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The Impact of Fiscal Rules on the Fiscal Deficit for Ten Countries of the European Union - Empirical Analysis for the Period 1995-2020

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ABSTRACT

This paper analyzes whether fiscal rules impact improved budget performance and fiscal discipline in the ten EU nations with the largest average fiscal deficit from 1995 to 2020. Fiscal performance will be reflected through the fiscal deficit adjusted for cyclical economic periods. The independent variables are real long-term interest rates, fiscal rules, public debt (expressed as a percentage of GDP), government effectiveness, and government spending (expressed as a percentage of GDP). The methodology used consists of empirical panel data through the OLS econometric model. With this model we have analyzed the responsiveness of the fiscal deficit, which have applied fiscal rules, by incorporating in the model other factors as well. The empirical results shows that fiscal rules, public debt, government effectiveness, and government spending statistically significantly impact the fiscal deficit. At the same time, the real long-term interest rate did not reach the level of statistical significance based on the model results.

1. INTRODUCTION

Due to the introduction of budgetary indicator limits and subsequent fiscal laws, financial indicators have been watched for a long time. Several administrations have emphasized the relevance of fiscal principles in constructing sound economic policies [1]. The Maastricht Treaty, agreed in 1992, in theory defines the framework for limiting the budget deficit and enforcing fiscal discipline in the European Union [2]. A year later, in 1997, came the Stability and Growth Pact [3]. Organizing and monitoring national budgetary policy was the goal of this agreement. A new draft of the Stability and Growth Pact was released for public comment in 2005 [4]. To put it another way, the 2008-09 financial crisis has already made the need of solid public finances even more apparent. Even in times of crisis, it is critical that public funds be spent wisely.

Over the last decade, public debt has increasingly become a worrying issue for many advanced countries, especially in the euro area. These countries implemented massive fiscal stimuli in 2009 in response to the severe downturns of the 2008 financial crisis. At the height of the 2008 financial crisis and monetary policy interest rates fell to their near-zero percent lower bound, fiscal policy was revived as the primary and almost sole active government policy tool to cope with the financial crisis effects. In 2011 countries started to reverse the course from fiscal expansion to fiscal consolidation to reduce the deficit and debt ratios, which were exacerbated by those fiscal stimuli with slow recovery and long-lasting recession Fiscal Consolidation, Public Debt and Output Dynamics in the Euro Area [5-8].

In subsequent recession and fiscal stimulus packages, practically all eurozone nations have exceeded the 3% and 60% thresholds stipulated in the European Monetary Union (EMU) Stability and Growth Pact (SGP). Consequently, rigorous austerity measures have been implemented to restore confidence, especially across the euro area's periphery. In contrast, recessionary effects were more pronounced, and the economic growth rate was still negative. The negative short-term spillovers undermined the incomplete path of recovery, meaning the Euro faced a dilemma of boosting economic growth while reducing public debt and deficit. The trade-off between boosting economic growth by fiscal stimuli to combat adverse effects on social welfare and employment, and reducing public debt and deficit through programs of fiscal adjustment (austerity, consolidation), depends on the size of the fiscal multipliers in each action [9, 10].

Following that, the EU Stability, Coordination, and Governance Treaty (the European Fiscal Pact) went into effect in 2013, mandating an independent institution at the national level of countries to monitor compliance with fiscal rules and thus check the compliance of macroeconomic forecasts to prepare each member country's budgets [11-13].

Emphasis on the importance of independent fiscal rules and advice is also linked to concerns about the growing budget deficit of many EU countries. Many years after the end of the financial crisis, the fiscal instability has plagued many EU countries; public debt levels, measured as (public debt / GDP) have remained at very high levels despite the low interest rates that have prevailed in the market. The massive growth in public debt in several EU nations, which generated fiscal issues in many countries (Greece, Spain, Portugal), demonstrated that fiscal rules alone are insufficient to maintain fiscal discipline unless an independent and competent fiscal authority monitors them. Many papers have supported this idea, such as problems with the implementation of fiscal rules in practice have led many scholars to seek a fiscal body that would enjoy the same independence as the Central Bank of the respective countries [14-16].

The purpose of this paper is to analyze whether fiscal rules have had an impact on the budget deficit of a group of EU countries for the period 1995-2020, taking into account other potential factors in the fiscal performance of these countries. Despite the fact that all ten EU countries studied in this paper have a similar level of development and qualified institutions, the effects of fiscal policies can vary depending on economic conditions (the business and financial cycle), assumptions about economic behavior, details of spending or tax changes, expectations of, and eventual realizations of, whether the policy is temporary or permanent, and what future policy changes result [17].

Focuses on 10 EU nations with the largest average government deficit between 1995 and 2020. (expressed as a percentage of GDP). For the duration of the study period, the goal is to evaluate the influence of certain elements on a relatively long period of time (even when some of these countries did not have fiscal rules initially). For this study, we used a combination of descriptive methods and panel data analysis to see if nations' fiscal regulations had an influence on their performance. Fiscal laws enhanced by independent budgetary counsel, according to economic intuition, would favorably benefit these nations' capacity to maintain fiscal sustainability. From these findings we will be able to make prediction of some macroeconomic indicators, for these countries in this way we can improve somewhat the life quality.

In order to maintain economic stability, governments adopt fiscal policy tools such as adjusting tax rates and spending allocations. To attain specific objectives, monetary and fiscal policy are usually utilized in conjunction. It is common for fiscal and monetary policy to aim to produce full employment, strong economic growth, and stable prices and wages. This is the main purpose of our paper: the establishment of these goals of government economic policy, as well as methods to attain them.

2. LITERATURE REVIEW

There are several research on fiscal policy in the realm of economic policy. Many nations have budget deficits that impact the growth rate of debt to GDP and a procyclical propensity to spend more when the economy is doing well. It is because of these variables that policymakers often veer from the path most suited to their goals. According to existing studies, fiscal laws may have a significant influence on determining a country's level of fiscal discipline (i.e., the deficit) [7, 18-23]. Studies by the European Commission also support the idea that strