.1	-0.1	0.4	0.8	1.1	1.3	2.0	1.6
DE	3.1	-2.8	-2.6	-1.8	-2.8	-0.6	2.1	-0.7	0.8	2.4	1.4	4.5
ES	1.4	1.0	0.6	1.8	3.1	2.4	2.7	2.0	1.0	2.0	1.7	2.0
GR	-7.5	-13.3	-11.2	-11.8	-10.4	-12.6	-3.5	-5.1	0.0	-0.2	-0.2	0.0
SP	-1.9	-8.3	-7.2	-8.6	-10.9	-7.5	-6.4	-5.2	-4.8	-3.4	-2.8	-3.1
FI	4.7	-1.9	-2.2	-0.5	-1.5	-1.9	-2.3	-2.4	-1.1	-0.1	-0.1	-0.1
FR	-2.4	-6.1	-6.0	-4.5	-4.2	-3.4	-3.6	-3.5	-3.5	-2.9	-2.1	-2.6
CR	-2.4	-6.1	-6.0	-4.5	-4.2	-3.4	-3.6	-3.5	-3.5	-2.9	-2.1	-2.6
HU	-4.1	-4.8	-4.5	-5.7	-2.3	-1.8	-0.7	1.1	-2.4	-1.6	0.3	0.6
IR	-3.4	-12.0	-30.6	-12.9	-8.2	-6.2	-3.2	-1.7	-0.2	0.2	1.0	1.5
IT	-2.0	-4.2	-4.0	-3.5	-3.2	-3.3	-3.5	-3.0	-2.9	-3.0	-2.8	-1.9
LT	-0.1	-7.7	-4.9	-7.3	-2.2	-2.1	-0.1	0.5	0.5	1.1	1.2	1.1
LU	5.3	2.0	2.5	2.8	2.3	2.3	3.0	3.1	3.7	3.2	4.8	4.1
LA	-3.2	-9.0	-8.3	-3.7	-0.9	-0.9	-1.3	-0.9	-0.3	-0.1	1.2	0.4
MA	-4.2	-3.4	-2.4	-2.6	-2.2	-1.6	-0.2	1.2	1.7	3.7	3.1	2.4
NE	1.0	-4.0	-4.4	-3.8	-3.5	-2.7	-2.3	-2.0	0.1	1.3	1.4	1.8
PO	-1.5	-4.7	-4.0	-1.4	-1.5	-2.6	-1.7	-0.6	-1.5	0.0	2.1	1.3
PR	-3.5	-8.3	-8.8	-7.1	-6.7	-5.8	-8.2	-5.0	-3.1	-3.9	-1.1	-0.7
RO	-0.4	-5.0	-3.1	-2.0	-0.7	0.6	1.1	2.7	-1.0	-2.0	-2.3	-2.9
SW	2.7	0.0	0.9	0.7	0.0	-0.4	-0.5	1.0	2.1	2.8	2.5	2.2
SL	1.5	-3.0	-3.2	-5.1	-2.7	-12.8	-3.2	-0.9	-1.6	0.5	2.0	1.9
SK	-2.3	-7.4	-6.8	-3.7	-4.2	-2.6	-2.2	0.6	-2.2	-0.9	-0.3	-0.8
UK	-7.0	-11.9	-5.1	-9.2	-9.9	-6.5	-6.2	-5.2	-3.8	-3.2	-3.7	-3.3

Source: IMF, 2022.

3.1.3.3. Six-Pack Regulation

The financial assistance and loan aid of the European Central Bank only solved the liquidity problems in the short run, but more was needed to overcome the fiscal difficulties. The SGP was revised again in 2010 and was subject to a comprehensive regulation consisting of several laws. The six-pack reform aimed at strengthening the procedures for reducing public deficits and debts and addressing macroeconomic imbalances entered into force on 13 December 2011 (EC, 2019). The preventive arm was improved by strengthening surveillance and the corrective arm by enhancing the enforcement mechanism through sanctions. The package on the requirements of national budget frameworks already mentioned the need for independent bodies and stipulated that each country should establish an independent body, such as the fiscal council which is responsible for monitoring compliance with fiscal rules (Claeys et al., 2016). First, national fiscal rules should help respect the EU fiscal rules by serving as a first line of defense against violations of EU rules in the fiscal area. It should also be equipped with procedures to ensure effective and timely monitoring of compliance with national numerical fiscal rules (EC, 2014).

3.1.3.3.1. The Preventive Arm Changes

The six-pack includes an imposition mechanism if no action is taken to correct the significant deviation from the medium-term budgetary objectives (Lledó et al., 2017). It also determines the allowable limits deviate from the pace at which a member state should approach its medium-term budget objective as "significant deviation" in terms of both the expenditure criteria and the structural balance (Marzinotto & Sapir, 2012). An expenditure benchmark was introduced to complement the change in the structural balance when assessing progress in medium-term budget objectives (Tóth & Berta, 2017). This rule, based on an expenditure benchmark that ensures that expenditures adjusted for discretionary income measures grow in line with potential medium-term growth, is that adjusted primary expenditure should not exceed potential medium-term GDP growth (EC, 2017b). By way of illustration, if a member fails to meet its medium-term budget objective, the country's expenditure growth should not exceed its potential medium-term GDP growth. In addition, expenditure developments should lead to a 0.5% annual improvement in the structural deficit for countries adapting to the medium-term budgetary objective. According to the preventive regulation, Member States that have not yet reached their medium-term budget objectives

and have a debt ratio of more than 60% of GDP are required to improve their structural balance by more than 0.5% of GDP per year (Koester et al., 2012). The preventive regulation strengthens the procedure. It gives an alert when it detects a significant deviation. If the country does not take effective action, the Commission may propose a fiscal sanction in the form of an interest-bearing deposit of 0.2% of GDP (Frayne & Jaffee, 2013).

3.1.3.3.2. The Corrective Arm Changes

The concept of "sufficiently diminishing" a debt level was introduced with the changes to six-pack corrective arm through a new debt reduction criterion for debt-to-GDP ratios to decline steadily towards the reference value of 60% (Frayne & Jaffee, 2013). Member states are required to achieve an annual average reduction in debt ratio of one-twentieth of the surplus above the reference value of 60%. In Even if the budget deficits do not exceed 3% of GDP, Member States, may be subject to the excessive deficit procedure if their debt-to-GDP ratios exceed the critical level of 60% and are not decreasing fast enough. An early and gradual sanction system will be implemented at every stage of the excessive deficit procedure (EC, 2018b). The imposition of early and gradual sanctions is based on the need to ensure that action is taken at the early stages of the excessive deficit procedure. Introducing reverse qualified majority voting for new sanction decisions is an important innovation. Reverse qualified majority voting means that the sanctions proposed by the Commission are accepted unless a qualified majority of the countries oppose them, adding a level of automaticity to the sanctions (Frayne & Jaffee, 2013).

3.1.3.4. Fiscal Compact

The Fiscal Compact aims to promote fiscal discipline and strengthen the role of the SGP, especially in the Euro area. In March 2012, twenty-five EU Member States except for the Czech Republic, Croatia and the United Kingdom, approved the intergovernmental Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (TSCG), which includes the Fiscal Compact (EC, 2018b). Of the 25 contracting parties, 22 are formally bound by the Fiscal Agreement: 19 Eurozone member states plus Bulgaria, Denmark, and Romania (EC, 2018a). Consisting of two components, the balanced budget rule with an automatic correction mechanism and the second one strengthening the excessive deficit procedure, the consensus reiterates that if public debt exceeds 60% of GDP, the

difference between the actual debt burden and the reference value should be reduced by one-twentieth each year.

According to the Fiscal Compact, the annual structural budget balance should align with the country-specific medium-term target, with 0.5% of GDP forming the lower bound of this balance. An exception is made only for countries with a low risk to long-term fiscal sustainability where the debt-to-GDP ratio is well below 60%. A structural gap of up to 1% is allowed in the countries concerned. In case of a deviation between the annual structural budget balance and the medium-term target, a correction mechanism will be triggered automatically. This deviation can be corrected by the member state within a well-defined period. Under the other component of the agreement, the automatic mechanism of the excessive deficit procedure is strengthened when a eurozone country violates the open reference value. The fiscal councils will monitor compliance with the budget rule in the 2012 Fiscal Compact. The Fiscal Compact has empowered the Commission to develop common principles on the role and independence of these monitoring bodies. These common principles for fiscal councils include the “obey or explain” principle ((Frayne & Jaffee, 2013).

3.1.3.5. Two-Pack Regulation

The most significant differences from the six-pack are that the two-pack regulations, which entered into force on 30 May 2013, apply only to the Eurozone member states and do not introduce any new fiscal rules. Complementing the six-pack reform, the two-pack regulations introduced a new surveillance procedure to ensure compliance with the SGP.

Two-pack regulatory arrangements introduced to strengthen policy coordination in the Eurozone consist of four main headings. These are draft budgetary plans, economic partnership programs, Commission’s autonomous recommendations and enhanced surveillance (Thygesen et al., 2019).

As part of the draft budget plans, the Euro area countries are obliged to submit their draft budget plans for the following year to the Commission and the Council by 15 October (EC, 2014). Before the national parliament adopts the draft budget plan, the Commission may submit an opinion and request a revision of the draft. Countries with excessive deficit procedures within the scope of economic partnership programs are subject to closer

monitoring. A fiscal structural reform map is drawn up, if deemed necessary, in order to put an end to excessive deficits in the relevant countries. The Commission's autonomous recommendation means the Commission's advice to countries that may miss the deadline for correcting excessive deficit. On the other hand, enhanced surveillance includes closer monitoring of Euro area countries facing significant challenges in terms of fiscal and macroeconomic stability. It is stated that these countries should take measures in cooperation with the Commission to solve their problems. The aim here is to find solutions to the issues of countries by preventing the spread of negative externalities to other countries (Thygesen et al., 2019). In addition, with the two-pack reform, it was specified that stabilization programs should be based on macroeconomic forecasts produced or approved by an independent institution (EC, 2018a).

3.1.4. Euro Plus Pact

The global economic crisis, which started with market failures in the housing market due to mortgage loans in the USA and spread from developed to developing countries with the effect of globalization, had a negative impact on the EU countries. Throughout the crisis, the economies of numerous countries, including those within the EU, experienced a significant contraction. This contraction took the form of a decline in economic output, characterized by reduced levels of production, consumption, and investment. The magnitude and duration of the economic downturn varied among countries, influenced by factors such as the severity of the crisis, the effectiveness of government policies and the resilience of each nation's economic structure. The EU was significantly affected by the crisis due to deficiencies in economic governance and the limited competitiveness observed in certain member states. In the aftermath of the crisis, EU countries experienced a notable rise in budget deficits and public debts, raising concerns regarding fiscal discipline and the long-term sustainability of public finances. On 29 September 2010, the economic governance package was adopted to ensure sustainability in public finances, re-establishing macroeconomic stability and fiscal discipline. Considering the debt crises experienced in the Euro area in the relevant period, Germany proposed, with the support of France, establishing the Competition Pact on 4 February 2011 to realize economic and social reforms. However, since the pact contains stringent provisions, most member states opposed the pact. The conditions in the content of this pact were relaxed, and the Euro Competition Pact (Euro Plus Pact) was adopted by the European Council on 24-25 March 2011. Bulgaria, Latvia,

Denmark, Lithuania, Romania, and Poland, which were not in the Eurozone at the time the Euro Competition Pact was adopted, joined the pact. Other EU member countries could also join the pact at any time. The main purpose of the pact is to strengthen the "competitiveness" of the participating countries (Gros & Alcidi, 2011).

Strengthening the economic and monetary union, improving the coordination of economic policies in the euro area, increasing the competitiveness of member countries, ensuring fiscal stability and securing employment-enhancing growth are the objectives of the Euro Competition Pact (Barnard, 2012).

Under the Pact, the Euro-area Member States are committed to taking all necessary steps to achieve the objectives of increasing competitiveness, employment, sustainability of public finances and strengthening fiscal stability.

3.2. Fiscal Rules in EU Countries

Fiscal rules are applied in EU countries at both international and national levels. EU countries have been using fiscal rules at the international level within the framework of the MA and the Stability Growth Pact, which has undergone various reforms since the 1990s. The rules at the national level can be applied within the scope of the general government, central government, local government, and social security. The national fiscal rules, which have been implemented since the 1990s and have become increasingly widespread, have also undergone significant changes after 2008, and their number has increased over time. As can be seen in Figure 3.1, 57 budget rules, 27 debt rules, 16 expenditure rules, and only four income rules were applied in 27 EU countries in 2020.

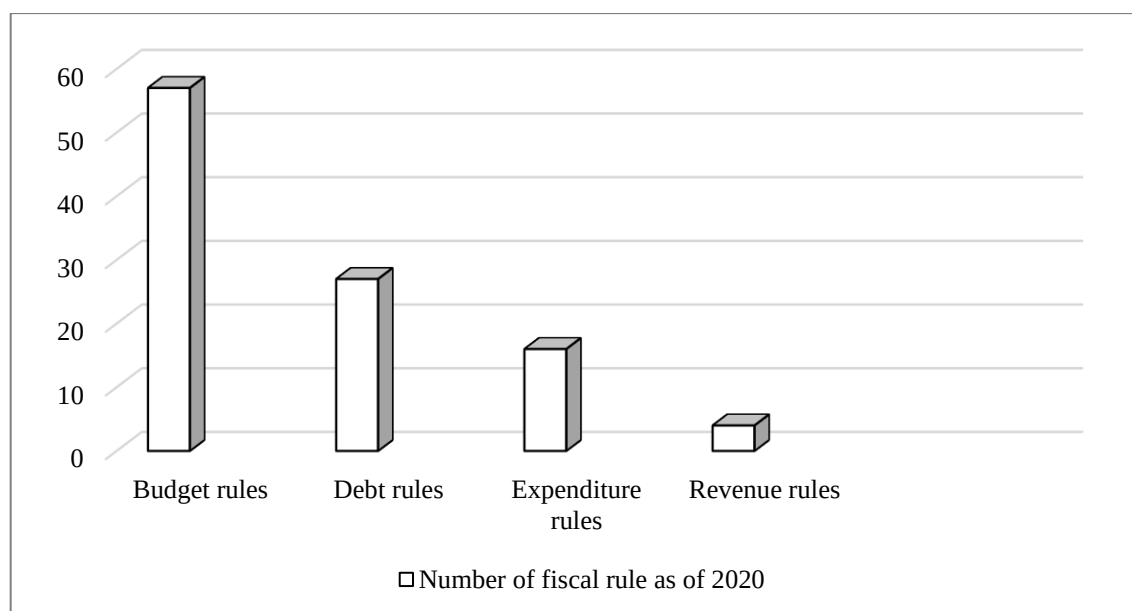


Figure 3.1. The number of national fiscal rules in 27 EU countries, as of 2020.

Source: EC, 2020.

3.2.1. Budget Rules in EU Countries

3.2.1.1. Supranational Budget Rule

In the EU, the budget rules that cover the general government and have an official implementation procedure implemented within the framework of the Maastricht Criteria and the SGP at the supranational level include a monitoring mechanism outside the government. In addition, the relevant rules had well-defined escape clauses in 2005.

The rules, implemented in 1993, changed in 2005 and 2012. In 1993, within the scope of the rule that the budget deficit cannot exceed 3% of the GDP if the limit is exceeded, an excessive deficit procedure called "corrective arm" is opened. However, within the scope of the SGP reform in 2005, if the deficit exceeds the limit only temporarily and exceptionally, and the realized deficit is close to the limit, the excessive deficit procedure may not be opened. With the governance reform realized in 2011, flexibility was provided regarding budget rules in countries with a debt ratio below 60% of GDP. The ECOFIN Council sets a time frame for the annual fiscal effort to be structurally at least 0.5 % of GDP. In case of unfavorable economic developments, the time given by the Council may increase. However, in case of insufficient progress, Eurozone member states may face closer surveillance, sanctions, and fines. For example, a penalty of between 0.2 % and 0.5 % of GDP can be

imposed if no effective action is taken. A qualified majority of the council is required to open the excessive deficit procedure, whereas an inverted qualified majority is needed to enforce sanctions. In addition, medium-term budget targets, which are close to the balance or give a surplus, have been determined for the structural budget balance until 2005. This is called the corrective arm. Within the scope of the SGP reform in 2005, country-specific medium-term budget targets were introduced. According to these targets, medium-term budget targets should structurally be at least one % of the GDP. While there was no procedure for implementing medium-term budget targets until the 2011 governance reform, with the Sixth Package, an imposition mechanism was established in case action needed to be taken to correct the significant deviation from the target. Subsequently, monitoring and enforcement procedures were strengthened with the Fiscal Reconciliation in 2012 and the Bilateral Package in 2013. In 2015, a guide on the implementation of the SGP was published. The escape provisions were explained in detail, and the flexibility provisions were clarified to encourage structural reforms and consider the economic cycle (Lledó et al., 2017).

3.2.1.2. National Budget Rules

The budget rules applied at the national level, apart from the international level in EU countries, are given in Table 3.5. While the national budget rules are implemented most frequently based on the general government, they find a minor application area based on social security. The countries where the budget rule applies in all scopes are Germany and Finland.

Table 3.5. National budget rules in EU countries, as of 2020.

Country	Budget Rules			
	G.G. ⁴	C.G. ⁵	L.G. ⁶	S.S. ⁷
Austria	2008-2020+	1999-2007	1999-2007	
Belgium	2014-2020+		1990-2020+	2003-2020+
Bulgaria	2011-2020+ ⁸		2014-2020+	
Cyprus	2013-2020+		1986-2020+	
Czech Republic	2017-2020+			
Germany	2013-2020+	1990-2008 2009-2020+ ⁹	1990-2020+	2009-2020+
Denmark	1992-2017 2012-2020+ ¹⁰			
Estonia	1993-2020+			
Greece	2019-2020+			
Spain	2002-2020+			
Finland	2013-2020+	1999-2002 2003-2008 2011-2014 2015-2020+ ¹¹	1995-2020+ 2015-2020+ ¹²	2015-2020+
France	2013-2020+		1983-2020+	
Croatia	2019-2020+			
Hungary	2014-2020+			
Ireland	2012-2020+		2004-2020+	
Italy	2014-2020+		2001-2020+ 2016-2020+ ¹³	

⁴ G.G.: General government

⁵ C.G.: Central government

⁶ L.G.: Local government.

⁷ S.S.: Social security.

⁸ Structural balance started to be implemented in 2014. The nominal budget balance started in 2011.

⁹ Between 1990 and 2008, the golden rule was applied. Between 2009-2020+, a rule applies, meaning that Federation budgets are balanced without loan proceeds when structural net borrowing does not exceed 0.35% of GDP.

¹⁰ 1992-2017: Structural budget surpluses in the interval 0.5 - 1.5% of GDP. 2017-2020+: The yearly target for structural budget balance is the Stability and Growth Pact's Medium-Term Objective, but with a lower threshold for the structural deficit of 0.5 % of GDP (EC, 2020).

¹¹ "1999-2002: After the election, balanced CG finances should be guaranteed under typical economic growth conditions. Allowable short-term deviations include cyclical ones if they don't endanger the CG debt ratio's decline. The CG deficit cannot be greater than 2.75% of output (EC, 2020).

2003-2008: A structural surplus of 1% is to be achieved by the end of the parliamentary term. Short-term cyclical or other deviations are permitted if they do not jeopardize the reduction of the CG debt ratio. Even in a weak economy, the CG deficit must not exceed 2.5% of total output.

2011-2014: The central government deficit should not exceed 1% of GDP.

2015-2020+: The central government deficit should not exceed 0.5% of GDP (EC,2020)."

¹² 1995-2020+: LG's balanced budget rule states that if there is a deficit, the budget must be balanced within the next four years.

2015-2020+: Local government deficit should not exceed 0,5 % of GDP (EC, 2020).

¹³ 2001-2020+: The golden rule is that local and regional entities may only run deficits to finance investments. 2016-2020+: Regardless of population, the nominal balanced rule applies to all local governments (municipalities, provinces, metropolitan cities, and regions). Municipalities, provinces, metropolitan cities, ordinary and autonomous regions, and other local authorities each have their own target. The regional spending cap is calculated entirely on an accrual basis. The new rule in Law 243/2012, as amended in 2016, allows for local public investments to be financed not only through debt but also through administration results from previous years (EC,2020).

Table 3.5. (continued) National budget rules in EU countries, as of 2020.

Country	Budget Rules			
	G.G. ¹⁴	C.G. ¹⁵	L.G. ¹⁶	S.S. ¹⁷
Lithuania	2015-2020+		1990-2005 2006-2015 2016-2020+ ¹⁸	2016-2020+ 2018-2020+ ¹⁹
Luxemburg	2013-2020+		1989-2020+	1992-2020+
Latvia	2013-2020+			
Malta	2014-2020+			
Netherlands	2014-2020+			
Poland		2006-2007	2011-2020+	
Portugal	2014-2020+	2002-2020+	2014-2020+	
Romania	2014-2020+			
Sweden	2000-2006 2007-2018 2019-2020+ ²⁰		2000-2020+	
Slovenia	2015-2020+			
United Kingdom²¹	1997-2008 2010-2014 ²²			
Slovakia	2014-2020+		2002-2008 2005-2020+ ²³	

Source: EC, 2020.

¹⁴ G.G.: General government

¹⁵ C.G.: Central government

¹⁶ L.G.: Local government.

¹⁷ S.S.: Social security.

¹⁸ 1990-2005: LG must approve balanced budgets.

2006-2015: The rule allows a deficit of local government budgets that cannot exceed expenditure from borrowed funds for capital expenditure within borrowing limits approved by Parliament.

2016-2020+: Small budgets of the GG must be nominally balanced (EC, 2020).

¹⁹ 2016-2020+: The State Social Insurance Fund of the Republic of Lithuania's budget for the year concerned shall be planned, approved, amended, and implemented in such a way that its structural deficit calculated on an accrual basis may increase only in the year when, according to the economic development scenario published by the government of the Republic of Lithuania or its authorized institution, a negative output gap is planned (EC, 2020).

2018-2020+: Compulsory health insurance funds and large municipalities must have structurally balanced budgets. These rules concern both local governments and social security (EC, 2020).

²⁰ 2000-2006: A surplus for the GG in terms of 2% of GDP over the cycle targeted.

2007-2018: A surplus for the GG in terms of 1% of GDP over the cycle targeted.

2019-2020+: A surplus for the GG in terms of 0.33% of GDP over the cycle targeted (EC, 2020).

²¹ The UK data is taken from the 2018 fiscal rule dataset, as it is not included in the EC fiscal rule dataset published in 2021 (EC, 2020).

²² 1997-2008: Golden rule

2010-2014: Fiscal mandate: Achieve cyclically-adjusted current balance by the end of the rolling, five-year forecast period (EC, 2020).

²³ 2002-2008: LG budgets are divided into two distinct parts. (1) No deficits are allowed in the current budget. (2) If the capital budget is funded by (i) past unused funds, (ii) loans, or (iii) a surplus from the current budget for the current year, a deficit may be possible.

2005-2020+: The current budget for local governments must be approved as either balanced or in surplus. A deficit in the capital budget is acceptable if it is covered by loans, unspent funds from local governments (EC, 2020).

3.2.1.2.1. General Government Budget Rules

The rules applied under the nominal balance as a percentage of GDP are in Bulgaria, Hungary, the Netherlands, and Finland and have a monitoring body by an independent institution. In Austria, Bulgaria, and Estonia, rules on the nominal budget balance are applied, and the monitoring body of all rules is an independent institution. Budget rules applied within the scope of the general government generally contain restrictions on the structural budget balance. Various budget rules on structural budget balance have been used in 26 EU countries. While the monitoring body of all the rules regarding the structural budget balance is an independent institution, in some rules, the Ministry of Finance, the European Commission, the government, and the national parliament act as the monitoring body. In 2020, budget rules related to structural budget balance were applied in 25 EU countries. In addition, in 21 EU countries, the legal basis for rules on structural budget balance is higher than constitutional or ordinary law, while in 4 countries, the legal basis is ordinary law. The rule on the primary budget balance includes that the government will submit a budget bill to the national parliament, ensuring that the primary budget balance is sufficient in the Maastricht sense, and it was implemented only in Hungary between 2007 and 2008.

Looking at Finland, which applies rules in all scopes, the government sets a medium-term target for the structural balance of the general government, according to the rule used under the general government. The legal basis of this rule, implemented multi-yearly since 2013, is higher than constitutional or ordinary law. The rule monitoring agency is the government and an independent agency. The agency tasked with detecting the presence of deviation from the target is an independent agency and the European Commission.

3.2.1.2.2. Central Government Budget Rules

The budget rule is applied in only five countries under the central government. While Finland is the only country that uses a rule on structural budget balance, the content of the rule is as follows: After the election, balanced central government finances are to be guaranteed under normal economic growth conditions. Cyclical or other short-term deviations are permitted as long as they do not jeopardize the reduction of the CG debt ratio. The CG deficit cannot exceed 2.75 % of the total output. The Ministry of Finance follows this multi-year rule, and its legal basis is political commitment. The only rule followed by an independent institution under the central government has been applied in Germany since

2009 and has a higher legal basis than constitutional or ordinary law. This rule, in principle, involves balancing the federation's budgets without credit card revenue. This principle is met for the Federation when the structural net borrowing does not exceed 0.35 % of GDP. In addition, the golden rule, which was followed by the Ministry of Finance and the national parliament between 1990 and 2008, and whose legal basis was higher than the constitutional or ordinary law, was applied in Germany. Another country that has implemented the budget rule within the scope of the central government is Austria, which involved a rule regarding the nominal budget balance, whose legal basis was the ordinary law, between 1990 and 2007. Also, budget rules on nominal budget balance were applied in Poland and Portugal.

3.2.1.2.3. Local Government Budget Rules

The multidimensional effect of globalization has caused substantial and fundamental changes in economic, political, and social fields worldwide. The public administration has also been significantly affected by these changes, essential responsibilities have been imposed on the public sector, and changes have occurred in the functioning of institutions. The distribution of public services between the central and local administrations varies according to the level of centralization. Although centralism is at the forefront with the increase in service expectations, the role of local administrations is gradually increasing due to reasons such as reducing bureaucracy, being close to the citizens to provide the service, and providing the services in place. The increasing continuation of the delegation of authority from the center to the local is a part of the transformation in public administration. However, as a result, expenditures and debt ratios of local governments may increase due to populist policies and growing public needs. Permanent fiscal indiscipline due to unsustainable fiscal policies of local governments can also raise concerns about the fiscal sustainability of the central government. In this context, the fiscal rules applied within the scope of local governments can contribute to the effective use of resources by aiming to ensure fiscal discipline (Karayazı, 2021).

Budget rules are the most applied type of fiscal rule within the scope of local governments, and they have been implemented and are being used in 15 EU states. Political commitment constitutes the legal basis of the budget rule, which started in 2004 and continues in Ireland. The rule is that for any given year, the local government must have a total net deficit of no more than a fixed nominal amount. Finland is the only country whose

legal basis is a political agreement, and the budget rule applied since 2015 is that the local government deficit should not exceed 0.5% of GDP. This rule, which is applied multi-yearly, is supervised by an independent body. The legal basis of the rules applied in Belgium, Cyprus, Estonia, France, Italy, Lithuania, Portugal, and Slovakia is higher than constitutional or ordinary law. Among them, Lithuania and Slovakia are the countries with the rule monitored by an independent body. The countries in which the budget rules, subject to the audit of the Court of Accounts, are applied are France, Italy, and Portugal. Budget rules in other countries are followed by the national parliament, government, or the Ministry of Finance.

Budget rules applied under local governments in Austria, Belgium, Bulgaria, Ireland, Finland, France, Cyprus, Poland, Lithuania, Luxembourg, and Slovakia include restrictions on the nominal budget balance. The rule of the type of restriction on the ratio of structural deficit to nominal GDP exists only in Lithuania. Budget balance rules apply in absolute terms in Italy, Poland, and Portugal. Budget balance rules as a percentage of GDP are used in Germany, Lithuania, Romania, Sweden, and Slovakia.

3.2.1.2.4. Social Security Related Budget Rules

Budget rules implement within the scope of social security in Belgium, Germany, Finland, Lithuania, and Luxembourg. While the legal basis of the nominal rule on the budget balance in Belgium was the coalition agreement between 2003 and 2016, it has been the ordinary law since 2017. The monitoring body of the rule was the Court of Accounts until 2016, after which the government and an independent institution were added to the Court of Accounts. On the other hand, the government is tasked with detecting deviation from the target.

The rule on the budget balance as a percentage of GDP in Germany, whose legal basis is ordinary law, is monitored by an independent institution. The budget rule on the nominal budget balance, whose legal basis is ordinary law, is implemented in Luxembourg and is followed only by the government. In Lithuania, two different rules are applied to the structural budget balance. One of the rules has been implemented since 2016 and the other since 2018, and both have a higher legal basis than constitutional or ordinary law. Finally, in Finland, a multi-year rule, whose legal basis is a political agreement, has been followed

by an independent institution since 2015, and the rule is put on the nominal balance as a percentage of GDP.

3.2.2. Debt Rules in EU Countries

3.2.2.1. Supranational Debt Rule

The supranational debt rule, which started to be implemented in the EU in 1993, covers the general administration. This rule, which states that public debt cannot exceed 60 % of GDP, had well-defined escape clauses in 2005. The 2011 governance reform introduced a mandatory annual rate of debt reduction, starting three years after a country abandoned its excessive deficit procedure. In case of insufficient progress in the transition period, as in the budget rule, an excessive deficit procedure can be opened with sanctions and fines (for Eurozone members). A qualified majority of the ECOFIN council is required to open the excessive deficit procedure (Lledó et al., 2017).

3.2.2.2. National Debt Rules

In addition to the debt rule applied at the international level in EU countries, there are many rules applied at the national level. Table 3.6 demonstrates the national debt rules and periods applied in the scope of the general government, central government, local government, and social security. As seen from the table, no rules are used within the social security range when the debt rules applied nationally in the EU are examined. In contrast, the rules based on general administration are applied most frequently.

Table 3.6. National debt rules in EU countries, as of 2020.

Country	Debt rules			
	G.G.	C.G.	L.G.	S.S.
Austria	2017-2020+			
Bulgaria	2014-2020+		2005-2013 2014-2020+ ²⁴	

²⁴ 2005-2013: According to the most recent audited report on the municipality's budget implementation, the nominal value of the municipal guarantees issued cannot be greater than 5% of the total of the municipality's own source revenues, and the block equalizing grant.

2014-2020+: The annual amount of municipal debt payments for each municipality may not exceed 15 % of the annual average amount of own revenue and the total balancing subsidy for the past three years is calculated based on information from the annual reports on the municipal budget implementation (EC, 2020).

Table 3.6. (continued) National debt rules in EU countries, as of 2020.

Country	Debt rules			
	G.G.	C.G.	L.G.	S.S.
Cyprus	2015-2020+			
Czech Republic	2017-2020+		2017-2020+	
Estonia		2010-2020+	1997-2020+	
Greece	2014-2020+			
Spain	2012-2020+			
Finland	2015-2020+	1995-2007 2011-2014 ²⁵		
Croatia	2019-2020+	2009-2014		
Hungary	2014-2020+	2009-2011	1996-2011	
Ireland	2013-2020+			
Italy	2014-2020+			
Latvia	2013-2020+			
Malta	2014-2020+			
Netherlands	2014-2020+			
Poland	1997-2020+		2012-2014 2015-2020+ ²⁶	
Portugal	2013-2020+		2003-2006 2007-2013 2014-2020+ ²⁷	
Romania	2014-2020+		2010-2020+	
Sweden	2019-2020+			
Slovenia	2000-2009		1990-2014	
United Kingdom	1996-2008 2010-2016 ²⁸			
Slovakia	2012-2020+		2002-2020+	

Source: EC, 2020.

²⁵ 1995-2007: CG debt must be reduced over the legislative period.

2011-2014: The growth of the central government debt-to-GDP ratio must level off during the electoral period.

²⁶ “2012-2014: The total debt for each local government unit cannot exceed 60% of the year's revenue at the end of the fiscal year. Additionally, the total debt at the end of each quarter must not be higher than 60% of the projected revenues for that year.

2015-2020+: The ratio of installments of loans and interest payable in this fiscal year, the redemption of securities and interest payable on them, and potential payments resulting from sureties and guarantees granted to the planned revenues cannot exceed in a given fiscal year the arithmetic mean from the ratio of its current revenues augmented by revenues from the sales of assets and reduced by current expenditures computed for the previous three years to budget revenues in total (EC,2020).”

²⁷ 2003-2006: The goal is to keep the nominal budget balance stable by capping LG net debt growth at 0%.

2007-2013: A nominal budget balance is a goal. LG's net indebtedness is limited to 125% of the previous year's revenues, with a cap on medium and long-term loans (100%) and short-term loans (10%). LG's net debt growth is limited to 0% (EC, 2020).

2014-2020+: At the end of the year, the total debt cannot be greater than 1.5 times the average current net revenue gathered over the previous three years. Additionally, the total debt can only rise by 20% of the margin that was available at the start of each fiscal year each year (EC, 2020).

²⁸ 1996-2008: By 2015-16, the public sector's net debt as a percentage of GDP must be decreasing.

2010-2016: The sustainable investment rule states that public sector net debt as a percentage of GDP will be kept stable and prudent throughout the economic cycle. Other things being equal, net debt will be kept below 40% of GDP throughout the economic cycle (EC,2020).

3.2.2.2.1. General Government Debt Rules

As demonstrated by Table 6, there are debt rules based on the general government in 21 EU countries. Rules on nominal debt as a percentage of GDP were implemented in Bulgaria, Hungary, Ireland, Lithuania, Poland, and Slovenia. In contrast, rules on restrictions on the debt-to-GDP ratio were involved in 19 countries. Except for Ireland, an independent institution is undoubtedly among the monitoring bodies of the rules on the Debt-GDP ratio. In Ireland, the European Commission monitors the rule, while only the rules followed by the independent agency are in Austria, the Czech Republic, Lithuania, and Malta. Looking at the legal basis of the rules, Finland is the only country whose legal basis is a political agreement. In the Czech Republic, Greece, Lithuania, and Croatia, the legal basis for the rules is ordinary law. In contrast, in other countries where the debt rule applies, the legal basis is higher than constitutional or ordinary law.

3.2.2.2.2. Central Government Debt Rules

Central government debt rules apply in Estonia, Finland, Croatia, and Hungary. The rule, which states that central government units are not allowed to accumulate a net debt of more than 40% of their annual income, has been applied since 2014 and is monitored by an independent institution in Estonia. Another rule followed by an independent body is the rule used in Hungary between 2009 and 2011, whose legal basis is ordinary law. The relevant rule includes a restriction on the percentage change in real debt. In Croatia, a rule regarding the ratio of nominal debt to GDP, whose legal basis is ordinary law, has been applied. In Finland, a rule regarding the percentage of nominal debt to GDP, whose legal basis is a political agreement.

3.2.2.2.3. Local Government Debt Rules

Debt rules are implemented within the scope of local governments in 9 EU countries. The legal basis for debt rules in Bulgaria, Slovakia, and Portugal is higher than constitutional or ordinary law, while in other countries, the legal basis is ordinary law. It should also be noted that ordinary law is the basis for the debt rules applied in Portugal before 2014. When we examine the debt rules that apply to local governments, we can see that the monitoring body for the rule, which has only been in effect in Slovakia since 2002, is an independent organization. Along with an independent body, the Ministry of Finance of the relevant

country is responsible for monitoring the rule. The rule is as follows: Local governments are restricted from borrowing up to 60% of current revenue from the prior fiscal year in nominal terms (capital revenues and fiscal transaction revenues are excluded); additionally, annual installments for debt repayment are restricted to 25% of current revenue from the prior fiscal year. The monitoring bodies for debt rules in other countries are usually finance ministries. In Portugal and Slovenia, also the Court of Auditors monitors fiscal rules.

3.2.3. Expenditure Rules in EU Countries

3.2.3.1. Supranational Expenditure Rule

With the 2011 governance reform in EU countries, an international expenditure rule has been implemented since 2012, stating that the annual growth of primary expenditures should not exceed the long-term nominal GDP growth. However, within the scope of this rule, unemployment benefits and optional income increases are subtracted from primary expenditures. This rule applies to countries that are not in the excessive deficit procedure and are therefore moving towards the structural budget balance target. In case of non-compliance with the rule, even if the excessive deficit procedure is not opened for these countries, the Eurozone members are sanctioned in the form of a 0.2 % of GDP interest-bearing deposit.

3.2.3.2. National Expenditure Rules

As indicated in Table 3.7, national expenditure rules in EU countries are seen more frequently based on the general government and central government. The oldest rule is the expenditure rule, which started being implemented under the central government in Germany in 1990 and was applied until 2007.

Table 3.7. National expenditure rules in EU countries, as of 2020.

Country	Expenditure Rules			
	G.G.	C.G.	L.G.	S.S.
Austria	2009-2020+			
Belgium		1993-1998		1995-2015 2016-2020+ ²⁹
Bulgaria	2006-2020+ 2014-2020+ ³⁰		2014-2020+	
Germany		1990-2007 2008-2009 ³¹		
Denmark	2014-2020+			
Spain	2011	2012-2020+	2012-2020+	
Finland		1999-2006 2007-2014 2015-2020+ ³²		
Croatia	2011-2020+			
Ireland		2000-2012		
Italy	2014-2020+	1999-2006 2001-2007 ³³	1999-2006	

²⁹ “1995-2015: The federal government's real growth in healthcare expenditure should be equal to or less than 4.5%. The ceiling changed twice after 1999: from 2000 to 2003, the ceiling was 2.5%, and from 2004 it is 4.5%. In 2012, the ceiling will be 2%, and 3% in 2013-2015.

2016-2020+: The federal government's real growth in healthcare expenditure should be equal to or less than 1.5% (EC,2020).”

³⁰ 2006-2020+: The consolidated fiscal program’s expenditure cap is 40% of GDP.

2014-2020+: The reference growth of the potential gross domestic product shall serve as the ceiling for annual expenditure growth.

³¹ 1990-2007: Maximum expenditure growth of annually 1% on average for the federal government and Länder.

2008-2009: On average, maximum expenditure growth will be less than revenue growth.

³² “1999-2006: CG establishes a spending limit at the start of the electoral period.

2007-2014: Each year, in conjunction with the annual decision on Spending Limits, the Ministry of Finance adjusts the nominal budgetary expenditure ceilings to the next year's price level by converting the amounts set in real terms to nominal amounts during the annual budgetary process.

2015-2020+: The Government decides on the parliamentary term spending limits, i.e. a ceiling for budget expenditure, as well as the rules governing the spending limits procedure for the entire four-year parliamentary term, at the start of the parliamentary term. The allocation of spending limits for each administrative branch is reviewed in March-April as part of the General Government Fiscal Plan within the parliamentary term spending limits. The government is committed to following the spending rule and the central government spending limits decision, which are based on it and are included in the first General Government Fiscal Plan of the parliamentary term (EC, 2020).”

³³ “1999-2006: Internal Stability Pact provides LG with measures to limit expenditure. Expenditure evolution depends on the kind of entities (regions, municipalities, provinces) and the year to which it refers.

2001-2007: Expenditure ceiling for pharmaceutical products: 16% of the financing level for the National Health Service contributed by the State (EC,2020).”

Table 3.7. (continued) National expenditure rules in EU countries, as of 2020.

Country	Expenditure Rules			
	G.G.	C.G.	L.G.	S.S.
Lithuania		2008-2014 2015-2020+ 2015-2020+ ³⁴		2015-2020+ 2015-2020+ ³⁵
Latvia	2014-2020+			
Netherlands	1994-2020+			
Poland	2016-2020+			
Romania	2014-2020+			
Sweden		1996-2009 2010-2020+ ³⁶		1996-2009 2010-2020+
Slovenia	2010-2011			
United Kingdom	2014-2016			
Slovakia		2002-2015		

Source: EC, 2020.

3.2.3.2.1. General Government Expenditure Rules

Expenditure rules within the scope of the general government are applied in 11 EU countries. In Austria, Bulgaria, Spain, Lithuania, Croatia, the Netherlands, and Poland, rules with a legal basis in ordinary law implementation, while in Austria, Bulgaria, Denmark, Italy, the Netherlands, and Romania, expenditure rules with a legal basis that are constitutional or higher than ordinary law. Rules whose legal basis is coalition agreement can be found in Slovenia and the Netherlands. In Austria, Bulgaria, Denmark, Lithuania, Croatia, the Netherlands, and Romania, there is an independent agency among the

³⁴ “2008-2014: The annual growth rate of the planned state budget appropriations may not be greater than 0.5% of the average growth rate of the state budget revenue over the preceding five calendar years if the GG budgets showed a deficit on average over the last five years.

2015-2020+: Appropriations that exceed 3% of GDP at current prices must be based on the provision that, if the arithmetic average of general government sector balance indicators over the previous five complete years is negative, the aggregate growth of these budgets' appropriations (except for net EU fiscal support) must not exceed 1/2 of the average multi-annual growth rate of potential GDP at current prices.

2015-2020+: Where the arithmetic average of the statistical balance indicators of the general government sector for the past five complete calendar years as known at the time of the drafting of the state budget or drafting of amendments to the state budget is deficit (net borrowing), the annual growth rate in percentage of the totality of expenditures of the state budget, Social Insurance Fund budget, and health insurance fund budget should not exceed one half of the average multiannual growth rate in percentage of potential GDP (EC,2020).”

³⁵ Social security expenditure rules are the same as central government rules in Lithuania in 2015-2020+.

³⁶ 1996-2009: Nominal expenditure ceiling for CG and extra-budgetary old-age pension system targeted.

2010-2020+: Except for expenses for interest on the central government debt, all budgetary items for the central government are subject to the expenditure ceiling. Additionally, the expenditure ceiling also includes off-budget spending for the old-age pension system. Social security expenditure rules are the same as central government rules in Sweden in these periods (EC, 2020).

monitoring bodies of spending rules. Monitoring the spending rule applied in Poland rests with the Ministry of Finance, the Court of Accounts, and the national parliament. The finance ministry monitors the rules in other countries where the spending rule is used. While 9 of the 12 EU countries that have a spending rule apply restrictions on nominal expenditures, two countries have rules on real expenses.

3.2.3.2.2. Central Government Expenditure Rules

Expenditure rules applied within the scope of the central government are seen in 9 EU countries and are generally implemented by coalition agreement. Belgium, Germany, Sweden, and Finland have rules based on coalition agreements, while Slovakia, Lithuania, Italy, and Ireland have rules based on ordinary law. In Spain, on the other hand, a spending rule has been implemented since 2012 with a political commitment. The rule states that the average medium-term GDP growth rate (over ten years) cannot be exceeded by the nominal annual growth rate of an eligible expenditure and is monitored by the national parliament, ministry of finance, and government. There is no independent agency among the bodies responsible for monitoring the spending rules applied in Germany, Ireland, and Italy. While the rules established by limiting real expenditures are seen in Belgium and Finland, rules on nominal expenditures are introduced in other countries.

3.2.3.2.3. Local Government Expenditure Rules

Only in Italy, Spain, and Bulgaria are spending rules applied at the local government level. The legal basis for the expenditure rule implemented in Italy between 1999 and 2006, followed by the Ministry of Finance, is ordinary law. The rules applied in the form of limiting the growth rate of nominal expenditures in all three countries are monitored by the ministries of finance. The other monitoring bodies of the rule, which has existed in Spain since 2012, are the government and an independent institution. The legal basis of the rules in Bulgaria and Spain is higher than constitutional or ordinary law.

3.2.3.2.4. Social Security Related Expenditure Rules

At the social security level, spending rules apply in Belgium, Sweden, and Lithuania. While the monitoring body of the fiscal rule in Belgium, whose legal basis is ordinary law

and which was created within the scope of a constraint on the growth rate of real expenditures, was the ministry of finance the process until 2015, then it was the government and an independent body. The rule applied until 2015 is that the federal government's actual growth in health spending should be less than or equal to 4.5%. As of 2016, this rate has been reduced to 1.5 %. The rule applied in Sweden between 1996 and 2009 is the target nominal expenditure ceiling for the extra-budgetary old-age pension system. The legal basis for the rule is the coalition agreement, and all bodies monitor it without an independent institution. The rule implemented since 2010 is that the expenditure ceiling also covers extra-budgetary expenditures in the old-age pension system in Sweden. The legal basis of the relevant rule is higher than the constitutional or ordinary law, and the monitoring body is the ministry of finance and an independent body. In Lithuania, two different spending rules have been applied since 2015. The first rule, whose legal basis is higher than constitutional or ordinary law, is: Appropriations that exceed 3% of GDP at current prices must be based on the provision that, if the arithmetic average of general government sector balance indicators over the previous five complete years is opposing, the aggregate growth of these budgets' appropriations (without net EU fiscal support) cannot exceed 1/2 of the average multi-annual growth rate of potential GDP at current prices. The other rule, whose legal basis is ordinary law, is as follows: In some cases, the ratio of the annual growth of the state budget to the sum of the expenditures of the Social Insurance Fund budget and the health insurance fund budget should not exceed half of the average multi-year growth rate as a percentage of potential GDP.

3.2.4. Revenue Rules in EU Countries

When we look at the income rules in EU countries, as can be seen from Table 3.8, they are applied only in six countries. The legal basis for the rules in Belgium, Denmark, and the Netherlands is the coalition agreement. However, the legal basis of the rule applied in the Netherlands between 1994 and 1997, and the rule that started being implemented in 1998 until 2015 is the coalition agreement. As a result of the changes made to the rule after 2016, the legal base has become higher than constitutional or ordinary law. The legal basis for the revenue rules applied in the other three countries is ordinary law.

At the point of monitoring compliance with the rule, it is seen that an independent body is watching only two countries. The body responsible for monitoring the rule stating

that the pre-allocation of tax revenues higher than the projected amount will be determined by the central government in France between 2006 and 2008 is an independent institution. The rule, which states that unexpected tax revenues will be used to reduce the budget deficit, has been implemented in France since 2009 and is monitored by the national parliament. The legal basis of the rule is ordinary law. In addition, the monitoring body of the rule, which states that the excess income applied between 2008 and 2014 within the scope of the central government in Lithuania will be used to close the current year's deficit, is an independent institution. In revenue rules applied in other countries, monitoring bodies may vary between the government, national parliament, and finance ministries.

Table 3.8. National revenue rules in EU countries, as of 2020.

Country	Revenue Rules			
	G.G.	C.G.	L.G.	S.S.
Belgium		1992-1999		
Denmark	2001-2010			
Finland				1999-2020+
France		2006-2008 2009-2020+ ³⁷		
Lithuania		2008-2020+		
Netherlands	1994-1997 1998-2020+ ³⁸			

Source: EC, 2020.

3.3. Fiscal Councils in EU Countries

Fiscal discipline has become crucial for countries since the 2008 global economic crisis. In this context, fiscal rules and councils are the two main tools to establish fiscal discipline. The effectiveness of fiscal rules is an essential consideration in achieving desired goals. The rules applied before the crisis did not give the expected results regarding

³⁷ 2006-2008: Ex-ante allocation of higher than anticipated tax revenues will be determined by the central government.

2009-2020+: Any unexpected tax revenue that is received is to be used to close the budget deficit.

³⁸ “1994-1997: Additional tax increases are offset by tax relief, and the opposite is also true.

1998-2020+: The revenue rule only applies to policy measures in order to enable automatic stabilization. This means that any time a specific tax is decreased, there should be an increase in taxes elsewhere. Tax revenue that is low due to a downturn in the economy is irrelevant to the revenue rule. This setback would be absorbed by the government deficit, thus allowing automatic stabilization to work.

When the actual EMU balance demonstrates compliance with the medium-term objective set forth in the Stability and Growth Pact and a multiyear surplus is present at the time of the revenue-side decision-making in August, then 50% of the surplus shall be allotted to the repayment of the national debt (EC, 2020).”

flexibility. In addition, since the pre-crisis fiscal rules restricted discretionary fiscal policies, many countries sometimes acted against the rules to maintain stability. Such situations have led to criticism that fiscal rules cannot work effectively in times of crisis. Following the 2008 global economic crisis, the rules were designed to be more flexible and called the second-generation fiscal rules, which have been renewed to ensure efficiency. Moreover, in this period, fiscal councils that support the fiscal rules came to the fore. From the point of view of the effectiveness of fiscal rules, more flexible fiscal rule applications, transparent fiscal policies, and support of the rules by the fiscal councils are critical. Fiscal councils have come to the fore as the authorities that will monitor the fiscal rules within the scope of the SGP reforms, prepare and present reports on fiscal performance independently to ensure transparency, and aim to establish fiscal discipline. Two potential caveats have been raised in recent years to fiscal rules aimed at protecting government investment in the past. These caveats are that fiscal rules interfere with government spending allocations and the difficulty of following the rules. These warnings can be mitigated if the rules are fixed at the European level and designed to focus on jointly agreed investment priorities. In addition, a sustainable medium-term fiscal position can be maintained when financial councils support an effective monitoring regime implemented by the EC. It can also help ensure that investments are carefully targeted and implemented (Thygesen et al., 2021).

Table 3.9 contains information on fiscal councils established in EU countries. There are 29 fiscal councils in 28 EU countries and no fiscal councils in Poland, although there are two councils in Belgium and the Netherlands. As can be seen from the table, the fiscal councils located in the Netherlands, Denmark, and Austria are the oldest instances. On the other hand, while the establishment of High Council of Finance in Belgium dates to the 1930s, 1989 is included in the table since it underwent an essential and wide-ranging reform in this year.

Table 3.9. Fiscal Councils in EU Countries

Country	Fiscal Council's Name	Year of Foundation
Austria	Fiscal Advisory Council	1970
Belgium	High Council of Finance - Public Sector Borrowing Section-Federal Planning Bureau	1989-1994
Bulgaria	Fiscal Council	2015
Cyprus	Fiscal Council	2014
Czech Republic	The Czech Fiscal Council	2017
Germany	Independent Advisory Board to the German Stability Council	2013
Denmark	Danish Economic Council	1962
Estonia	Fiscal Council	2014
Greece	Parliamentary Budget Office	2010
Spain	Independent Authority of Fiscal Responsibility	2014
Finland	National Audit Office of Finland	2013
France	High Council of Public Finance	2013
Croatia	Fiscal Policy Commission	2013
Hungary	Fiscal Council	2009
Ireland	Irish Fiscal Advisory Council	2011
Italy	Parliamentary Budget Office	2014
Lithuania	National Audit Office	2015
Luxemburg	National Council of Public Finance	2014
Latvia	Fiscal Discipline Council	2014
Malta	Malta Fiscal Advisory Council	2015
Netherlands	Netherlands Bureau for Economic Policy Analysis- Raad van State	1945-2014
Portugal	Portuguese Public Finance Council	2012
Romania	Fiscal Council	2010
Sweden	Swedish Fiscal Policy Council	2007
Slovenia	Fiscal Council	2015
Slovakia	Council for Budget Responsibility	2012
United Kingdom	Office for Budget Responsibility	2010

Source: IMF, 2021.

Figure 3.2 provides information on the number of councils established in the EU and other countries before and after 2008. While there were six fiscal councils in the EU before the 2008 global economic crisis, 23 new fiscal councils were established after 2008. While the effects of the 2008 economic crisis continued, the 2010 European debt crisis in the EU raised concerns about fiscal discipline. Of the 23 fiscal councils established after 2008, one was established in 2009, 3 in 2010, and 19 after the 2010 debt crisis. This is a clear indication

that EU countries have turned to fiscal councils to establish fiscal discipline and to have a disciplined fiscal performance after the crises.

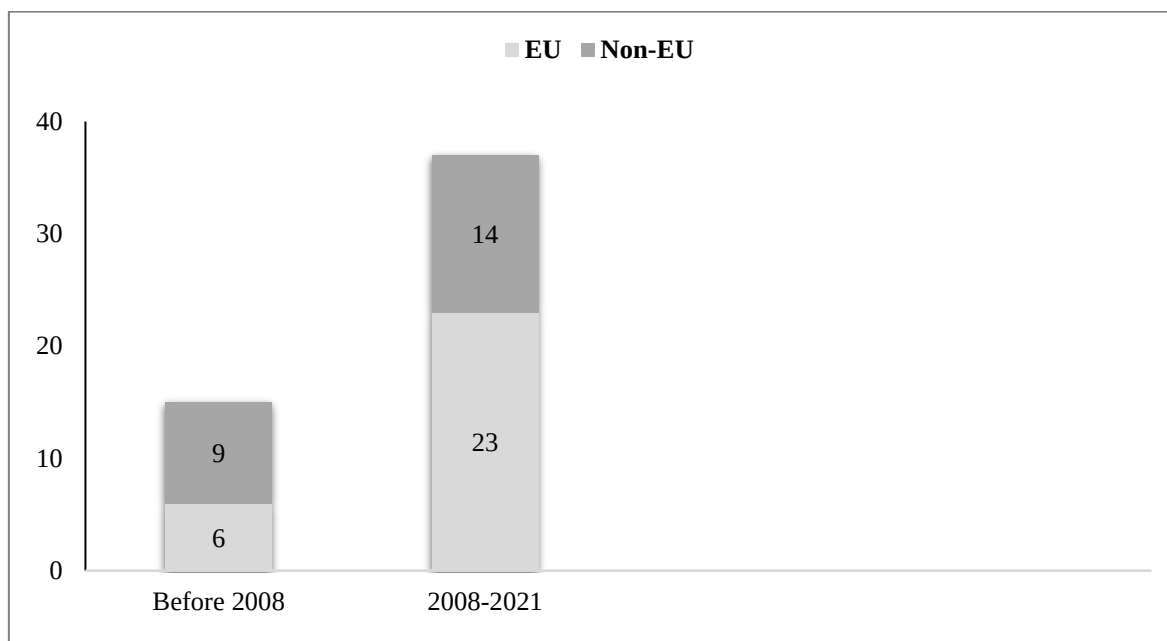


Figure 3.2. The number of fiscal councils in EU and Non-EU countries

Source: IMF, 2021.

3.3.1. The Remits of Fiscal Councils in the EU

The powers of the fiscal councils in the EU are grouped under six main headings: ensuring fiscal policy coordination, having authority beyond fiscal policy, making normative analysis, positive analysis, ex-ante analysis, and ex-post analysis. Figure 3.3 shows the remit distribution of 29 fiscal councils. Ex-ante analysis remit is divided into seven tasks and will therefore be examined in a separate figure. As seen in Figure 3, 28 of 29 fiscal councils make a positive analysis, and the only council in the EU that does not make a positive analysis is the Italian Parliamentary Budget Office. The two councils that do not have the power to conduct ex-post analysis are the Fiscal Council in Romania and the National Council of Public Finance in Luxembourg. Only three councils provide fiscal policy coordination in the EU: the Austrian Fiscal Advisory Council, the Belgium High Council of Finance, and the Independent Advisory Board to the German Stability Council (IMF, 2021).

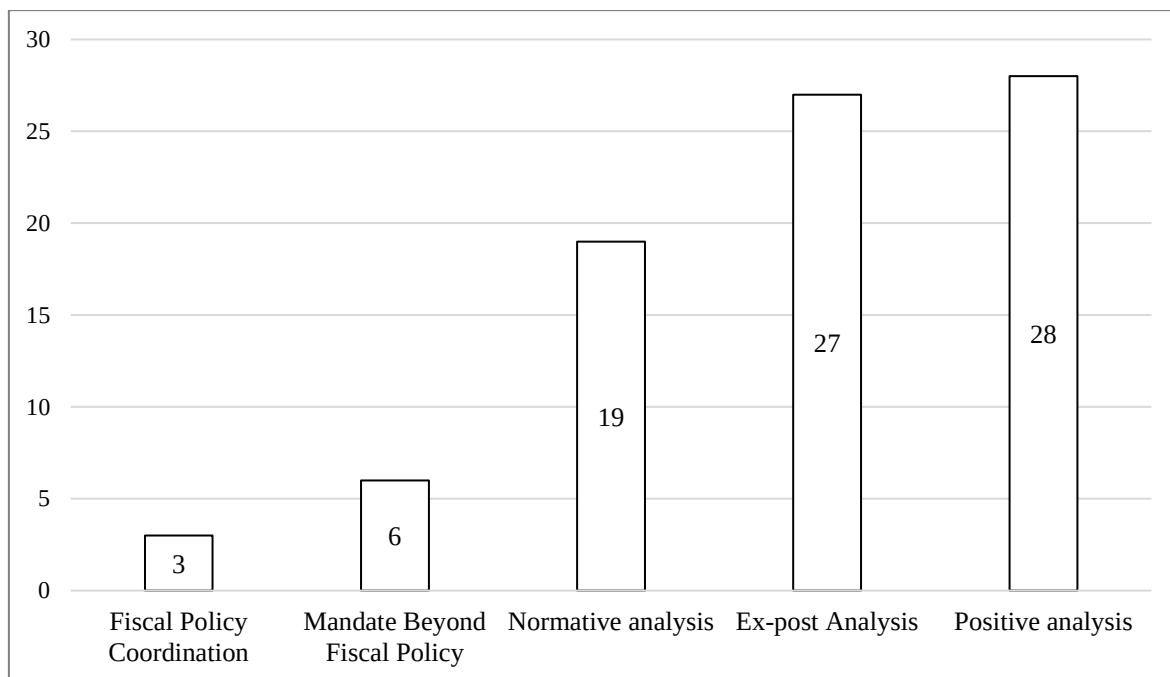


Figure 3.3. The number of the separation of fiscal councils in terms of remits in the EU

Source: IMF, 2021.

The authority to make an ex-ante analysis is divided into seven sub-authorities, as seen in Figure 3.4. The mandate to prepare forecasts includes providing the council with macroeconomic forecasts used for budget projections. Costing of measures is an authority of the council to be tasked with ensuring the amount and cost of the short-term or long-term effects of measures and reforms affecting the public finances. In addition to preparing estimates and costing measures, councils may also be authorized to give advice and evaluate estimates. Analyzing long-term sustainability issues is another ex-ante analysis mandate. The council evaluates the government's budgetary and fiscal performance regarding fiscal targets and strategic priorities, in line with objectives, referred to as "optimality" in previous datasets. Under this mandate, the council focuses on consistency with objectives beyond fiscal rules. Finally, through this authority given to the councils in the form of monitoring compliance with the fiscal rules, the fiscal councils are in a complementary position to the fiscal rules.

The fact that 27 of the 29 fiscal councils in the EU monitor the fiscal rules indicates that the complementarity between the tools used to strengthen the fiscal framework is vital in-country practices. The reason why the authority to prepare estimates is seen only in 9 fiscal councils can be considered as the fulfillment of this authority by the other independent institutions in the countries.

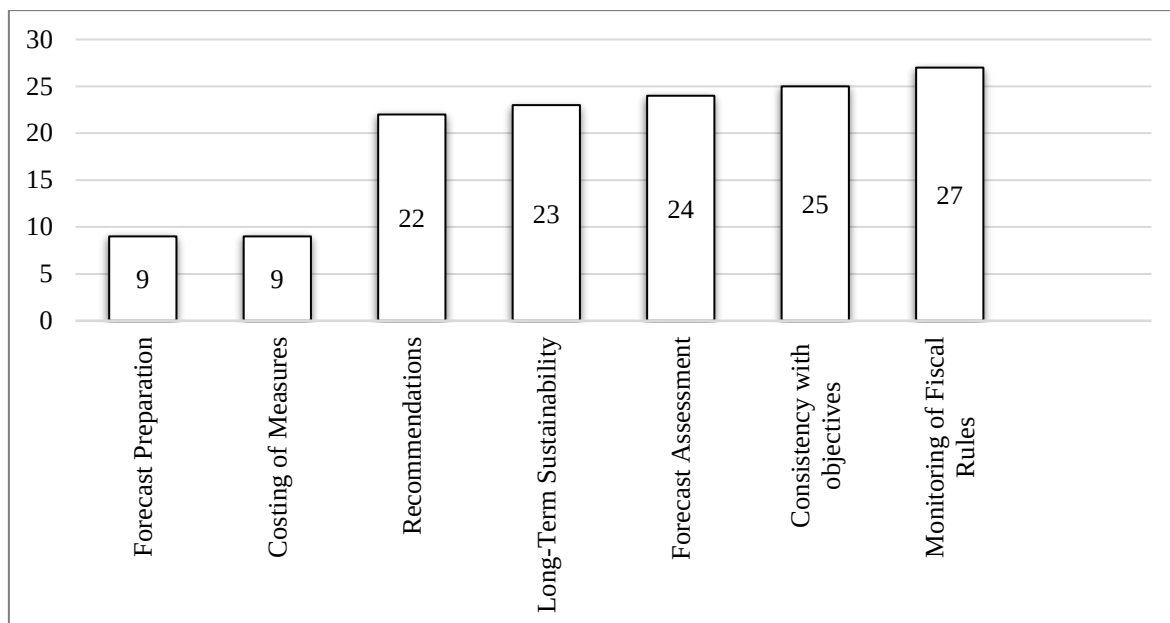


Figure 3.4. The number of the separation of fiscal councils in terms of ex-ante analysis in the EU

Source: IMF, 2021.

Table 3.10 shows which tasks the 29 fiscal councils undertake within the scope of the ex-ante analysis authority. One of the two fiscal councils in Belgium and the Netherlands monitors fiscal rules, while the other does not. The Federal Planning Bureau in Belgium and the Netherlands Bureau for Economic Policy Analysis are councils that do not have the duty to monitor fiscal rules. Councils preparing estimates are in a total of 9 EU countries: Austria, Belgium, Bulgaria, Denmark, Spain, Hungary, the Netherlands, Romania, and the UK. The majority of fiscal councils that do not prepare estimates are due to the fact that, in some countries, different independent institutions undertake this task. For example, in Sweden, there are five independent institutions, and one institution oversees preparing estimates. In Greece, Ireland, Italy, Lithuania, the Netherlands, Romania, Slovenia, Slovakia, and the United Kingdom, fiscal councils have the authority to cost the measures. Councils that do not make recommendations are in Belgium, France, Italy, Lithuania, the Netherlands, Portugal, and the United Kingdom. Councils that do not undertake long-term sustainability analysis are in Estonia, France, Croatia, Hungary, Ireland, and Luxemburg. In contrast, fiscal councils that do not undertake forecasting assessments are located in Belgium, the Czech Republic, Croatia, and the Netherlands. Within the scope of consistency with the targets, the councils that do not evaluate the government's budget and fiscal performance concerning the fiscal targets and strategic priorities are in Belgium, Germany, Croatia, and Slovenia.

Table 3.10. Ex-ante analysis of Fiscal Councils in 28 EU Countries

Country	Forecast Preparation	Forecast Assessment	Recommendations	Long-Term Sustainability	Consistency with objectives (beyond fiscal rules)	Costing of Measures	Monitoring of Fiscal Rules
Austria	1	1	1	1	1	0	1
Belgium	0-1	0-1	1-0	1-1	0-1	0-0	1-0
Bulgaria	1	1	1	1	1	0	1
Cyprus	0	1	1	1	1	0	1
Czech Republic	0	0	1	1	1	0	1
Germany	0	1	1	1	0	0	1
Denmark	1	1	1	1	1	0	1
Estonia	0	1	1	0	1	0	1
Greece	0	1	1	1	1	1	1
Spain	1	1	1	1	1	0	1
Finland	0	1	1	1	1	0	1
France	0	1	0	0	1	0	1
Croatia	0	0	1	0	0	0	1
Hungary	1	1	1	0	1	0	1
Ireland	0	1	1	0	1	1	1
Italy	0	1	0	1	1	1	1
Lithuania	0	1	0	1	1	1	1
Luxemburg	0	1	1	0	1	0	1
Latvia	0	1	1	1	1	0	1
Malta	0	1	1	1	1	0	1
Netherlands	1-0	0-0	0-1	1-1	1-1	1-0	0-1
Portugal	0	1	0	1	1	0	1
Romania	1	1	1	1	1	1	1
Sweden	0	1	1	1	1	0	1
Slovenia	0	1	1	1	0	1	1
Slovakia	0	1	1	1	1	1	1
United Kingdom	1	1	0	1	1	1	1

Source: IMF, 2021.

3.3.2. An Overview of Fiscal Councils in EU Countries

The establishment of fiscal councils cannot adhere to a uniform model due to the varying institutional structures, traditions, historical experiences, and policy issues across

different countries. These unique characteristics necessitate the adoption of different institutional arrangements, as it is essential to consider the specific context of each country to ensure the success of a fiscal council.

3.3.2.1. Belgium

Two fiscal councils in Belgium undertake different tasks. While the High Council of Finance makes normative assessments of fiscal policy, the Federal Planning Bureau is responsible for making macroeconomic forecasts.

The High Council of Finance, the oldest fiscal council, dates back to the 1930s and has undergone numerous reforms. The Council passed a broad constitutional reform in 1989 as part of the fiscal decentralization reform (Curristine et al., 2013). This council, which was established to coordinate the government's fiscal policies and secure macroeconomic stability, publishes two reports a year. The first report is being prepared in March and includes the evaluation of the internal stabilization program of the past year. The second report, on the other hand, consists of the analysis of the borrowing requirement of local governments, the evaluation of the budget policy to be adopted, and the recommendations regarding the budget balances, which will be prepared in June. Consisting of 12 senior executive members and five other members, the council chairman is an academic, and members are appointed for renewable terms of office every five years. During the reform period of the Council in 1989, the budget deficit and public debt stock were notable fiscal policy problems in the country. One of the council's tasks was to monitor the convergence plan (reducing the budget deficit below 3% of GDP following the Maastricht Criteria) implemented by the government until 1996. During this task, the council's recommendations, which contributed significantly to the fiscal consolidation, regarding the budget deficit recommendations were considered (Debrun et al., 2009). The reason for the weakening of the influence of the High Council of Finance on fiscal policy in the early 2000s was that after the adoption of the Euro, limitations on the council's legal and operational independence affected the council's work. As a result of the council's criticism of government policies, the low media influence in this period reduced the council's effectiveness. However, by the end of the 2000s, the council played an essential role in the budget process, determined the targets for the consolidation plan, and continued its effects on independent analysis (Curristine et al., 2013).

The other fiscal council in Belgium, the Federal Planning Bureau, which has a high media influence, consists of a top executive and 90 other members. The top manager is appointed on a renewable basis for nine years. The High Council of Finance does both positive and normative analysis, but the Federal Planning Bureau does only positive analysis.

3.3.2.2. Hungary

Hungary's requirement for a fiscal council arose from the marked deterioration in the country's public finances since 2000. With the effect of the election cycle, common pool and time inconsistency problems affected the fiscal performance negatively, and the budget deficit rose along with the country's public debt stock. Hungary became the country with the highest budget deficit in the EU in 2006, while the ratio of public debt stock to GDP was 51.7% in 2001; it increased to 80.12% in 2010. The decline in the credibility of the country, output volatility, the continuous increase in budget deficits and debt stocks, and deterioration in fiscal transparency caused a broad contraction (Kopits, 2011). Following these events, the Hungarian Ministry of Finance first announced the draft law in summer 2007 calling for the adoption of fiscal rules and an independent parliamentary office. Subsequently, the government enacted the Fiscal Responsibility Act in November 2008, a prescriptive fiscal policy framework based on fiscal transparency standards and includes a fiscal council.

There were two competing proposals for the fiscal council to be established in Hungary. The first of the proposals was the Swedish Financial Policy Council, which received technical support from the state court of accounts with limited resources and functions. The other proposal was the US Congressional Budget Office, which has substantial resources and functions, is attached to the parliament, and has a relatively large staff. As a result, a fiscal council was established with features close to the US Congressional Budget Office. However, although the new law contained concessions, the council could not get the support of the main opposition party (Curristine et al., 2013). The law called for the creation of the Fiscal Council, an organization with a technical staff but without the power to compel compliance with its assessments. The Council consisted of three people: the President of the Republic, the Governor of the National Bank of Hungary, and the President of the State Audit Office. They had to be chosen by a simple majority in Parliament after hearings in the Budget and Finance Committee (Kopits, 2011).

While the council, which underwent a considerable change in authority in 2010, has yet to have the authority and fiscal policy coordination features beyond the fiscal policies, it has the authority to ex-post analysis. While it does not have the authority to make long-term sustainability analysis and costing measures, which is one of the preliminary analysis authorities. It has powers to monitor compliance with fiscal rules, prepare and evaluate forecasts, and assess the government's budget and fiscal performance about fiscal targets and strategic priorities (IMF, 2021). Council management members consist of three people and can be appointed for renewable terms of office every six years. The council, which has a high media impact, presents reports to the public.

3.3.2.3. Sweden

With a significant financial crisis in the early 1990s, Sweden overcame the problem with a successful consolidation program. The consolidation program included expenditure ceilings for the central government, the balanced budget rule for local governments, a top-down approach for the central government budget, and the surplus target for net government loans, and it was successful. The Swedish budget, which had a high budget deficit in the first half of the 1990s, had a surplus in 1998. In 2007, the ratio of budget balance to GDP was 4.12%. From this point of view, it is concluded that the fiscal council established in Sweden was not formed because of the deterioration in fiscal discipline, but on the contrary, in a period when public finances were sound. In Sweden, the need for a fiscal council was first raised in the debate on whether or not to join the euro. The commission proposed the creation of an independent fiscal council to advise the government and help avoid lax policies, but the proposal was rejected by the social democratic government. After the election in 2006, the Swedish Fiscal Policy Council was established by the Ministry of Finance in the liberal-conservative government in 2007 (Calmfors & Wren-Lewis, 2011).

The authority to prepare estimates from the ex-ante analysis powers is outside the remit of the Swedish Fiscal Policy Council. This can be explained by the fact that the National Institute of Economic Research in the country has an essential reputation for preparing independent forecasts. There are different institutions in the country that are dramatically independent of the government. Relevant institutions have undertaken the duties that the council can also do. Independent fiscal institutions in the country can be listed as follows:

- i. The Government Offices of Sweden (Regeringskansliet)
- ii. National Institute of Economic Research (Konjunkturinstitutet)
- iii. Parliamentary Committee on Finance (Finansutskottet)
- iv. The Swedish Financial Supervisory Authority (Finansinspektionen)
- v. The Swedish National Audit Office (Riksrevisionen)
- vi. The Swedish National Financial Management Authority (ESV)

The number of high-level management members of the council, established in 2007, is 6, and the number of other members is 6. High-level management members are appointed for three years and are renewable (IMF, 2021).

The Swedish Fiscal Policy Council has quite limited resources. Regarding the minimal resources in terms of sustainable activities, it is remarkable that the council has succeeded in being an independent watchdog with an active voice by making normative analyzes and trying to keep the media influence high. The Swedish Fiscal Policy Council not only focuses on long-term sustainability issues but also evaluates fiscal policy from a cyclical perspective.

The Parliamentary Finance Committee prepares the general principles of fiscal policy, adopting the central government budget and the spending limits. In addition, a public hearing on the report of the Swedish Fiscal Policy Council is held annually by the committee. Responsible to the Ministry of Finance, the Swedish Fiscal Supervisory Authority promotes stability and efficiency in the fiscal system and provides effective consumer protection. It is also in charge of supervising all companies operating in the Swedish financial markets. The Swedish National Fiscal Management Authority is affiliated with the Ministry of Finance and develops effective financial management for central government institutions, analyzes central government finances, and makes forecasts (Swedish Fiscal Policy Council, 2023). The fiscal council fills a gap in this area, and it can focus on more general judgments with heavier academic input (Calmfors, 2010). The council also provides an independent evaluation of government fiscal policy (Curristine et al., 2013).

3.3.2.4. Netherlands

There are two fiscal councils in the Netherlands, the first of which is the Netherlands Bureau of Economic Policy Analysis. Inspired by the financial crisis of the 1930s, the Bureau's establishment was proposed, not aiming to contribute to the policy preparation for

the recovery of the Dutch economy after World War II (EC, 2006). While Willem Drees was the minister of social affairs, he proposed the establishment of this council on September 3, 1945, and work began on September 15, 1945. The council's legal basis was achieved with the law on preparing a central economic plan on April 21, 1947. Although the Bureau is officially affiliated with the Ministry of Economy, it has an autonomous character (EC, 2012). The Central Economic Plan, published by the bureau every spring, describes the economic situation (CPB, 2023). The Bureau regularly publishes the macroeconomic view (MEV) every September when the budget is presented to the parliament. In addition to these two forecast documents, some updates are provided throughout the year (EC, 2006). The CPB Board consists of three members, one director, and two assistant directors. The government appoints the director, while the high-level management members are appointed on a 7-year and renewable basis. Apart from the top managers, it differs from other councils with 117 members (IMF, 2021).

While the Bureau's primary responsibilities are to provide medium-term or long-term independent macroeconomic and budgetary forecasts, it performs many other tasks. Other duties include conducting analyzes of the welfare state, labor market, and international economics, conducting cost-benefit analyzes of large-scale public projects, analyzing the impact of the aging population on Dutch public finances, and regularly assessing whether government policy is consistent with current policy objectives and rules. Although its mandate is quite comprehensive, it does not publish normative statements about goals and approaches. It does not formulate policy recommendations (Hagemann, 2010). The office's independence can be attributed to more than one factor. These factors include funding from public sources, independence from political interference, and giving transparency a high priority. With the Director regularly testifying before the Parliamentary Economic Affairs Committee and substantial media coverage of all the bureau's work, the CPB stands out as an institution that has been fully integrated into the policy-making process for decades while maintaining its solid reputation for professionalism and objectivity in its analysis. This aspect of the CPB is considered “best practice” by the IMF (IMF, 2006). In addition, the government has designated the CPB as an independent national estimator in the Fiscal Compact and Two-Package (EC, 2017).

In line with to Article 3 of the Law Concerning the Preparation of a Central Economic Plan of 1947, "It is the task of CPB Netherlands Bureau for Economic Policy Analysis to

perform all the work required in preparing an annual Central Economic Plan for the coordination of economic, social and financial government policy which will subsequently be formalized by the government, as well as to issue advice on general questions that may arise with regard to the realization of that plan” and on the other hand, Article 2c of Sustainable Public Finances Act of 2013 states that “Budgetary policy is conducted based on multiannual figures and the macroeconomic projections of the relevant variables of CPB” (CPB,2023).

Raad van State, the second fiscal council in the Netherlands, was established in 2014 and conducted both normative and positive analyses. The council, which does not have forecast preparation and evaluation duties, has the mandate to advice on the jurisdiction of the Bureau of Economic Policy Analysis. In the council, which consists of five high-level management members and 16 other members, senior managers take office with a non-renewable appointment. Also, Raad van State, unlike the Bureau of Economic Policy Analysis, has a low media impact (IMF, 2021).

3.3.2.5. Austria

Established in 1970 in Austria, the Fiscal Advisory Council was reformed in 2002 and 2013. There are 15 high-level management members on the council, and top executive members are appointed on a six-year renewable basis. In addition, six other members are included in the council (IMF, 2021). Every year, an annual report is presented by the Council, as well as a report on a fiscal rule is published. The duties of the Fiscal Advisory Council can be listed as follows (Fiskalrat, 2023).

- i. Evaluation of the financial policy situation with a preview
- ii. Analyzing the economic effects of the national debt
- iii. Analyzing the sustainability and quality of the budget policy
- iv. Making written recommendations on fiscal policy and medium-term budget direction
- v. Monitoring compliance with national and EU fiscal rules
- vi. Regular evaluation of local institutions' forecasts
- vii. Active participation in national and international forums

Academics and policy experts are included in the composition of this council, which has a high media influence. With a decision taken in 2021, a three-year sustainability report was published. The fiscal sustainability report published in September 2021 forms the basis for assessing risks to long-term debt sustainability (Fiskalrat, 2021).

3.3.2.6. Ireland

The Irish Fiscal Advisory Council was established in July 2011 as part of the institutional response to mitigate the adverse effects of the global crisis and improve fiscal sustainability. In Ireland, the problems in the private banking system and the economic deterioration after the crisis increased the sensitivity of the budget deficits and tax revenues in the same period. Unable to access international bond markets, Ireland requested financial aid from the IMF, ECB, and EC. In return for financial support, Ireland agreed to set up a fiscal council to independently assess the government's budget position and macroeconomic forecasts. The Council was formally established as an independent statutory body through the Financial Responsibility Act (FRA), which was enacted in December 2012 (Nicol et al., 2021).

The council, which has a high media influence, has five high-level management members who serve for four years on a renewable appointment. Also, the number of other members in the council is three (IMF, 2021). The president of the council was appointed by the Minister of Finance, while the council also decided to establish the role of vice-president unofficially.

The Council prepares a strategic plan quarterly and evaluates its progress accordingly. FRA states that the council should make a report an annual report on its activities during the year. The arranged report is given to the Minister of Finance, and a copy is given to the parliament (Nicol et al., 2021). The Council prepares a fiscal evaluation report twice a year. A report on the budget rule evaluations is prepared once a year. Pre-budget tables are also prepared every year. The Stand-Still Scenario is an explanatory exercise that estimates the cost of maintaining the current level of utilities and real benefits in the medium term. This scenario, which was prepared in 2018 and 2019, was prepared as a long-term sustainability analysis report in 2020 and has been included in the fiscal evaluation report since 2021.

3.3.2.7. Others

When an overall assessment of other fiscal councils in the EU is made, it is seen that only the fiscal councils in Bulgaria, Croatia, and Germany have a low media impact. Italy is the only country where no positive analysis is made; however, eight fiscal councils³⁹ make no normative analysis. The legal obligation to share the information necessary for the activities of the fiscal council does not exist for the Bulgarian and Danish fiscal councils but is available for other fiscal councils (IMF, 2021).

Whether high-level members are appointed in a renewable form of appointment is crucial. Looking at councils in Italy, Portugal, Romania, Slovakia, and France, high-level management members take office on a non-renewable basis. On the contrary, high-level management members in other countries take office on a renewable form of appointment. High-level management member numbers vary from council to council. When we look at the councils that are not examined in detail in the sub-headings above, it is observed that the term of office of these members varies between four years and seven years⁴⁰ Only in Romania these members are appointed for nine years. The number of relevant members varies between 1 and 11, while the number of members in Denmark is 26. Viewing the number of other members, it is seen that Portugal has the highest number of members with 150 other members. The fiscal council, with 140 other members, is the fiscal council operating in Finland. The fiscal council in Spain has 31 other members, and the fiscal council in Denmark has 20 other members. Fiscal councils are in Croatia, Luxemburg, Malta, and France without any other members (IMF, 2021).

³⁹ Croatia, Estonia, France, Germany, Italy, Portugal, Romania, United Kingdom.

⁴⁰ Four years: Cyprus, Luxemburg, Malta.

Five years: Croatia, Estonia, Germany, Greece, Lithuania, Slovenia, France, and the United Kingdom.

Six years: Bulgaria, Denmark, Finland, Italy, Latvia, and Spain.

Seven years: Portugal and Slovakia.

4. ANALYSIS OF THE IMPACT OF FISCAL RULES AND COUNCILS ON FISCAL PERFORMANCE IN EU COUNTRIES

4.1. Theoretical Literature

Fiscal discipline is a balance between public revenues and expenditures as a requirement of fiscal responsibility morality. Permanence is a significant fiscal discipline issue, requiring governments to maintain their fiscal positions compatible with macroeconomic stability and sustainable economic growth (Kumar & Ter-Minassian, 2007). Fiscal discipline is also crucial for the efficiency of public finances.

Fiscal performance is the budget discipline that requires governments to maintain their fiscal positions supporting macroeconomic stability and sustainable growth. According to Musgrave (1964), the important thing about fiscal performance is the changes made in the budget positions according to the changes in GNP. Key elements of fiscal performance are public revenues, budget balance, public debt, and public expenditures. Fiscal discipline is a concept related to all these essential elements.

There have been many formal attempts to transform the fiscal discipline, the key to macroeconomic stability, into binding laws (Kopits, 2001). Fiscal rules and fiscal councils emerged and became widespread within the scope of these attempts.

According to Kopits & Symansky (1998), fiscal rules are defined as permanent restrictions placed on fiscal performance indicators. The primary purpose of fiscal rules, which is one of the most critical elements of ensuring fiscal discipline and improving fiscal performance, is to eliminate fiscal indiscipline by controlling the tendency of governments to give excessive deficits by imposing restrictions on the use of policy discretion. Fiscal rules and fiscal councils come to the fore to ensure fiscal discipline and macroeconomic stability, strengthen the fiscal framework and ensure efficiency in public finance. One of the sources of fiscal indiscipline is political factors. Political factors can cause time inconsistency, common pool problems, principal-agent relationship problems, and externality problems. Fiscal rules and fiscal councils aim to may overcome these problems.

Discussions on fiscal rules, which are used to ensure fiscal performance, usually include policy recommendations on how ideal fiscal rules should be and discussions of their

effectiveness. In these discussions about the design of fiscal rules, one group is more concerned with numerical fiscal rules, while the other group focuses on the procedural aspect of fiscal rules (Claeys, 2008). Putting aside this theoretical conflict, there are numerous empirical studies which aim to suggest policy advises alleviating the deficit bias and promote fiscal discipline by preventing the populist policies of policymakers (Bergman et al., 2016). One of these studies puts forward four methods to deal with the deficit bias problem as follows:

- i. Policymakers can be held more accountable for their actions (Corbacho & Schwartz, 2007).
- ii. Budgetary procedures can be improved (Von Hagen & Harden, 1995).
- iii. Some aspects of fiscal policy can be delegated to institutions that are not under political pressure (Wyplosz, 2005).
- iv. Ex-ante fiscal rules can be introduced to limit the discretion of the fiscal authorities (Krogstrup & Wyplosz, 2007).

Using political economy models of deficit bias, von Hagen & Harden (1995) and Hallerberg & von Hagen (1999) show that devolving budget decision reduces bias. Primo (2006), using a distributive policy model, shows that budget ceilings reduce deficits. Beetsma & Uhlig (1999) state that fiscal rules can increase welfare in the presence of a deficit bias. Krogstrup & Wyplosz (2006) state that an international fiscal rule improves welfare compared to a national fiscal rule, but both rules dominate the ruleless situation. They also point out that they need to be combined with a local fiscal institution to eliminate fiscal rules' deficit bias. Some authors have argued that institutional structures are important for the effectiveness of fiscal rules. Foremny (2014) found that the rules' effectiveness depends on the government's constitutional structure. Iara and Wolff (2014) state that the rules' most significant dimension is their legal basis and enforcement mechanisms. Krogstrup and Wyplosz (2010) emphasize the deficit ceiling with fiscal institutions. As von Hagen (2010) points out, fiscal councils can help strengthen the credibility of medium-term fiscal rules, but only where the government initially has substantial commitment power. Thus, a fiscal council may be redundant where there is a strong political commitment or ineffective where it is not.

In the theoretical literature, it is accepted that fiscal rules and fiscal councils improve fiscal performance by reducing deficit bias. It has been argued that fiscal councils contribute

to improving fiscal discipline and fiscal performance by increasing the credibility of fiscal rules. It is stated that more effective results can be achieved in eliminating deficit bias when fiscal councils are supported by fiscal rules.

4.2. Empirical Literature

In addition to theoretical debates, empirical studies examine the relationship of fiscal rules with fiscal discipline and performance, as well as the effectiveness of fiscal rules. According to the literature, studies in this context mainly focus on European countries, OECD countries, and the United States of America (USA).

The general result of the empirical studies on the fiscal rules of the US states is that fiscal rules are an effective tool in ensuring fiscal performance, fiscal discipline, and macroeconomic stability. Alesina & Bayoumi (1996), in their study of 50 states of the USA, concluded that the budget balance rules positively affected primary surplus and total surplus. By considering the public revenues, public expenditures, budget deficit, and economic growth variables of 47 states of the USA, Bohn & Inman (1996) analyzed the period between 1970 and 1991. Regarding the regression analysis, it was concluded that the fiscal rules reduce the budget deficits and contribute to the provision of fiscal discipline. Fatás & Mihov (2006), using the least squares method and instrumental variable (IV) method for 48 US states between 1990 and 2003, stated that tight budget rules increase macroeconomic stability and fiscal restraints reduce the ability of fiscal policy to respond to output shocks. On the other hand, Rose's (2006) study spans 43 states of the USA from 1974 to 1999. In this study, panel data analysis and the GMM method were used. According to its findings, fiscal rules limit public expenditures, which are increasing due to political reasons in elections.

In the literature, there are empirical studies on OECD countries examining the effect of fiscal rules on fiscal discipline and fiscal performance. Dahan & Strawczynski (2013) analyzed the impact of national budget balance and expenditure rules on the government budget deficits in 22 OECD countries from 1960 to 2010. Using the GMM method, the study concluded that the national budget balance rules and expenditure rules reduce the government budget deficit. Considering the effect of population growth and GDP growth on the budget deficit, population growth increases the budget deficit, while GDP growth decreases it.

In their study covering 21 OECD countries from 1985 and 2012, Sacchi and Salotti (2015) emphasized the stabilizing effects of fiscal rules by using the fixed effects model and GMM method. The study concluded that among the types of fiscal rules, the most effective one is the budget balance rule and the least effective is the revenue rule.

In addition to USA and OECD countries, there are also empirical studies on the effectiveness of fiscal rules in some selected samples of countries. In his research, Tapsoba (2012) analyzed 74 developing countries between 1990 and 2007, using the two-stage least squares method, and concluded that fiscal rules positively affect fiscal discipline. In this study, the structurally and cyclically adjusted primary budget balance to GDP ratio was used as an indicator of fiscal discipline. Furthermore, in their study covering 142 countries between 1985 and 2015, Caselli and Reynaud (2020) examined the effect of fiscal rules on the nominal budget balance. This study used both the OLS and the Instrumental Variable Method. The results of both methods revealed that fiscal rules have a positive impact on the nominal budget balance.

Moreover, many studies examine the fiscal rules of EU countries. Empirical studies commonly prove the effectiveness of fiscal rules in EU countries. The MT and the SGP triggered the application of national fiscal rules in EU countries, and the implementation of fiscal rules has become widespread in these countries.

Lagona & Padovano (2007) used the Nonlinear Principal Component Analysis (NLPCA) method to examine the effect of budget rules on the total deficit, primary deficit, public debt and public expenditures in 12 EU countries for the years 1980 and 2013. The results show that the variable budget rules have a negative impact on all dependent variables. Additionally, public debts are more restricted than public expenditures under budget rules.

Debrun et al. (2008) aimed to study how and in which direction the fiscal rules affect fiscal performance. The analysis covers the period 1990-2005 for 25 EU countries. The cyclically adjusted primary budget balance was chosen, in the study, as the fiscal performance indicator. It was found that the fiscal rules affected fiscal performance positively. The study includes four different models in which the effect of fiscal rules on the cyclically adjusted primary budget balance (CAPB) is analyzed using a fixed effects model. The first model covers 15 EU countries between 1990 and 2005, the second model covers 10 EU countries between 1990 and 2005, the third model comprises 25 EU countries between

1990 and 1998, and the fourth model covers 25 EU countries between 1999 and 2005. As a result of the four models, it was concluded that the fiscal rules had a positive impact on the CAPB, which was used as the dependent variable.

Marneff et al. (2010), using panel regression analysis for Euro area 16 countries between 1995 and 2008, observed significant effects of the current fiscal rules in the Euro area on fiscal balances. It was found that a one-unit increase in the fiscal rule index variable positively affects the fiscal balance, fiscal balance and structural fiscal balance. It was also stated that fiscal rules reduced public expenditures.

Szymańska (2016) analyzed the impact of fiscal rules in 27 EU countries on the cyclically adjusted budget balance (CAB) and CAPB in 2000 and 2012. Pooled OLS, IV-2SLS, LSDV, LSDVC and GMM methods were applied in the study. While fiscal rules positively affect the CAB in all models, their effects on the CAPB are insignificant. A merely pooled OLS model shows that the fiscal rules have a positive impact on the CAPB.

Bergman et al., (2016) used dynamic panel data analysis in their studies, covering the period from 1990 to 2012 for 27 EU countries. In this study, the system GMM method was used, and the overall fiscal rule index and four specific rule indices were used as fiscal rule variables. In this context, the effect of fiscal rules on the CAPB has been analyzed, and as a result, it is seen that multiple fiscal rules have a more substantial affirmative effect than single fiscal rules. The value of the total fiscal rule index also affects the dependent variable positively. While the budget, debt and expenditure rules separately have a positive effect on the dependent variable, no significant relationship is found between the revenue rule and the CAPB. The output gap, debt ratio, dependency ratio, degree of openness, population, inflation, election(dummy), European Monetary Union(dummy) and budget process (dummy) are included in the model as control variables. A statistically significant relationship exists between the dependent variable and the output gap, debt ratio and population control variables. According to the results of the study, while an increase in public debt positively affects the CAPB, an increase in the output gap and an increase in the population has a negative effect on the dependent variable.

Apart from numerical fiscal rules, empirical research has been conducted on the effectiveness of budget procedures in improving fiscal performance, and the overall finding

is that budget procedures significantly affect fiscal performance (Fabrizio & Mody, 2006; Hallerberg et al., 1999; Hallerberg et al., 2007; Von Hagen, 1992).

The negative results of the strict rules with the spread of fiscal rules have triggered the debate of the effectiveness of the rules. Within the scope of the debate on the efficacy of the fiscal rules, changes were made to make the rules more flexibility. The role of fiscal councils has come to the fore in monitoring compliance with fiscal rules. The number of fiscal councils in EU countries has gradually increased with the emphasis on the necessity of fiscal councils within the scope of the amendments made under the SGP. Fiscal councils can help improve fiscal performance through two different channels. First, fiscal councils can limit political interference in the design and execution of fiscal policy. In addition, they can promote sound fiscal policy by raising awareness and informing the public about the actual state of public finances. Second, and more directly, fiscal councils can make technical contributions to the budget process and the execution of fiscal policy. Tasked with providing or evaluating macroeconomic forecasts, fiscal councils can also monitor numerical fiscal rules and support their implementation (Debrun et al., 2013).

Hagemann (2011) studied a small number of country-specific case studies (Belgium, Chile, United Kingdom, and Hungary) comparing fiscal performance indicators before and after the establishment of a fiscal council, and he concluded that effectual fiscal councils are necessary for achieving disciplined fiscal performance. Other studies show that fiscal councils contribute to improved fiscal performance by comparing fiscal performances before and after the establishment of a fiscal council (Lebrun, 2009; Coene & Langenus, 2013).

Căpraru et al., (2020) analyzed the impact of fiscal councils on fiscal performance in their study covering the period from 2000 to 2019 and 27 EU countries. In the research, fiscal balance, primary budget balance, and CAB were used as dependent variables as fiscal performance indicators. As a result of the analysis using the LSDVC method, was found that fiscal councils positively influenced all three dependent variables.

Coletta et al., (2015) investigated how and in what way fiscal councils affect fiscal performance in 11 EU countries, using the pooled OLS and random effects model for the period 2001-2011. The CAB, which is used as a fiscal performance indicator, was found to be associated with the legal status of fiscal councils, how they are financed and their access

to information. It was concluded that the functional characteristics of fiscal councils positively affected fiscal performance.

The focus of the literature has shifted from the effectiveness of fiscal rules to the efficacy of both the fiscal rule and the fiscal council. The empirical literature examining the impact of fiscal rules and councils on fiscal performance is limited. Table 4.1 presents studies analyzing the relationship between fiscal rules and fiscal councils and fiscal performance.

Table 4.1. The empirical literature on the impact of fiscal rules and fiscal councils on fiscal performance

Study	Sample	Dependent variable(s)	Method	Results
Fabrizio & Mody (2006)	1997-2003 10 EU Countries	General government primary budget balance	FE RE GMM	The primary budget balance ratio appears positively correlated with the fiscal institutions index.
Debrun & Kumar (2009)	1990-2004 14 EU Countries (Without Luxembourg)	CAPB	2SLS	Both the fiscal rule and fiscal councils have a positive effect on the dependent variable.
Debrun et al., (2013)	1990-2011 58 Countries (Developed-developing countries)	Primary budget balance	LSDVC dynamic panel estimator	The fiscal rule variable affects the primary budget balance positively. While the variable of the fiscal council is meaningless in the model without the separation of duties, there is a positive effect on the dependent variable when the separation of duties is made.
Nerlich & Reuter (2013)	EU-27, 1990–2012		Dynamic panel estimation	Evidence for an improved balance as well as reduced expenditure when fiscal rules are supported by FCs and MTBSs.
Debrun & Kinda (2017)	58 advanced and emerging countries, 1990-2011	Primary budget balance	LSDVC dynamic panel estimator	Fiscal rules and fiscal councils increase fiscal discipline.
Maltritz & Wüste (2015)	1991–2011 EU 27	Primary budget balance	Pooled OLS FE	Fiscal rules and fiscal councils have a positive impact on the primary budget balance.
Beetsma et al. (2019)	EU-27	Primary budget balance	FE	Fiscal councils and fiscal rules contribute to the improvement of the primary budget balance.
Franek & Postula (2019)	EU-28 2004-2016	General government balance	FE	In the study, it was concluded that there is a positive complementarity between fiscal rules and fiscal councils, which together provide stronger fiscal stability and restore fiscal balance.

Table 4.1. (continued) The empirical literature on the impact of fiscal rules and fiscal councils on fiscal performance

Study	Sample	Dependent variable(s)	Method	Results
Wildowicz-Giegiel (2019)	2006-2017 EU Countries (Without Czech Republic)	CAB	Pooled OLS	Fiscal rule, fiscal institution, and medium-term budget framework index variables positively affect the CAB.
Martins & Correia (2021)	1999-2016 28 EU Countries	CAPB CAPE ⁴¹ CAI ⁴²	LSDV LSDVC IV GMM	While the fiscal rule index is meaningless in the model, the SGP budget rule and the SGP budget rule dummy variables affect the dependent variable positively. At the same time, the MTBF index variable also affects the dependent variable positively.
Dimitra (2021)	1996-2018 PIIGCS and DFGNS Countries	Primary budget balance	FE RE	The fiscal rule and fiscal council variables positively affect the primary budget balance in both country groups.

In a study that aimed at determining the impact of fiscal institutions on the general government's primary budget balance, Fabrizio & Mody (2006) have found that fiscal institutions have a positive effect on the primary budget balance in all methods used. The methods used in the analysis, which included 10 EU countries and covered the period from 1997 to 2003, were FE, RE and GMM. It is seen that the debt-to-GDP ratio, which is one of the variables included in the models as control variables, has a positive effect on the dependent variable in the random effects model. The random effects model's other statistically significant control variables are the inflation rate and the openness index. According to the results of FE analysis, two control variables (unemployment rate and openness index) positively affect the primary budget balance. In the last used method GMM, the openness index was specified to have a positive and significant relationship with the primary budget balance.

Debrun & Kumar (2009) used the two-stage least squares method in their studies covering EU countries (EU-15 excluding Luxembourg) and the period between 1990 and 2004. The control variables in this research are output gap, public debt, government stability index, country-specific dummies (delegation and commitment) and election year dummy variable. One of the most remarkable findings is that fiscal rules are associated with higher fiscal performance and that fiscal councils can affect CAPB through numerical rules. In other

⁴¹ CAPE: Cyclically adjusted primary expenditure.

⁴² CAI: Cyclically adjusted income.

words, it was concluded that fiscal councils contribute to successful implementation of numerical rules. Consequently, the analysis shows a statistically significant and positive relationship between public borrowing and the cyclically adjusted primary budget balance.

Debrun (2013) examined the effect of fiscal rules and established fiscal councils on fiscal performance in 58 developed and developing countries, using the Bias corrected LSDV dynamic panel model in his study. While seven different fiscal council dummy variables were employed to represent the fiscal councils, the fiscal rule index variable was used to reflect fiscal rules. The analyses suggests that the fiscal rules have a positive effect on the primary budget balance and improve fiscal performance. The model results show that a one-unit increase in the value of the fiscal rule index results in an average improvement of 0.27 unit in the primary budget balance. Except for one fiscal council dummy variable, six other fiscal council dummy variables positively affect the primary budget balance which is the dependent variable. The ratio of debt stock to GDP and the output gap are the control variables used in the models. Results indicate that an increase in the debt ratio affects the improvement of the primary budget balance. The effect of the output gap on the primary budget balance is not found to be statistically significant.

Maltritz & Wüste (2015) used pooled OLS and fixed effects models, to examine 27 EU countries for the period 1991-2011. They formed the fiscal rule index and the fiscal council index based on the EU fiscal rules database and the EU fiscal institutions database. Other variables that may affect the primary budget balance in the model are yield, debt, growth, unemployment, pol^{43} , $pop\ share-65^{44}$, sfa^{45} , the election dummy and the eurozone dummy. The study divides models into those with and without interaction terms. According to the fixed effects model without interaction terms, it was concluded that the fiscal rules positively affected the primary budget balance, while the ability of fiscal councils to explain the primary budget balance was not statistically significant. The addition of interaction terms does not affect the results for the fiscal rules index and stock-flow adjustments, which remain significant, while EMU membership and fiscal councils remain insignificant. In addition, it has been concluded that fiscal rules and fiscal councils have a significant joint effect on the budget balance. This means that fiscal councils contribute to significant improvement of the

⁴³ Political Orientation of the government. Values calculated by the authors themselves.

⁴⁴ Pop-Share 65: Share of population over 65 Inhabitants who are 65-year-old or older divided by total population multiplied with 100. AMECO and own calculations.

⁴⁵ SFA : $B_t - B_{t-1} - Dt$

Bt: the debt level at time t, Dt: s the difference between total revenues and total expenditures.

primary budget balance if fiscal rules are in place. In the pooled OLS model without interaction terms, as in the fixed effects model, fiscal rules have a positive impact on the primary budget balance, while the impact of fiscal councils is statistically insignificant. In the pooled OLS model, which includes interaction terms, both the fiscal councils and the interaction term (FRI*FCI) were not found to affect fiscal performance significantly; concluding that only fiscal rules had a significant and positive impact on fiscal performance. Looking at other variables, debt and sfa variables affect the primary budget balance positively in the fixed effects model, while unemployment affects it negatively.

Debrun & Kinda (2017) use the LSDVC estimation in their analysis covering 58 advanced and developing countries between 1990 and 2011. Debt, output gap, fiscal rule index and seven different fiscal council dummy variables are the variables included in the analysis. It is found that debt positively affects the primary budget balance, while the output gap has a negative effect. An increase of one unit in the fiscal rule index is associated with an improvement in the primary budget balance. The seven different fiscal council dummy variables are used depending on their respective duties⁴⁶. The existence of fiscal councils⁴⁷ is found to have a positive effect on the primary budget balance. It is important to analyze the effect of fiscal councils on the primary budget balance considering the distinct duties.

In their study covering 27 EU countries and the period between 2004 and 2016, Beetsma et al., (2019) has concluded that fiscal councils positively affect the accuracy of fiscal forecasts and compliance with fiscal rules. The results of the fixed effects model provide evidence that the existence of fiscal councils eliminates optimistic biases in budget estimates and increases their accuracy.

Wildowicz-Giegiel (2019) researched the impact of fiscal rules, fiscal councils and medium-term budget frameworks on fiscal performance in 27 EU countries between 2006 and 2017. As a result of the tests, it was concluded that the appropriate model was pooled OLS. In this study, the fiscal rule index, the scope index of fiscal institutions, and the medium-term budgetary frameworks index were used. The evidence shows that fiscal rules, fiscal councils and medium-term budget frameworks positively affect the CAB. In terms of the power of debt and output gap variables used in the model to affect fiscal performance, it

⁴⁶ Legal independence, safeguards on budget, staff number (high level), fiscal rule monitoring, costing of measures, forecast assessment, high media impact.

⁴⁷ Except for fiscal council variable that safeguards on budget.

is seen that debt and output gap have a negative effect on the CAB. The study notes that, due to the problem of the endogeneity of explanatory variables, alternative estimation methods are also worth using in the future. The instrumental variable method and the GMM are suggested methods.

Martins & Correia (2021) aimed to examine the effectiveness of fiscal rules and fiscal institutions of different classifications on fiscal performance in their studies comprising 28 EU countries between 1999 and 2016. LSDV, LSDVC, IV and GMM are the methods used in the study. In the basic analysis, where the LSDVC model is used in the study, there are three different classifications, which are defined as fiscal institutions by the IMF, EC and CW. The dependent variables used in the models are CAPB, cyclically adjusted primary expenditure (CAPE) and cyclically adjusted income (CAI). The effects of the fiscal rule index, medium-term budget framework index, SGP deficit rule and SGP expenditure rule variables on the CAPB are examined. The results reveal that a change in the fiscal rule index has no significant effect on the dependent variable in three separate classifications. The medium-term budgetary framework is found to positively improve the dependent variable of presence of a fiscal institution in the EC and CW classifications. In the IMF classification, the medium-term budgetary framework had no significant effect on the dependent variable, whether there is a fiscal institution or not. It is concluded that the SGP deficit rule improves the CAPB in all three classifications, regardless of the existence of a fiscal institution. While the SGP debt rule has a positive effect on the EC classification in both cases, it is found to have a positive effect on the dependent variable in the IMF and CW classifications in the absence of a fiscal institution. The fiscal rule index, medium-term budgetary framework index and SGP debt rule do not significantly affect CAPE and CAI in three classifications. The SGP-only deficit rule reduces the CAPE in all three classifications.

Dimitra (2021) explored the role of fiscal institutions in the PIIGCS⁴⁸ and DFGNS⁴⁹ countries from 1996 to 2018. The study which implemented fixed and random effects models concluded that fiscal rules positively affected the primary budget balance in both country groups. The primary budget balance is found to be improved by the interaction term, which includes the fiscal rules and fiscal councils, despite the fiscal councils' inability to do so statistically in both country groups. The model results including the PIIGCS countries show

⁴⁸ PIIGCS countries: Portugal, Ireland, Italy, Greece, Cyprus, Spain.

⁴⁹ DFGNS countries: Denmark, Germany, Netherlands, Finland, Sweden.

that borrowing, growth and inflation have a positive effect on the primary budget balance. In contrast, the model results including the DFGNS countries reveal that just inflation causes an improvement in the primary budget balance.

4.3. Methodology

This study analyses the relationship between fiscal rules and fiscal councils and fiscal performance using the panel GMM. The panel data analysis covers 28 EU countries between 1996 and 2019.

$$y_{it} = \delta y_{it-1} + \beta' x_{it} + u_{it} \quad (4.1)$$

$$u_{it} = \mu_i + v_{it} \quad (4.2)$$

Equation 1 shows a lagged autoregressive panel data model in which a lagged value of the dependent variable is included as the independent variable in the model.

$$y_{it} = \beta z_{it} + u_{it} \quad (4.3)$$

$$z_{it} = \delta y_{it-1} + \beta x_{it} + u_{it} \quad (4.4)$$

$$E(z_{it} u_{it}) \neq 0 \quad (4.5)$$

In dynamic panel data models, the endogeneity problem arises when the lagged values of the dependent variables are included in the model as an explanatory variable. As stated in Equation 5, the endogeneity problem is a situation where the explanatory variables are correlated with the error terms. There is a correlation between the independent variable added to the model as the lagged value of the dependent variable and u_{it} . In this case, the strict externality assumption is disproved, and the estimators become biased and inconsistent (Tatoğlu, 2020). The correlation problem can be solved by using instrumental variables. The endogeneity problem can be dealt with by using instrumental variables that are not correlated with the error terms. Additionally, the instrumental variables are correlated with the variable they will replace. Therefore, due to the endogeneity of the explanatory variables, it is worthwhile to use alternative estimation methods, like the instrumental variable method or the GMM, recommended to increase the efficiency of estimation (Wildowicz-Giegiel, 2019).

In dynamic panel data models, the effectiveness of the methods that can solve the endogeneity problem differs. The pooled least squares method does not consider unit effects, and thus Balestra and Nerlove's two-stage least squares method cannot use appropriate estimators in dynamic panel data models. In addition, the $E(x_{it}\mu_i) = 0$ assumption of the random effects model cannot be provided in dynamic panel data models due to the internal validity problem, and due to the estimation of the dynamic panel data model with the random effects model is also inconsistent (Tatoğlu, 2018). Therefore, fixed effects and first difference estimators are used in dynamic panel data models, which consider unit effects and allow the correlation of unit effects and independent variables. For fixed effects in which the unit effect (μ_i) can be eliminated by intra-group transformation, the in-group estimator and the LSDV give the same results. The LSDV method suggests using a dummy variable to express unit effects. The weakness of the method is that increasing the number of dummy variables to determine the unit effects reduces the model's degrees of freedom. Nickell (1981) showed that the LSDV estimator in autoregressive dynamic panel data models is inconsistent when N is large, and T is small. Especially in the case of $T < N$, the occurrence of biased results is known as Nickell deviation or dynamic panel deviation in the literature (Çağlayan Akay, 2015; Roodman, 2009; Tatoğlu, 2020). Kiviet (1995, 1999), Bun and Kiviet (2003), and Bruno (2005) have proposed a correction for dynamic panel deviation for cases where $T < N$. It has been shown by Monte Carlo simulations that the LSDVC gives more consistent results. (Tatoğlu, 2020).

Other methods used due to the endogeneity problem are the first differences estimator, the Arellano and Bond GMM, and the Arellano and Bover / Blundell and Bond System GMM estimators. The difference and system generalized moment method developed by Holtz-Eakin, Newey & Rosen (1988); Arellano & Bond (1991); Arellano & Bover (1995); Blundell & Bond (1998) are becoming more popular (Roodman, 2009). The Arellano-Bover/Blundell-Bond estimator extends Arellano-Bond by assuming that first differences of instrument variables are uncorrelated with fixed effects. This allows the introduction of more instruments and has the potential to boost efficiency. It creates a system of two equations, the original and the transformed, and is known as the system GMM (Roodman, 2009). Since the difference GMM method gives poor results due to weak instrumental variables, system GMM should be applied (Blundell & Bond, 1998). The model results generally show a serious problem of finite sample bias caused by weak instruments in the first differentiated GMM results, which can be addressed by the system GMM. The system GMM estimator

also provides significant progress in precision compared to the first-differenced GMM (Bond et al, 2001; Blundell et al, 2001).

The lagged value of the primary budget balance, which is used as the dependent variable in this study, is included as an explanatory variable in the model as the budget balance is affected by the previous primary budget balances. The data set structure is suitable for dynamic analysis, not static. As stated above, the system GMM estimator is used because it gives more efficient results in the dynamic panel data model.

4.4. Data

In this study, the determinants of fiscal performance in EU-28 countries were investigated in a dynamic structure from 1996 to 2019. The dynamic structure here is created by including the one-period lagged value of the primary budget balance into the model as an independent variable. The most significant reason for taking the EU countries as a basis in the study is to minimize data loss in the estimation phase by generating a balanced panel data set. The data set was divided into two periods before and after the 2008 crisis, and a comparative analysis was performed.⁵⁰ This is because after the 2008 crisis, significant reform changes were made in the SGP, which is one of the main components of the EU fiscal framework, and as a result, changes were performed in the fiscal rules. In addition, the substantial increase in the number of fiscal councils by emphasizing the requirement of fiscal councils, as a consequence, was one of the reasons. The impact of fiscal rules and councils on fiscal performance has been analyzed in pre- and post-crisis periods. At the same time, since GMM results give unbiased results when $T < N$ (especially $T \leq 12$), it was deemed appropriate to conduct a comparative analysis by dividing the data set into two periods pre- and post-crisis. Moreover, fiscal rules are widely applied in EU countries. In addition, there are 29 fiscal councils in the EU. Additionally, the fiscal rule dataset is published for the EU countries.

In Appendix Figure 7.1, the graphs of the primary budget balances of the EU countries based on years are given. As can be seen from the graphs, the crisis had a worse effect on the financial situation of the EU countries and caused a significant deterioration in the budget

⁵⁰ The period between 1996-2008 constitutes the first period, and between 2009-2019 comprises the second. The reason why 2008 was included in the first period is that the financial crisis that emerged in the USA in December 2007 had an impact primarily on the financial markets and then significantly affected the economic structure of the EU countries in 2009.

balances. Therefore, it is crucial to evaluate the two periods separately. Table 4.2 presents the variables and data sources used in the dynamic model.

Table 4.2. Definition, abbreviation, unit, and sources of variables

Variables	Unit	Abbreviation	Source
Primary Budget Balance	% GDP	pb	IMF Fiscal Monitor Database ⁵¹
Debt	% GDP	debt	IMF-Global Debt Database
Unemployment rate	% total labor force	unemp	IMF-World Economic Outlook
Fiscal Council	Dummy variable	fc_fa ⁵² fc_mfr ⁵³ fc_lts ⁵⁴ fc_cwo ⁵⁵ fc_re ⁵⁶	IMF-Fiscal Council Dataset
Fiscal Rule	Index	fr	EC
Interaction terms	Fiscal rule index*fiscal council variable	fc_fa*fr fc_mfr*fr fc_lts*fr fc_cwo*fr fc_re*fr	Author's calculations
Inflation rate	Percent annual rate of increase in CPI ⁵⁷	inf	World Bank
Growth rate	Real GDP Growth (%)	growth	World Bank
Trade openness	% GDP	to	World Bank
Globalization	Index	kof	KOF Swiss Economic Institute
European Union	Dummy variable	eu	EU

This thesis aims to analyze the impact of fiscal rules and councils on fiscal performance. As a proxy for fiscal performance, the general government's primary budget balance as a ratio to GDP is comprised in the data set. The primary budget balance is used as an indicator of fiscal performance since the primary budget balance is vital for the fiscal sustainability of countries with high public debt and provides more information about the sustainability of fiscal policy than other budget deficits. Debt sustainability is important in countries with a high ratio of public debt stocks to GDP. The primary budget balance is

⁵¹ 1996,1997, and 1998 for Latvia, 1996,1997,1998, and 1999 for Malta are taken from the IMF-Government Finance Statistics Primary Net Lending/Borrowing section. There is no data for the first five years for Lithuania.

⁵² fc_fa: Fiscal councils that forecast assessment

⁵³ fc_mfr: : Fiscal councils that monitor fiscal rules

⁵⁴ fc_lts: : Fiscal councils that long-term sustainability

⁵⁵ fc_cwo: : Fiscal councils that consistency with objectives

⁵⁶ fc_re: : Fiscal councils that recommendations

⁵⁷ CPI: Consumer prices index.

critical in this case (Şen et al., 2007; Blejer & Cheasty, 1992). Because interest payments are not included in the primary budget balance, it contributes to sustainability and indicates the portion of the budget that can be controlled (Önder & Kirmanolu, 1996). In addition, it is one of the most critical variables preferred as a fiscal performance indicator in the literature. Also, IMF attaches importance to primary budget balance as a proxy for fiscal performance.

Fiscal rule index data for fiscal rules are from the European Commission. For the fiscal councils, five separate divisions of remit have been considered. While the dummy variable of the fiscal council, which takes on the relevant remit in the relevant year, took the value of 1; otherwise, it takes the value of 0. The interaction term represents the situation where fiscal rules are supported by fiscal councils. To provide policy recommendations, it is necessary to examine not only the effect of fiscal rules or fiscal councils on the primary budget balance, but also the interactive effect. Two studies in the literature analyze the impact of the interaction term on fiscal performance (Malltritz & Wüste, 2015; Dimitra, 2021). Maltritz & Wüste (2015) used the Pooled OLS and Fixed Effect method in their studies covering 27 EU countries and the period between 1991 and 2011 to analyze the impact of interaction terms on fiscal performance. Dimitra (2021), on the other hand, analyzed the effect of the interaction term on fiscal performance in PIIGS and DFGNS countries using the fixed effects and random effects model. In this thesis, the effect of interaction terms on fiscal performance in 28 EU countries is analyzed in a dynamic structure. The data set also includes the variables of debt, unemployment, growth, inflation, trade openness, and European monetary union dummy variable, which are commonly used in the literature that can affect the primary budget balance.

As shown in Table 4.2, the ratio of general government public debt stock to GDP and unemployment rate are taken from the IMF database. Growth rate, inflation rate, and trade openness data were obtained from the World Bank. The debt variable is the ratio of the general government debt stock to GDP. The unemployment rate is included in the data set as a percent of the total labor force. The growth variable is available in the data set as percent GDP growth, and the inflation variable as the percent annual rate of increase in CPI. Moreover, the trade openness variable was taken from the World Bank as the ratio of the sum of exports and imports to GDP and incorporated into the data set. In the study, KOF Economic Globalization Index was used as a proxy for globalization. The KOF Globalization Index, which provides for numerous economic, social, and political indicators,

was developed by Dreher (2006), and its revised version is supplied by Gygli et al., (2019). An increase in the index value means higher globalization. This index is obtained from the KOF Swiss Institute of Economics database. Another variable used in the data set is the dummy variable that takes the value of 1 in case of becoming a member of the EU in the relevant year and 0 otherwise.

The direction in which the independent variables used in this study will affect the primary budget balance depends on several factors. It is generally accepted that an increase in the debt stock will adversely affect the budget balance by raising interest rates. However, when the effect of the debt stock on the primary budget balance is examined, it can apparently have both positive and negative effects. As debt increases, the primary budget balance may improve if the debt is sustainable. In such a case, governments adjust the primary budget balance and respond to the change in public debt through primary surplus. Fiscal fatigue occurs when debt is unsustainable, and governments cannot adjust to this increase with a primary surplus. In this case, the increase in borrowing negatively affects the primary budget balance.

The impact of growth on the primary budget balance is expected to be positive. An increase in the growth rate can improve the primary budget balance by increasing tax revenues. In addition, an increase in the growth rate may affect the primary budget balance positively by causing a decrease in unemployment rates and, thus a decrease in social expenditures. On the other hand, in a growing economy, production capacity and exports may increase, and, as a result, the primary budget balance may improve.

Although budget deficits generally have a consistent impact on inflation, increases in inflation do not affect budget deficits in the same direction. There are two distinct effects to consider when assessing the impact of inflation on budget deficits. The Tanzi effect argues that inflation contributes to budget deficits by diminishing the real value of tax revenues. The Patinkin effect argues that inflation reduces budget deficits by reducing real expenditures. In cases where the Patinkin effect predominates, inflation may have a positive impact on the budget balance.

Unemployment can lead to a decrease in tax revenues, an increase in social spending, a contraction of economic activity, and a decline in economic growth. Consequently, an increase in unemployment rate is expected to have a negative impact on the budget balance.

When evaluating the effect of trade openness on the primary budget balance, it is important to note that this effect can be either positive or negative. Increasing trade openness has the potential to support economic growth and create more employment opportunities for countries. Countries can attract more foreign investors by increasing the trade volume, which can further boost domestic job creation. Consequently, tax revenues may improve, ultimately leading to an improvement in the primary budget balance. In addition to the revenues derived from exports, tax revenues generated from imports can also positively affect the primary budget balance. Nonetheless, in cases where imports exceed exports, a trade deficit arises, leading to the possibility of an adverse effect on the budget balance. It is worth noting that the impact of trade openness on the primary budget balance may depend on a variety of factors, including the types of goods and services traded, the structure of the economy and government policies and regulations.

Since globalization has many dimensions, such as economic, social, cultural, social, technological, and political, there is no single definition. Globalization is far beyond economic indicators such as trade openness and capital movements. For this reason, the KOF globalization index, calculated by the Swiss Economic Research Institute, which deals with globalization's economic, social, and political dimensions, gains importance. There is no consensus in the literature on the impact of globalization on both economic growth and fiscal performance. The effects of globalization on fiscal performance may differ according to the development level and income status of countries. In addition, this effect may vary depending on which factors are intense in the globalization phenomenon of the country's economies. From the perspective of the budget balance, globalization has deeply affected the tax systems and tax policies of countries and continues to do so. It can be expected that globalization will adversely affect the primary budget balance due to the fiscal gaps created by globalization in taxation.

Being a member of a monetary union is known to have a distorting effect on the budget balance. This is because fiscal policy is often used as an instrument of intervention in the economy due to the joint determination of monetary policy within the monetary union. Consequently, membership of a monetary union is expected to have negative impact on the budget balance.

In the literature, the effects of fiscal rules and fiscal councils on the primary budget balance are generally considered to be positive. However, there are some studies that have

found these effects to be statistically insignificant. It is widely expected that fiscal rules and councils, which aim to improve fiscal performance, ensure fiscal discipline, and maintain macroeconomic stability, will have a positive impact on the primary budget balance. In addition, it is generally accepted in the theoretical literature that fiscal councils contribute to fiscal performance by increasing the credibility of fiscal rules. The impact of the interaction terms used in the analysis on fiscal performance is expected to be positive.

Table 4.3. Descriptive statistics of variables from 1996 to 2019

Variable	Observations	Mean	Std. Dev.	Min	Max
pb	667	- 0.295	3.117	- 29.901	7.994
debt	672	57.104	33.328	3.766	184.759
growth	672	2.701	3.490	- 14.839	25.176
fr	672	0.199	1.007	- 0.986	3.069
fc_fa	672	0.314	0.464	0	1
fc_mfs	672	0.363	0.481	0	1
fc_lts	672	0.295	0.456	0	1
fc_cwo	672	0.335	0.472	0	1
fc_re	672	0.310	0.463	0	1
fr*fc_fa	672	0.315	0.688	- 0.986	3.069
fr*fc_mfr	672	0.357	0.741	- 0.986	3.069
fr*fc_lts	672	0.313	0.713	- 0.986	3.069
fr*fc_cwo	672	0.334	0.730	- 0.986	3.069
fr*fc_re	672	0.282	0.657	- 0.986	3.069
kof	672	79.714	7.619	51.842	90.906
inf	672	5.066	41.648	- 4.478	1,058.374
unemp	672	8.934	4.456	2.001	27.475
to	672	112.821	63.076	37.496	408.362
eu	672	0.470	0.499	0	1

In Table 4.3, descriptive statistics of the variables in the data set for the pre-crisis period are demonstrated. The highest value of the primary budget balance used in the model as a dependent variable was 7.994% in Bulgaria in 1997, while the lowest value was - 29.901% was in Ireland in 2010. While the number of observations for the primary budget balance variable is 667 in the relevant period, the number of observations for all other variables is 672. The primary budget balance data for 1996-2000 could not be reached only for Lithuania. In this period, when the debt burden also increased significantly, the ratio of general government public debt stock to GDP was the highest in Greece in 2018, with

184,759%. Additionally, Estonia had the minimum general government debt stock to GDP ratio, which was 3.766%. The growth variable was computed as 2.701% on average. It is observed that the highest growth rate was 25.176% in Ireland in 2015, and the lowest was -14.839% in Lithuania in 2009. While the fiscal rule index value was the weakest at -0.986, the most robust value was 3.069. The average fiscal rule index value was 0.199. Fiscal council variables (mfr, fa, lts, cwo, re) are dummy variables that take the value 0 or 1. Interaction terms allow us to analyze the impact of fiscal rules when supported with fiscal councils, with a maximum value of 3.069 and a minimum value of -0.986. A dummy variable (eu) showing whether or not to be a member of the EU is also 0 or 1. The maximum value of the globalization variable occurred in Netherlands in 2019, while the lowest value occurred in 1996 in Croatia. The inflation rate reached its highest value in 1997 in Bulgaria. The least inflation rate was recorded in 2009 in Ireland. In the data set, where an average unemployment rate of 8.934% was realized, the highest unemployment rate was in Greece in 2013 and the lowest unemployment rate was in Czech Republic in 2019. While Luxemburg was the country with the most superior trade openness in 2015, Greece was the country with the most insufficient trade openness in 1996. Lastly, fiscal council dummy variables and EU membership dummy variables also take the value 0 or 1.

The correlation matrix of the variables used in the model established for the pre-crisis period is shown in Table 7.1. There is a negative correlation between the primary budget balance used as the dependent variable in the model and the unemployment rate. In addition, it is seen that there is a very low and negative correlation between trade openness and primary budget balance. On the contrary, there is a positive correlation between the primary budget balance and all other explanatory variables. The correlations between the fiscal council dummy variables and the interaction terms are quite high. With respect to this, these variables are tested separately to overcome this multicollinearity problem.

The correlation matrix using the data for the post-crisis period is presented in Table 7.2. The correlation matrix shows that the primary budget balance, the dependent variable, is negatively correlated with the unemployment and inflation rates. It is seen that the high correlations are the correlations between the fiscal council dummy variables and interaction terms, as in the pre-crisis period. Again, in this period, fiscal council dummy variables and interaction terms were included in the regression models, and the results were interpreted separately.

4.5. Empirical Model and Results

The general regression equation of a dynamic panel is depicted in equation 5 (Baltagi, 2008).

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_{kit} + (\mu_i + v_{it}) \quad (4.6)$$

$$i = 1, \dots, N$$

$$t = 1, \dots, T$$

Here, i and t represent countries and years, respectively, μ_i represents country fixed effect, and v_{it} is the error term. The following are 12 models are the dynamic panel estimated using the system GMM proposed by Blundell and Bond (1998). The first model is the basic model. The fiscal rule variable is added to the second model. Then, five fiscal council variables are added, each of which performs a different task (see models 3,4,5,6, and 7). Additionally, five interaction terms⁵⁸ representing fiscal rules supported by fiscal councils are added to other models (see models 8, 9, 10, 11, and 12).

The models incorporate the primary budget balance as an independent variable and a one-legged value of the primary budget balance as an explanatory variable. Because the primary budget balance is affected by the previous primary budget balances. This is because the data set structure is suitable for dynamic analysis, not static. The fiscal rule index, fiscal council dummy variables, interaction terms, debt, growth, inflation, trade openness, unemployment, globalization, and membership in the monetary union are additional explanatory variables, as stated in the previous section. The independent variables used in the study were determined based on the studies of following prior studies Fabrizio & Mody (2006), Maltritz & Wüste (2015), and Bergman et al. (2016). On the other hand, the globalization index is a variable that is not used in the literature and is used as an independent variable in this thesis. Examining the effect of the globalization index, which includes economic, political, and social globalization, on the primary budget balance contributes to the relevant literature. The inclusion of the globalization variable as an independent variable in this thesis was based on the studies of Klomp & De Haan (2013), Dreher et al., (2018),

⁵⁸ Interaction terms refer to fiscal rules supported by fiscal councils. These variables allow us to analyze the impact of fiscal rules in the case of the presence of fiscal councils on the primary budget balance. Five interaction terms have been created for the fiscal council, which undertakes five distinct remits.

and Shi et al., (2022). Additionally, the inclusion of the interaction terms in the models was based on the studies of Maltriz & Wüste (2015) and Dimitra (2021).

Model 1:

$$pb_{it} = \beta_1 pb_{it-1} + \beta_2 debt_{it} + \beta_3 growth_{it} + \beta_4 inf_{it} + \beta_5 unemp_{it} + \beta_6 to_{it} + \beta_7 kof_{it} + \beta_8 eu_{it} + (\mu_i + v_{it})$$

Model 2:

$$pb_{it} = \beta_1 pb_{it-1} + \beta_2 debt_{it} + \beta_3 growth_{it} + \beta_4 inf_{it} + \beta_5 unemp_{it} + \beta_6 to_{it} + \beta_7 kof_{it} + \beta_7 fr_{it} + \beta_9 eu_{it} + (\mu_i + v_{it})$$

Model 3:

$$pb_{it} = \beta_1 pb_{it-1} + \beta_2 debt_{it} + \beta_3 growth_{it} + \beta_4 inf_{it} + \beta_5 unemp_{it} + \beta_6 to_{it} + \beta_7 kof_{it} + \beta_7 fr_{it} + \beta_8 fc_fa_{it} + \beta_9 eu_{it} + (\mu_i + v_{it})$$

Model 4:

$$pb_{it} = \beta_1 pb_{it-1} + \beta_2 debt_{it} + \beta_3 growth_{it} + \beta_4 inf_{it} + \beta_5 unemp_{it} + \beta_6 to_{it} + \beta_7 kof_{it} + \beta_7 fr_{it} + \beta_8 fc_mfr_{it} + \beta_9 eu_{it} + (\mu_i + v_{it})$$

Model 5:

$$pb_{it} = \beta_1 pb_{it-1} + \beta_2 debt_{it} + \beta_3 growth_{it} + \beta_4 inf_{it} + \beta_5 unemp_{it} + \beta_6 to_{it} + \beta_7 kof_{it} + \beta_7 fr_{it} + \beta_8 fc_lts_{it} + \beta_9 eu_{it} + (\mu_i + v_{it})$$

Model 6:

$$pb_{it} = \beta_1 pb_{it-1} + \beta_2 debt_{it} + \beta_3 growth_{it} + \beta_4 inf_{it} + \beta_5 unemp_{it} + \beta_6 to_{it} + \beta_7 kof_{it} + \beta_7 fr_{it} + \beta_8 fc_cwo_{it} + \beta_9 eu_{it} + (\mu_i + v_{it})$$

Model 7:

$$pb_{it} = \beta_1 pb_{it-1} + \beta_2 debt_{it} + \beta_3 growth_{it} + \beta_4 inf_{it} + \beta_5 unemp_{it} + \beta_6 to_{it} + \beta_7 kof_{it} + \beta_7 fr_{it} + \beta_8 fc_re_{it} + \beta_9 eu_{it} + (\mu_i + v_{it})$$

Model 8:

$$pb_{it} = \beta_1 pb_{it-1} + \beta_2 debt_{it} + \beta_3 growth_{it} + \beta_4 inf_{it} + \beta_5 unemp_{it} + \beta_6 to_{it} + \beta_7 kof_{it} + \beta_7 fr * fc_fa_{it} + \beta_9 eu_{it} + (\mu_i + v_{it})$$

Model 9:

$$pb_{it} = \beta_1 pb_{it-1} + \beta_2 debt_{it} + \beta_3 growth_{it} + \beta_4 inf_{it} + \beta_5 unemp_{it} + \beta_6 to_{it} + \beta_7 kof_{it} + \beta_7 fr * fc_mfr_{it} + \beta_9 eu_{it} + (\mu_i + v_{it})$$

Model 10:

$$pb_{it} = \beta_1 pb_{it-1} + \beta_2 debt_{it} + \beta_3 growth_{it} + \beta_4 inf_{it} + \beta_5 unemp_{it} + \beta_6 to_{it} + \beta_7 kof_{it} + \beta_7 fr * fc_lts_{it} + \beta_9 eu_{it} + (\mu_i + v_{it})$$

Model 11:

$$pb_{it} = \beta_1 pb_{it-1} + \beta_2 debt_{it} + \beta_3 growth_{it} + \beta_4 inf_{it} + \beta_5 unemp_{it} + \beta_6 to_{it} + \beta_7 kof_{it} + \beta_7 fr * fc_cwo_{it} + \beta_9 eu_{it} + (\mu_i + v_{it})$$

Model 12:

$$pb_{it} = \beta_1 pb_{it-1} + \beta_2 debt_{it} + \beta_3 growth_{it} + \beta_4 inf_{it} + \beta_5 unemp_{it} + \beta_6 to_{it} + \beta_7 kof_{it} + \beta_7 fr * fc_re_{it} + \beta_9 eu_{it} + (\mu_i + v_{it})$$

Table 4.4 presents the results of the system GMM, which analyzes the effect of fiscal rules and councils on fiscal performance in the 1996 and 2008 period⁵⁹. Column 1 shows the results of the basic regression model, which exclude fiscal rules and councils. Debt, growth, inflation, and unemployment all have statistically significant effects on the primary budget balance in this model. According to the model results, it is concluded that an increase in unemployment affects the primary budget balance negatively. On the other hand, an increase in debt, growth, and inflation has a positive impact on the primary budget balance.

The second column of the table shows the results of another model including fiscal rules in addition to the basic model. A one-unit increase in the fiscal rule index value raises

⁵⁹ For the estimation of all models in the study, the system GMM was used with the "xtabond2" command derived by Roodman (2006).

the primary budget balance by 0.686 units. It should be noted here that an increase in the fiscal rule index indicates stronger and more robust fiscal rules.

Furthermore, the dummy variable of the fiscal council, which makes forecast assessment, is added in the third model (see column 3). This model shows that a one-unit increase in the fiscal rule index increases the primary budget balance by 0.598 units, and the presence of fiscal councils making forecast assessments positively affects the primary budget balance. In the model, debt, growth, inflation, fiscal rule, and fiscal council variables have a statistically significant and positive effect on the dependent variable. The analysis reveals a statistically significant and negative impact of the unemployment and globalization variables on the dependent variable.

In the model results reported in column 4, it has been deduced that the fiscal rules still positively affect the primary budget balance at 1% significance level. The fiscal councils, which took on the task of monitoring the fiscal rules, had a statistically insignificant positive effect on the primary budget balance. In addition, the relevant model results show that debt, growth, and inflation affect the dependent variable positively. Unemployment and globalization variables have a negative impact on the primary budget balance. The impact of trade openness and the dummy variable of being a member of a monetary union on the dependent variable is found to be statistically insignificant.

The last column indicates that a one-unit increase in the fiscal rule index value improves the primary budget balance by 0.5979 units. Additionally, while the effects of debt, growth, inflation, and fiscal rules on the dependent variable are positive, however, the impact of unemployment and globalization are negative. In the relevant period, the *fc_cwo* data and *fc_lts* data do not show any difference. The model results are the same in models including two councils. Therefore, it has not been re-reported. Since the same situation exists between *fc_re* data and *fc_mfr* data, no re-reporting is made.

Table 4.4. System GMM results for the pre-crisis period without interaction terms.

Variables	(1)	(2)	(3)	(4)	(5)
L.pb	0.6879*** (0.090)	0.6925*** (0.081)	0.6987*** (0.080)	0.6945*** (0.082)	0.6969*** (0.081)
debt	0.0111* (0.006)	0.0171*** (0.005)	0.0146*** (0.004)	0.0168*** (0.005)	0.0150*** (0.005)
growth	0.1860*** (0.065)	0.2031*** (0.063)	0.2089*** (0.064)	0.2083*** (0.064)	0.2067*** (0.063)
inf	0.0055*** (0.001)	0.0060*** (0.001)	0.0062*** (0.001)	0.0061*** (0.001)	0.0061*** (0.001)
unemp	-0.0716** (0.029)	-0.0519** (0.025)	-0.0402* (0.022)	-0.0425* (0.024)	-0.0415* (0.023)
to	-0.0026 (0.003)	-0.0006 (0.002)	-0.0007 (0.002)	-0.0003 (0.002)	-0.0008 (0.002)
kof	-0.0039 (0.008)	-0.0106* (0.006)	-0.0120** (0.005)	-0.0131** (0.006)	-0.0117** (0.005)
fr		0.6856*** (0.150)	0.5982*** (0.136)	0.6458*** (0.153)	0.5979*** (0.144)
fc_fa			0.6159** (0.305)		
fc_mfr				0.5135 (0.419)	
fc_lts					0.4285 (0.309)
eu	0.0441 (0.302)	-0.0734 (0.233)	-0.0169 (0.212)	-0.0192 (0.219)	-0.0482 (0.214)
Wald Test	386.39 0.000	727.70 0.000	1156.61 0.000	772.28 0.000	894.87 0.000
Hansen test	9.02 0.435	7.70 0.658	6.70 0.753	7.21 0.706	7.57 0.671
AR (1)	-3.78 0.000	-3.60 0.000	-3.61 0.000	-3.62 0.000	-3.61 0.000
AR (2)	1.01 0.314	1.08 0.278	1.10 0.269	1.11 0.268	1.09 0.275
Observations	331	331	331	331	331
Number of countries	28	28	28	28	28
Number of instruments	17	19	20	20	20

Note: The dependent variable is primary budget balance as defined in the data section. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

All in all, fiscal rules have a positive effect on the primary budget balance at the 1% significance level for the four models. Moreover, the coefficient of fiscal rules does not change dramatically across models, showing the robustness of the coefficient. Five separate fiscal council dummy variables are formed, and it is concluded that the presence of fiscal

councils that only make forecast assessments in the relevant period had a statistically significant and positive impact on the primary budget balance. Other fiscal councils are found to have a positively effect on the primary budget balance, yet that effects are not statistically significant.

As can be seen from Table 4.4, all models are correctly specified according to the results of the Wald Test. In the second model, the Wald test value increases due to the inclusion of the fiscal rule variable in the model. The Wald test value is also higher in models to which fiscal council variables are added compared to model 2 (see models 3,4, and 5). Although new variables are added, the fact that the coefficient values of other variables do not change significantly indicates robustness. In addition, robustness was tested by removing other variables from the models and replacing one variable with another. These models are presented in the Appendices (see table 7.3, 7.4, 7.5, 7.6, and 7.7).

The validity of the results obtained after the GMM analysis should be tested. The first such test is the autocorrelation test. In dynamic panel data models, as the first lag of the dependent variable is included as an explanatory variable, it is expected that there will be first-order autocorrelation. The absence of second-order autocorrelation in GMM models is a prerequisite for the estimators to be effective (Tatoğlu, 2020). In all models, the H_0 : No autocorrelation hypothesis is rejected because of $p < 0.05$, and it is seen that there is first-order autocorrelation. However, in all models, H_0 : No autocorrelation hypothesis cannot be rejected because of $p > 0.05$, and there is no second-order autocorrelation. Therefore, there is no autocorrelation problem in any of the models.

In the context of the GMM, the overidentifying restrictions may be tested using the commonly employed J statistic of Hansen (1982) (Baum, 2003). The validity of the instrumental variables in the system GMM estimation is examined through the resistant Hansen J test. The null hypothesis of the Hansen test is that over-definition constraints are valid. As can be seen in Table 15, the null hypothesis cannot be rejected in all models, and the instrumental variables are valid. Another point to considered in GMM estimations is that the number of instrumental variables should be lower than the number of groups (the number of horizontal cross-sections) (Tatoğlu, 2020). A large number of instrumental variables reduces the effectiveness of the estimator in a finite sample. It potentially leads to over-

fitting (Cevik & Zhu, 2020). In all models, the number of instrumental variables is lower than the number of countries (28)⁶⁰.

Models with interaction terms for 28 EU countries in the pre-crisis period were estimated using the system GMM, and all results are reported in Table 4.5. The results of the basic model without any interaction terms are given in the first column. While debt, growth, and inflation affect the dependent variable positively, unemployment affects it negatively. The trade openness, globalization, and the dummy variables of being a monetary union member did not significantly affect the primary budget balance. When the model results are generally interpreted, the most striking point is that the fiscal rules supported by the fiscal councils have a positive effect on the primary budget balance (see columns 2, 3, and 4).

During this period, apart from the fiscal councils that made forecast assessments, the fiscal council, which took on the other four tasks, did not have a statistically significant effect on the primary budget balance by itself. On the contrary, the interaction terms had a statistically significant and positive impact on the primary budget balance. It is clear from the second column that fiscal rules, which are supported by fiscal councils that makes forecasting assessment, (fr*fc_fa) improve the primary budget balance. The 3rd column reveals that the fiscal rules supported by the fiscal councils monitoring the fiscal rules (fr*fc_mfr) have a positive effect on the primary budget balance at the 10% significance level. It is stated in the model results in the fourth column that the fiscal rules promoted by the fiscal councils that make long-term sustainability analyses (fr*fc_lts) also affect the dependent variable positively at the 5% significance level. Moreover, there is no difference in the regression results since the data of cwo in this period and the data of lts do not differ. Likewise, the model results are the same because the data of the re, and the data of the mfr do not change. Therefore, no additional reporting has been made.

Wald test results showed models are correctly specified (see Table 4.5). While there is autocorrelation at the AR (1) level in all four models, there is no autocorrelation at the AR (2) level. The probability values of the Hansen test in the four models are 0.435, 0.454, 0.454, and 0.439, respectively. In all models, the H_0 hypothesis of the Hansen test cannot be

⁶⁰ It is possible to reduce the number of instrument variables with the "collapse" command (Roodman, 2009; Tatoğlu, 2020). The collapse command is used to reduce the number of instrument variables in estimating the models created in the study.

rejected, and the over-definition restrictions are valid. The number of instrumental variables is lower than the number of groups (countries) in all four models.

Table 4.5. System GMM results for the pre-crisis period including interaction terms

Variables	(1)	(8)	(9)	(10)
L.pb	0.6879*** (0.090)	0.7040*** (0.088)	0.7085*** (0.088)	0.7002*** (0.088)
debt	0.0111* (0.006)	0.0118* (0.006)	0.0118* (0.006)	0.0115* (0.006)
growth	0.1860*** (0.065)	0.1960*** (0.066)	0.1959*** (0.066)	0.1948*** (0.066)
inf	0.0055*** (0.001)	0.0056*** (0.001)	0.0055*** (0.001)	0.0056*** (0.001)
unemp	-0.0716** (0.029)	-0.0619** (0.025)	-0.0614** (0.025)	-0.0601** (0.026)
to	-0.0026 (0.003)	-0.0022 (0.003)	-0.0022 (0.002)	-0.0023 (0.003)
kof	-0.0039 (0.008)	-0.0072 (0.007)	-0.0072 (0.007)	-0.0071 (0.007)
fr*fc_fa		1.1235** (0.572)		
fr*fc_mfr			1.1043* (0.574)	
fr*fc_lts				0.9564** (0.458)
eu	0.0441 (0.302)	0.1011 (0.278)	0.0820 (0.274)	0.0769 (0.276)
Wald Test	386.39 0.000	419.13 0.000	429.51 0.000	414.96 0.000
Hansen test	9.02 0.435	9.84 0.454	9.85 0.454	10.02 0.439
AR (1)	-3.78 0.000	-3.76 0.000	-3.76 0.000	-3.76 0.000
AR (2)	1.01 0.314	1.03 0.304	1.03 0.304	1.02 0.307
Obs.	331	331	331	331
Number of countries	28	28	28	28
Number of instruments	17	19	19	19

Note: The dependent variable is primary budget balance as defined in the data section. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

The results of the analysis using system GMM estimators for the post-crisis period between 2009 and 2019, and 28 EU countries are shown in Table 4.6. As in the pre-crisis

period, models without interaction terms were first estimated. Comparing the results of the seven models in Table 4.6 with the pre-crisis period, it is apparent that the statistically significant effects of growth, inflation, and unemployment variables on the dependent variable become meaningless. At the same time, it is seen that the impact of the trade openness variable and dummy variables of monetary union membership was statistically insignificant before the crisis. However, it is noteworthy that they had a statistically significant impact on the dependent variable in the post-crisis period. As demonstrated from the model results, being a member of a monetary union deteriorates the primary budget balance. Due to a common monetary union, member countries cannot intervene in the economy with their monetary policies as the monetary policy is conducted from a single center. Therefore, because of the use of fiscal policies as a means of intervention in the economy of the countries included in the monetary union, the primary budget balance is adversely affected. Increases in trade openness improve the primary budget balance in all models (Table 4.6). The positive effect of trade openness on the primary budget balance can be explained by the fact that the value-added tax revenues and customs tax revenues on imports have a positive impact on the budget revenues and, thus, on the budget balance. Furthermore, globalization negatively affects the primary budget balance. There is no consensus in the literature on the impact of globalization on fiscal performance. As seen in the model results, the reason why globalization negatively affects the primary budget balance can be considered as the fiscal gaps created by globalization in taxation. In the literature, there are studies that reach the conclusion that globalization has a detrimental effect on financial performance, which is consistent with the results of the study (Klomp & De Haan, 2013; Shi et al., 2022).

Considering the effect of the debt variable on the primary budget balance, it has a statistically significant and positive effect on the primary budget balance in both periods. It is expected that an increase in the debt level may adversely affect the budget balance by raising the interest rates. However, the dependent variable used in the models is the primary budget balance. It is necessary to examine the relationship between the primary budget balance and the debt level based on fiscal fatigue. Fiscal fatigue occurs when interest payments cannot be covered by a primary surplus due to rising debt levels. (Ghosh et al., 2013: 8-9; Di Iorio & Fachin, 2019: 12). The relationship between debt and primary surplus can be explained in three stages. In the first stage, when the primary surplus does not respond to the increase in debt, debt increases are insignificant. In the second stage a fiscal

consolidation process is initiated, where debt increases further, and an effort is made to balance the debt-to-GDP ratio. At this stage, debt is sustainable, and governments can systematically respond to changes in public debt through primary surpluses by adjusting the primary fiscal balance. As a result, the increase in debt in the second stage improves the primary budget balance. In the last stage, despite the fiscal adjustment, which is made as part of the fiscal consolidation process, governments cannot respond to increases in debt with fiscal adjustments once the debt level rises and reaches a certain threshold level. At this stage, the rise in debt negatively affects the primary surplus. Some studies conclude that the rise in debt improves the primary surplus (Bohn, 1998; Semmler et al., 2007: 21-22). Moreover, in parallel with the current results of this study, the studies in the literature also conclude that an increase in debt improves the primary budget balance. (Bergman et al., 2016; Fabrizio & Mody, 2006; Debrun & Kumar, 2009; Debrun, 2013; Dimitri, 2021).

The effect of fiscal rules on the primary budget balance in the post-crisis period is statistically significant and positive in all models. Looking at the system GMM results in column 4, a one-unit increase in the fiscal rule index value raises the primary budget balance by 0.383 units. Given the model results in column 7, it is concluded that a one-unit increase in the fiscal rule index value improves the primary budget balance by 0.416 units. These coefficient values are lower than the pre-crisis period. This may be due to the negative impact of the 2008 crisis, as an external shock, on the fiscal situation of all EU countries and the subsequent negative budgetary impact of 2010 European debt crisis. In addition, situations such as the inability to apply fiscal rules or their suspension using escape clauses during crisis periods may also be a factor in reducing this effect.

For the post-crisis period, the effects on the primary budget balance are analyzed by creating dummy variables of the fiscal council, also assuming five different remits. It is evident that the fiscal councils monitoring of fiscal rules positively affect the primary budget balance at the 10% significance level (see column 4). In addition, the existence of fiscal councils that make recommendations is found to have a positive effect on the primary budget balance at the 5% significance level (see column 7). The effectiveness of the fiscal councils that provided recommendations and monitored the fiscal rules between 2009 and 2019, including the crisis years, is significant. Fiscal councils, which make forecast assessments, conduct long-term sustainability analyses and are in line with the objectives, were found to have no statistically significant effect on the primary budget balance.

Considering the model results reported in Table 4.6, all models are correctly specified according to the Wald test results. Looking at the Hansen test results; the null hypothesis cannot be rejected for all models and over-definition constraints are valid. As can be seen from the results of the seven models, there is a first-order autocorrelation, but no second-order autocorrelation. One of the crucial points is that the number of instrumental variables is smaller than the number of groups (countries), which is true for all models.

Table 4.6. System GMM results for the post-crisis period without interaction terms

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
L.pb	0.6661*** (0.043)	0.5937*** (0.048)	0.5826*** (0.051)	0.5832*** (0.051)	0.5904*** (0.050)	0.5966*** (0.047)	0.5759*** (0.050)
debt	0.0121*** (0.004)	0.0171*** (0.005)	0.0145*** (0.004)	0.0152*** (0.034)	0.0161*** (0.005)	0.0162*** (0.005)	0.0174*** (0.005)
growth	0.0622* (0.036)	0.0384 (0.034)	0.0339 (0.034)	0.0315 (0.034)	0.0441 (0.035)	0.0391 (0.034)	0.0294 (0.035)
inf	0.0656 (0.144)	0.1184 (0.159)	0.1265 (0.166)	0.1295 (0.167)	0.1160 (0.160)	0.1177 (0.158)	0.1391 (0.169)
unemp	-0.0308 (0.024)	-0.0469 (0.032)	-0.0402 (0.030)	-0.0439 (0.031)	-0.0401 (0.031)	-0.0427 (0.032)	-0.0534* (0.032)
to	0.0032*** (0.001)	0.0056*** (0.001)	0.0055*** (0.001)	0.0056*** (0.001)	0.0059*** (0.001)	0.0054*** (0.001)	0.0052*** (0.001)
kof	-0.0104** (0.005)	-0.0203** (0.008)	-0.0230** (0.009)	- (0.009)	- (0.008)	-0.0208** (0.009)	- (0.003)
fr		0.4515** (0.223)	0.3857** (0.188)	0.3826** (0.194)	0.3952* (0.222)	0.4160** (0.192)	0.4160** (0.210)
fc_fa			0.5270 (0.360)				
fc_mfr				0.5346* (0.314)			
fc_lts					0.2661 (0.220)		
fc_cwo						0.1461 (0.334)	
fc_re							0.6997** (0.301)
eu	-0.2640 (0.196)	-0.5418** (0.268)	-0.4852* (0.252)	-0.4561* (0.243)	-0.5407** (0.267)	-0.5219** (0.249)	-0.4720* (0.242)
Wald Test	1282.78 0.000	1513.21 0.000	1352.09 0.000	1388.64 0.000	1691.90 0.000	1573.32 0.000	1508.34 0.000
Hansen test	13.13 0.157	14.33 0.159	13.70 0.187	13.57 0.193	14.61 0.147	14.57 0.149	13.72 0.186
AR(1)	-2.38 0.017	-2.48 0.013	-2.46 0.014	-2.45 0.014	-2.47 0.013	-2.47 0.013	-2.44 0.015
AR(2)	0.32 0.746	0.19 0.846	0.27 0.783	0.26 0.794	0.24 0.813	0.21 0.832	0.24 0.810
Observations	280	280	280	280	280	280	280
Number of countries	28	28	28	28	28	28	28
Number of instrument	17	19	20	20	20	20	20

Note: The dependent variable is primary budget balance as defined in the data section. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Finally, the model results with interaction terms belonging to the post-crisis period are illustrated in Table 4.7. In models with interaction terms, the effects of growth, inflation, and unemployment variables on the dependent variable are statistically insignificant. On the other hand, it is concluded that a one-unit increase in borrowing and trade openness will increase the primary budget balance positively. An increase in the globalization index worsens the primary budget balance. In the results of the model with interaction terms, it is observed that the primary budget balance deteriorated in the countries that are members of the monetary union. In models with interaction terms, it has been observed that the primary budget balance has worsened in the countries that are members of the monetary union.

All of the interaction terms have a statistically significant and positive effect on the primary budget balance. These positive effects of the interaction terms, which show the situation where fiscal rules are supported by fiscal councils on the primary budget balance, allow crucial conclusions to be drawn. The fiscal rules apparently have positive effects on the primary budget balance and, thus, on the fiscal performance both in the pre-crisis and post-crisis periods. However, in the pre-crisis period, it is deduced that the fiscal councils, which only make forecast assessments, have a statistically significant and positive effect on fiscal performance alone (see Table 4.4). In the post-crisis period, fiscal councils, which monitor and give recommendations on fiscal rules, have been found to have a statistically significant and positive effect on fiscal performance (see Table 4.6). On the contrary, in both periods, it is found that all of the interaction terms have a statistically significant and positive effect on primary budget balance and fiscal performance in all models (see Tables 4.5 and 4.7). In the literature, studies showing that fiscal rules supported by fiscal councils positively affect the primary budget balance is in line with the current results in this study (Maltritz & Wüste, 2015; Dimitra, 2021). Maltritz & Wüste (2015) analyzed the effect of the interaction term on the fiscal performance using pooled OLS and fixed effect models in 27 EU countries. Dimitra (2021) analyzed the impact of interaction term on the primary budget balance with fixed and random effect models in PIIGCS and DFGNS. In this thesis, dynamic panel data models are used to analyze the effect of the interaction term in 28 EU countries.

According to the results of Wald test, the null hypotheses are rejected, and all models are correctly specified. When the Hansen test results are examined for the validity of the instrumental variables, it is concluded that the null hypothesis cannot be rejected in all models and excessive definition constraints are valid. It is also clear that there is no

autocorrelation problem in the model results. In addition, the number of instrumental variables is lower than the number of groups in all models.

Table 4.7. System GMM results for the post-crisis period including interaction terms.

Variables	(1)	(8)	(9)	(10)	(11)	(12)
L.pb	0.6661*** (0.043)	0.6076*** (0.046)	0.6070*** (0.046)	0.6140*** (0.044)	0.6162*** (0.046)	0.6226*** (0.046)
debt	0.0121*** (0.004)	0.0144*** (0.005)	0.0146*** (0.005)	0.0144*** (0.005)	0.0146*** (0.004)	0.0157*** (0.005)
growth	0.0622* (0.036)	0.0459 (0.035)	0.0445 (0.035)	0.0529 (0.036)	0.0495 (0.036)	0.0486 (0.034)
inf	0.0656 (0.144)	0.0957 (0.154)	0.0953 (0.153)	0.0992 (0.147)	0.0974 (0.155)	0.0995 (0.154)
unemp	-0.0308 (0.024)	-0.0410 (0.027)	-0.0425 (0.027)	-0.0330 (0.026)	-0.0378 (0.028)	-0.0423 (0.027)
to	0.0032*** (0.001)	0.0045*** (0.001)	0.0046*** (0.001)	0.0050*** (0.001)	0.0043*** (0.001)	0.0040*** (0.001)
kof	-0.0104** (0.005)	-0.0157*** (0.006)	-0.0157*** (0.006)	-0.0178*** (0.006)	-0.0158** (0.006)	-0.0157*** (0.006)
fr*fc_fa		0.3255* (0.175)				
fr*fc_mfr			0.3221* (0.169)			
fr*fc_lts				0.3949*** (0.141)		
fr*fc_cwo					0.3068* (0.159)	
fr*fc_re						0.3306* (0.198)
eu	-0.2640 (0.196)	-0.4483* (0.256)	-0.4264* (0.247)	-0.4717** (0.237)	-0.4463* (0.264)	-0.3581 (0.227)
Wald Test	1282.78 0.000	1909.35 0.000	2039.05 0.000	1589.83 0.000	1373.28 0.000	1693.64 0.000
Hansen test	13.13 0.157	14.60 0.147	14.66 0.145	16.06 0.098	14.15 0.166	14.84 0.138
AR(1)	-2.38 0.017	-2.40 0.016	-2.40 0.016	-2.37 0.018	-2.38 0.017	-2.39 0.017
AR(2)	0.32 0.746	0.20 0.841	0.19 0.853	0.37 0.714	0.20 0.845	0.20 0.843
Obs.	280	280	280	280	280	280
Number of countries	28	28	28	28	28	28
Number of instruments	17	19	19	19	19	19

Note: The dependent variable is primary budget balance as defined in the data section. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

5. CONCLUSIONS AND POLICY RECOMMENDATIONS

The aim of this thesis is to analyze the impact of fiscal rules and fiscal councils on the fiscal performance of the EU-28 countries. To that end, the study first presents an overview of the definitions, reasons for their emergence, characteristics and scope of fiscal rules and councils, as well as the experiences of the EU countries with them in place. The study then reviews the empirical literature on the subject and conducts a dynamic panel data analysis to examine the impact of fiscal rules and councils on fiscal performance. The analysis is divided into two periods: before and after the 2008 crisis.

This thesis contributes to the existing studies in the literature and differs from them in several respects. Firstly, this thesis is the first study in the national literature at the graduate thesis level. Moreover, this thesis compiles a unique dataset covering the period from 1996 to 2019 for 28 EU countries. It uses this dataset to analyze the role of fiscal rules and fiscal councils in improving fiscal performance. Unlike previous studies, this dataset includes the data on of fiscal rule variable from the current dataset published by the EC for the 28 EU countries and the fiscal council dataset published by the IMF. Moreover, selecting five remits from among the seven ex-ante analysis remits in the IMF dataset and their inclusion in the analysis distinguishes this thesis from other studies. In addition, analyzing the pre-crisis and post-crisis periods separately is significant in terms of providing policy recommendations, which is another difference from other studies. Interaction terms are included in the analysis to analyze the impact of fiscal rules in the presence of fiscal councils on fiscal performance. In this context, this thesis contributes to the literature by demonstrating the positive effects of fiscal rule implementation supported by fiscal councils on fiscal performance using dynamic panel analysis.

This thesis also contributes to the literature in terms of the methodology used. In line with the research question of this thesis, it is widely accepted in the literature that dynamic panel data analysis provides more effective results compared to static methods. However, the majority of the previous studies on this subject have employed static panel data analysis methods. Studies using a dynamic model have generally used LSDV and LSDVC methods. Given that the primary budget balance, used as the dependent variable, is affected by lagged values, it is apparent that the analysis should incorporate a dynamic structure. Therefore, this study uses the system GMM analysis developed by Roodman (2009), which is known to provide more effective results.

The findings of this thesis, which employs the System GMM and uses the primary budget balance as a proxy of fiscal performance, are as follows:

- i. In both periods, a one-unit increase in the fiscal rule index has a positive effect on the primary budget balance. However, the magnitude of this positive effect decreases in the post-crisis period.
- ii. Dummy variables that represent different remits are included in the models in order to examine the impact of fiscal councils on fiscal performance. Fiscal councils, making forecast assessments in the pre-crisis period, have a statistically significant and positive effect on the primary budget balance. As for the post-crisis period, it is concluded that the fiscal councils, which recommend and monitor fiscal rules, have a statistically significant positive effect on the primary budget balance. Although the effects of other fiscal councils⁶¹ on the primary budget balance are positive, there is no statistically significant effect.
- iii. Interaction terms indicating the cases where fiscal rules are supported by fiscal councils have a positive effect on fiscal performance in both periods. It is observed that a one-unit increase in the fiscal rule index has a positive effect on the primary budget balance in the presence of fiscal councils, in terms of enhancing fiscal performance.
- iv. The analysis conducted for the pre-crisis period indicates that the variables of debt, growth and inflation have a positive effect on the primary budget balance, while unemployment and globalization seem to have a negative impact on the same. In the post-crisis period, it is observed that debt and trade openness have a positive effect on the primary budget balance. Globalization and being a member of the monetary union, on the other hand, have a negative effect on the primary budget balance.

This thesis compares the analyses made in before and after the 2008 global economic crisis. It is significant to interpret the effects of fiscal rules, fiscal councils and interaction terms on the primary budget balance for both periods. Fiscal rules improve the primary budget balance in both periods. However, this positive effect diminishes in the post-crisis period. The 2010 European debt crisis, which followed the 2008 crisis, also affected the

⁶¹ For the first period: $Fc_mfr, fc_lts, fc_re, fc_cwo$.
For the second period: Fc_fa, fc_lts, fc_cwo .

financial position of EU countries quite negatively. Although fiscal rules limited the ability to respond to the crisis and fiscal maneuverability, the support of fiscal rules with escape clauses helped overcome this challenge, along with the reforms made in the aftermath of the crisis. Budget deficits, which may arise in times of crisis with the effect of automatic stabilizers, can also eliminate the restrictive effect of the rules. The adverse effects of the crisis on the budget balance effectively reduced the positive impact of fiscal rules on the primary budget balance during that period. This thesis adds to the existing literature on the effect of fiscal rule in improving fiscal performance. In addition, it contributes to the policies that can be followed to improve the fiscal performance of countries that have yet to implement fiscal rules.

The impact of fiscal councils on fiscal performance differs in two periods. It is concluded that the impact of the fiscal councils making forecast assessments in the pre-crisis period, and that of those making recommendations and monitoring fiscal rules in the post-crisis period on the primary budget balance is statistically significant and positive. It is not possible to conclude that fiscal councils have a statistically positively effect on the primary budget balance in every model, such as fiscal rules. According to the results, fiscal councils that give recommendations and monitor the fiscal rules are seen as the key component for transforming the negative impact of the crisis on fiscal performance into positive. In the light of the findings of the thesis, it is recommended to give priority to the fiscal councils that monitor the fiscal rules and make recommendations within the scope of crisis exit strategies. Furthermore, seven of the 29 fiscal councils do not have the remit to give recommendations in EU countries. Besides, only two councils are not empowered to monitor the fiscal rules. In this context, it may be recommended to provide these councils with the authority to give recommendations and monitor the fiscal rules.

Based on the findings of the empirical study, it concluded that the joint implementation of fiscal rules and councils has a positive impact on fiscal performance in both periods. That is the interaction terms representing the support of fiscal rules with fiscal councils contribute positively to fiscal performance. Given these results, it is recommended that the implementation of fiscal rules in the presence of fiscal councils can be more effective in strengthening the fiscal framework of countries, promoting fiscal discipline, and ensuring macroeconomic stability. In this context, it is recommended to expand fiscal councils to increase the credibility of fiscal rules and improve fiscal performance.

The results obtained within the scope of the EU countries show that fiscal rules improve fiscal performance when supported by fiscal councils. Poland is the only EU country which applies fiscal rules, yet no fiscal council is in place. In Poland, fiscal rules should be supported by a fiscal council to strengthen the fiscal framework. Given the findings of this study, it is recommended, for the countries having fiscal rules in place but no fiscal council, to support fiscal rules with a fiscal council in order to contribute to fiscal performance by improving their budget balances.

As a result, the findings of this thesis provide significant insights for policymakers on the effect of fiscal rules and fiscal councils on fiscal performance, as well as guidance on which types of fiscal councils can improve fiscal performance during crisis exit periods. By highlighting the positive effects of fiscal rules when supported by fiscal councils, this thesis can assist policymakers in designing effective fiscal frameworks that promote fiscal discipline and macroeconomic stability.

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7. APPENDICES

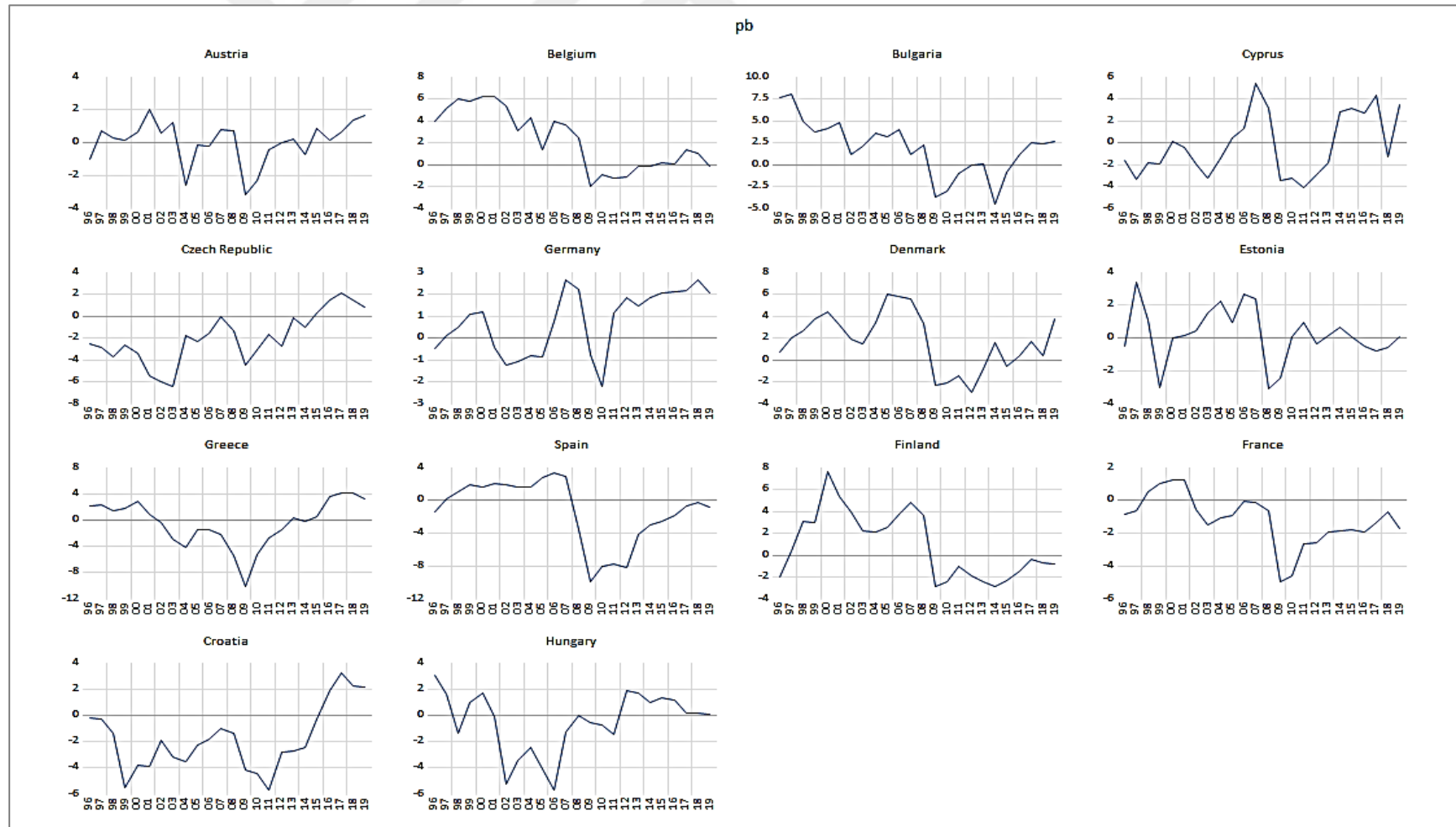


Figure 7.1. Primary budget balance in 28 EU countries

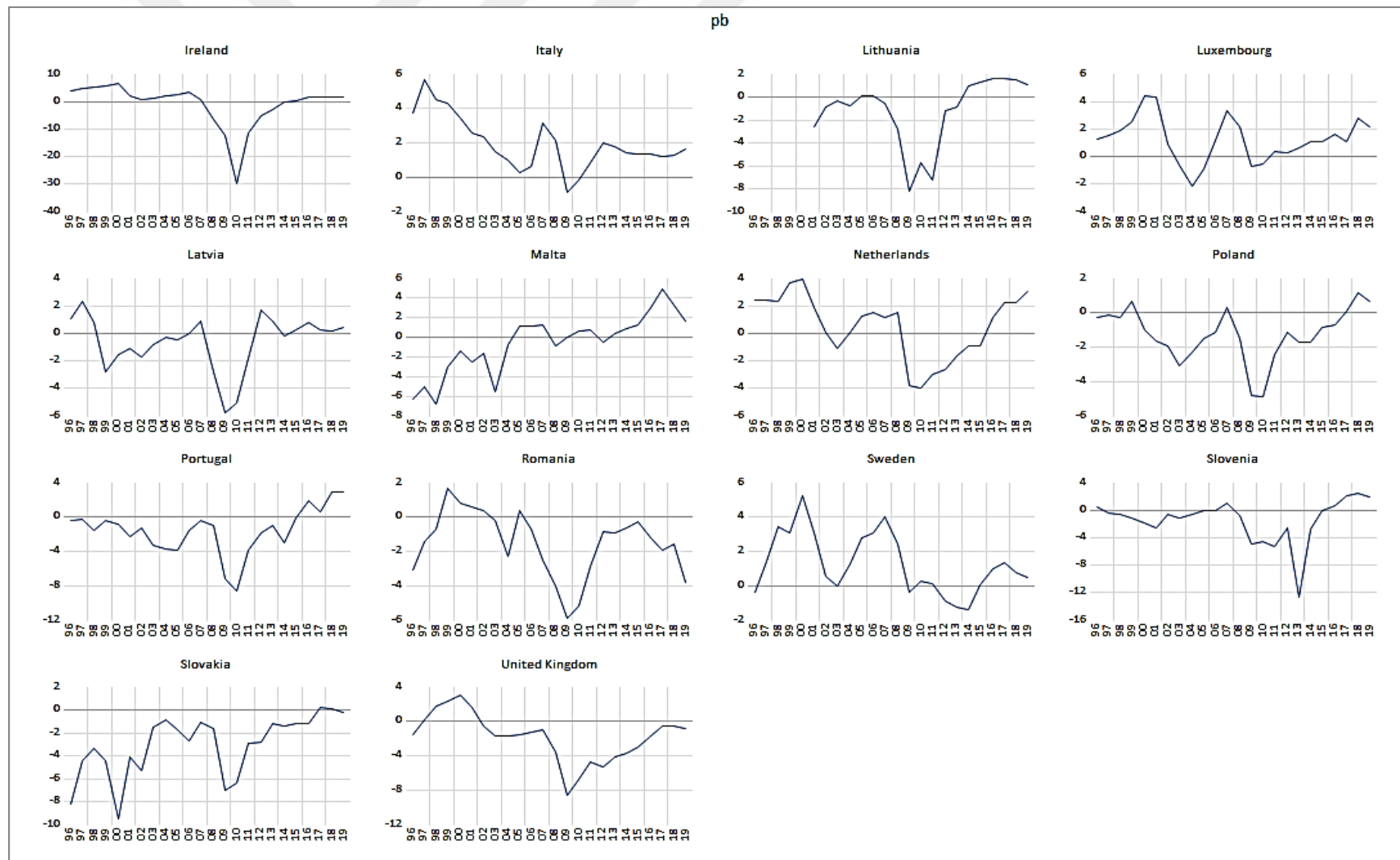


Figure 7.2. Primary budget balance in 28 EU countries

Table 7.1. Correlation matrix of variables from 1996 to 2008

	pb	debt	growth	fr	fa	mfs	lts	cwo	re	frefa	fremfs	frelts	frecwo	frere	kof	inf	unemp	to	eu
pb	1.00																		
debt	0.24	1.00																	
growth	0.03	-0.34	1.00																
fr	0.36	-0.13	-0.03	1.00															
fa	0.31	0.29	-0.17	0.26	1.00														
mfs	0.17	0.07	-0.14	0.25	0.81	1.00													
lts	0.32	0.30	-0.18	0.36	0.85	0.69	1.00												
cwo	0.32	0.30	-0.18	0.36	0.85	0.69	1.00	1.00											
re	0.17	0.07	-0.14	0.25	0.81	1.00	0.69	0.69	1.00										
Fr*fa	0.17	-0.05	-0.10	0.32	0.33	0.42	0.28	0.28	0.42	1.00									
Fr*mfs	0.18	-0.06	-0.10	0.32	0.34	0.43	0.29	0.29	0.43	0.98	1.00								
Fr*lts	0.20	0.00	-0.11	0.40	0.25	0.33	0.48	0.48	0.33	0.85	0.84	1.00							
Fr*cwo	0.20	0.00	-0.11	0.40	0.25	0.33	0.48	0.48	0.33	0.85	0.84	1.00	1.00						
Fr*re	0.18	-0.06	-0.10	0.32	0.34	0.43	0.29	0.29	0.43	0.98	1.00	0.84	0.84	1.00					
kof	0.27	0.29	-0.18	0.47	0.40	0.31	0.46	0.46	0.31	0.16	0.18	0.24	0.24	0.18	1.00				
inf	0.14	0.06	-0.33	-0.08	-0.04	-0.03	-0.04	-0.04	-0.03	-0.01	-0.01	-0.02	-0.02	-0.01	-0.15	1.00			
unemp	-0.18	0.04	0.05	-0.13	-0.23	-0.26	-0.30	-0.30	-0.26	-0.10	-0.10	-0.17	-0.17	-0.10	-0.42	0.08	1.00		
to	-0.005	-0.26	0.21	-0.03	0.01	-0.08	0.04	0.04	-0.08	-0.02	-0.01	0.01	0.01	-0.01	0.03	-0.03	-0.32	1.00	
eu	0.21	0.33	-0.20	0.16	0.11	0.01	0.19	0.19	0.01	-0.07	-0.03	0.02	0.02	-0.03	0.49	-0.07	-0.25	0.04	1.00

Table 7.2. Correlation matrix of variables from 2009 to 2019

	pb	debt	growth	fr	fa	mfs	lts	cwo	re	frfa	frmfr	frlts	frcwo	frre	kof	inf	unemp	to	eu
pb	1.00																		
debt	0.03	1.00																	
growth	0.37	-0.16	1.00																
fr	0.42	-0.07	0.32	1.00															
fa	0.38	0.26	0.25	0.38	1.00														
mfr	0.36	0.16	0.26	0.38	0.89	1.00													
lts	0.31	0.22	0.10	0.49	0.62	0.55	1.00												
cwo	0.31	0.19	0.22	0.46	0.77	0.71	0.68	1.00											
re	0.34	-0.04	0.25	0.25	0.71	0.77	0.42	0.52	1.00										
Fr*fa	0.39	0.01	0.32	0.78	0.60	0.56	0.52	0.50	0.37	1.00									
Fr*mfr	0.38	-0.04	0.32	0.77	0.55	0.62	0.49	0.48	0.40	0.96	1.00								
Fr*lts	0.37	0.03	0.22	0.81	0.38	0.37	0.69	0.47	0.24	0.79	0.76	1.00							
Fr*cwo	0.37	-0.04	0.31	0.85	0.41	0.41	0.53	0.61	0.24	0.84	0.82	0.88	1.00						
Fr*re	0.33	-0.24	0.34	0.58	0.47	0.51	0.43	0.38	0.67	0.73	0.75	0.56	0.60	1.00					
kof	0.11	0.16	0.10	0.20	0.30	0.18	0.35	0.42	0.09	0.11	0.06	0.20	0.19	0.08	1.00				
inf	-0.08	-0.23	-0.07	-0.24	-0.16	-0.16	-0.11	-0.09	-0.12	-0.29	-0.29	-0.21	-0.26	-0.25	-0.13	1.00			
unemp	-0.29	0.47	-0.29	-0.12	-0.07	-0.06	-0.14	-0.14	-0.06	-0.14	-0.14	-0.15	-0.17	-0.19	-0.33	-0.17	1.00		
to	0.21	-0.36	0.32	-0.04	-0.04	-0.06	-0.21	0.02	0.10	-0.02	-0.03	-0.09	0.03	0.08	-0.07	0.01	-0.29	1.00	
eu	0.05	0.39	0.00	0.12	0.08	-0.01	0.12	0.11	-0.05	0.19	0.14	0.16	0.19	0.02	0.21	-0.20	0.08	0.21	1.00

Table 7.3. System GMM results for the 1996 and 2008 period without unemployment variable and interaction terms

Variables	(1)	(2)	(3)	(4)	(5)
L.pb	0.7271*** (0.090)	0.7121*** (0.082)	0.7127*** (0.080)	0.7109*** (0.081)	0.7123*** (0.081)
debt	0.0090* (0.006)	0.0158*** (0.005)	0.0133*** (0.004)	0.0158*** (0.005)	0.0134*** (0.004)
growth	0.1643*** (0.064)	0.1881*** (0.060)	0.1990*** (0.060)	0.1987*** (0.061)	0.1969*** (0.060)
inf	0.0045*** (0.001)	0.0054*** (0.001)	0.6044*** (0.153)	0.0056*** (0.001)	0.0056*** (0.001)
to	-0.0013 (0.003)	-0.0003 (0.002)	-0.00004 (0.002)	-0.0006 (0.002)	-0.0001 (0.002)
kof	-0.0116 (0.007)	-0.0164 (0.006)	-0.0165*** (0.005)	-0.0183*** (0.006)	-0.0162*** (0.005)
fr		0.7129*** (0.173)	0.6044*** (0.153)	0.6509*** (0.170)	0.5891*** (0.163)
fc_fa			0.7312** (0.332)		
fc_mfr				0.6925 (0.426)	
fc_lts					0.5734 (0.335)
eu	0.1748 (0.318)	0.0282 (0.261)	0.0697 (0.243)	0.0754 (0.247)	0.0354 (0.243)
Wald Test	387.21 0.000	722.29 0.000	1130.52 0.000	760.00 0.000	889.62 0.000
Hansen test	9.73 0.284	9.60 0.384	8.18 0.516	8.86 0.450	8.93 0.444
AR (1)	-3.86 0.000	-3.64 0.000	-3.63 0.000	-3.64 0.000	-3.64 0.000
AR (2)	0.97 0.332	1.06 0.291	1.09 0.276	1.08 0.274	1.08 0.282
Observations	331	331	331	331	331
Number of countries	28	28	28	28	28
Number of instruments	16	17	18	18	18

Note: The dependent variable is primary budget balance as defined in the data section. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 7.4. System GMM results for the 2009 and 2019 period without unemployment variable and interaction terms

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
L.pb	0.7156*** (0.045)	0.6493*** (0.044)	0.6303*** (0.047)	0.6355*** (0.046)	0.6459*** (0.047)	0.6470*** (0.043)	0.6350*** (0.046)
debt	0.0102*** (0.003)	0.0135*** (0.004)	0.0113*** (0.003)	0.0118*** (0.003)	0.0128*** (0.004)	0.0126*** (0.003)	0.0133*** (0.003)
growth	0.0604 (0.039)	0.0461 (0.037)	0.0400 (0.036)	0.0387 (0.036)	0.0502 (0.037)	0.0459 (0.037)	0.0395 (0.037)
inf	0.0968 (0.148)	0.1440 (0.162)	0.1489 (0.167)	0.1536 (0.169)	0.1382 (0.163)	0.1392 (0.159)	0.1654 (0.172)
to	0.0029*** (0.001)	0.0049*** (0.001)	0.0049*** (0.001)	0.0050*** (0.001)	0.0053*** (0.001)	0.0047*** (0.001)	0.0045*** (0.001)
kof	-0.0117** (0.005)	-0.0213*** (0.008)	-0.0239*** (0.009)	-0.0243*** (0.009)	-0.0228*** (0.008)	-0.0218*** (0.008)	-0.0252*** (0.009)
fr		0.3852* (0.201)	0.3242* (0.172)	0.3193* (0.176)	0.3141* (0.195)	0.3339** (0.167)	0.3512* (0.192)
fc_fa			0.5553 (0.385)				
fc_mfr				0.5390* (0.335)			
fc_lts					0.3224 (0.218)		
fc_cwo						0.2447 (0.342)	
fc_re							0.6403** (0.298)
eu	-0.2394 (0.169)	-0.4610** (0.232)	-0.4128* (0.226)	-0.3795* (0.213)	-0.4668** (0.229)	-0.4390** (0.218)	-0.3902* (0.216)
Wald Test	1274.10 0.000	1327.10 0.000	1387.53 0.000	1391.41 0.000	1607.46 0.000	1495.61 0.000	
Hansen test	13.15 0.107	14.25 0.114	13.31 0.149	13.22 0.153	14.28 0.113	14.01 0.122	13.34 0.018
AR (1)	-2.29 0.022	-2.40 0.016	-2.40 0.017	-2.38 0.017	-2.40 0.017	-2.40 0.016	-2.38 0.018
AR (2)	0.29 0.772	0.21 0.836	0.23 0.775	0.27 0.787	0.25 0.803	0.23 0.816	0.25 0.802
Observations	280	280	280	280	280	280	280
Number of countries	28	28	28	28	28	28	28
Number of instruments	15	17	18	18	18	18	18

Note: The dependent variable is primary budget balance as defined in the data section. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 7.5. System GMM results for both periods without unemployment variable and including interaction terms

Variables	1996-2008			2009-2019		
	(8)	(9)	(10)	(8)	(9)	(10)
L.pb	0.7368*** (0.006)	0.7402*** (0.088)	0.7326*** (0.088)	0.6540*** (0.047)	0.6598*** (0.047)	0.6547*** (0.045)
debt	0.0101* (0.005)	0.0101* (0.006)	0.0099* (0.006)	0.0115*** (0.003)	0.0116*** (0.003)	0.0122*** (0.004)
growth	0.1785*** (0.063)	0.1786*** (0.063)	0.1787*** (0.063)	0.0524 (0.037)	0.0514 (0.037)	0.0556 (0.037)
inf	0.0047*** (0.001)	0.0047*** (0.001)	0.0048*** (0.001)	0.1204 (0.155)	0.1204 (0.154)	0.1235 (0.149)
unemp						
to	-0.0011 (0.003)	-0.0011 (0.003)	-0.0012 (0.003)	0.0041*** (0.001)	0.0040*** (0.001)	0.0046*** (0.001)
kof	-0.0141** (0.007)	-0.0140** (0.007)	-0.0139** (0.007)	-0.0177*** (0.006)	-0.0170*** (0.006)	-0.0190*** (0.006)
fr*fc_fa	1.2397* (0.675)			0.2800* (0.168)		
fr*fc_mfr		1.2180* (0.679)			0.2678* (0.160)	
fr*fc_lts			1.1282** (0.538)			0.3696** (0.136)
eu	0.2214 (0.298)	0.2014 (0.295)	0.1912 (0.293)	-0.3867* (0.235)	-0.3625* (0.223)	-0.4296*** (0.211)
Wald Test	420.78 0.000	429.87 0.000	412.15 0.000	1515.93 0.000	1650.50 0.000	1406.49 0.000
Hansen test	10.82 (0.288)	10.68 0.299	10.93 0.281	14.70 0.099	14.77 0.098	16.09 0.065
AR(1)	-3.81 0.000	-3.80 0.000	-3.80 0.000	-2.32 0.020	-2.32 0.021	-2.30 0.021
AR(2)	1.00 0.317	1.00 0.316	1.00 0.319	0.21 0.830	0.20 0.839	0.35 0.727
Obs.	331	331	331	280	280	280
Number of countries	28	28	28	28	28	28
Number of instruments	17	17	17	17	17	17

Note: The dependent variable is primary budget balance as defined in the data section. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 7.6. System GMM results for both periods without inflation variable

Variables	1996-2008			2009-2019		
	(2)	(3)	(4)	(2)	(3)	(4)
L.pb	0.7309*** (0.090)	0.7386*** (0.089)	0.7363*** (0.090)	0.5849*** (0.052)	0.5730*** (0.054)	0.5731*** (0.053)
debt	0.0163*** (0.005)	0.0142*** (0.004)	0.0160*** (0.005)	0.0160*** (0.005)	0.0135*** (0.004)	0.0142*** (0.004)
growth	0.1589** (0.071)	0.1628** (0.071)	0.1631** (0.072)	0.0299 (0.037)	0.0250 (0.038)	0.0226 (0.039)
unemp	-0.0369* (0.026)	-0.0269 (0.0236)	-0.0284 (0.025)	-0.0532 (0.0346)	-0.0473 (0.032)	-0.0512 (0.033)
to	0.0001 (0.002)	0.0001 (0.002)	0.0004 (0.002)	0.0055*** (0.001)	0.0054*** (0.001)	0.0056*** (0.001)
kof	-0.0100* (0.006)	-0.0111** (0.005)	-0.0122** (0.006)	-0.0161*** (0.005)	-0.0184*** (0.006)	-0.0186*** (0.006)
fr	0.5927*** (0.155)	0.5172*** (0.145)	0.5568*** (0.160)	0.4136** (0.199)	0.3489** (0.168)	0.3458** (0.174)
fc_fa		0.5011* (0.260)			0.5058 (0.340)	
fc_mfr			0.4608 (0.352)			0.5102* (0.291)
eu	-0.1843 (0.220)	-0.1415 (0.203)	-0.1364 (0.207)	-0.5490** (0.270)	-0.4958** (0.254)	-0.4688** (0.245)
Wald Test	739.74 0.000	1036.69 0.000	925.27 0.000	1384.43 0.000	1407.16 0.000	1455.59 0.000
Hansen test	7.73 0.562	7.62 0.573	7.80 0.555	11.34 0.253	11.08 0.270	10.98 0.277
AR(1)	-3.88 0.000	-3.88 0.000	-3.89 0.000	-2.52 0.012	-2.50 0.013	-2.49 0.013
AR(2)	0.95 0.340	0.98 0.329	0.98 0.326	0.14 0.889	0.21 0.832	0.20 0.843
Obs.	331	331	331	280	280	280
Number of countries	28	28	28	28	28	28
Number of instruments	19	20	20	19	20	20

Note: The dependent variable is primary budget balance as defined in the data section. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 7.7. System GMM results in which the kofegi62 variable is used instead of the kof variable

Variables	1996-2008			2009-2019		
	(2)	(3)	(4)	(2)	(3)	(4)
L.pb	0.6883*** (0.08)	0.6949*** (0.082)	0.6898*** (0.83)	0.5964*** (0.047)	0.5847*** (0.049)	0.5855*** (0.049)
debt	0.0156*** (0.005)	0.0132*** (0.004)	0.0152*** (0.005)	0.0158*** (0.006)	0.031*** (0.004)	0.0139*** (0.004)
growth	0.2004*** (0.067)	0.2071*** (0.067)	0.2054*** (0.068)	0.041 (0.339)	0.0374 (0.034)	0.0347 (0.034)
inf	0.0061*** (0.001)	0.0062*** (0.001)	0.0061*** (0.001)	0.1019 (0.159)	0.1102 (0.167)	0.1120 (0.168)
unemp	-0.0613** (0.026)	-0.0496** (0.024)	-0.0541** (0.026)	-0.0479 (0.032)	-0.0410 (0.167)	-0.0450 (0.031)
to	-0.0007 (0.003)	-0.0006 (0.003)	-0.0003 (0.003)	0.0063*** (0.002)	0.0064*** (0.002)	0.0065*** (0.002)
kofegi	-0.0086 (0.008)	-0.0103 (0.007)	-0.0101 (0.008)	-0.021** (0.009)	-0.0242** (0.011)	-0.0244** (0.010)
fr	0.6755*** (0.151)	0.5912*** (0.138)	0.6429*** (0.155)	0.4316** (0.223)	0.3670** (0.189)	0.3642* (0.194)
fc_fa		0.6101** (0.311)			0.5316 (0.373)	
fc_mfr			0.4359 (0.425)			0.5282* (0.324)
eu	-0.0879 (0.236)	-0.028 (0.218)	-0.0400 (0.227)	-0.5053* (0.266)	-0.4458* (0.249)	-0.4172* (0.240)
Wald Test	629.47 0.000	952.36 0.000	658.48 0.000	1738.02 0.000	1526.00 0.000	1579.54 0.000
Hansen test	8.95 0.537	7.98 0.631	8.61 0.570	14.05 0.171	13.20 0.212	13.14 0.216
AR(1)	-3.66 0.000	-3.67 0.000	-3.68 0.000	-2.47 0.014	-2.44 0.015	-2.44 0.015
AR(2)	1.07 0.285	1.09 0.274	1.09 0.275	0.20 0.840	0.29 0.775	0.27 0.787
Obs.	331	331	331	280	280	280
Number of countries	28	28	28	28	28	28
Number of instruments	19	20	20	19	20	20

Note: The dependent variable is primary budget balance as defined in the data section. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

⁶² Kofegi variable represent economic globalization index taken by KOF Swiss Institute.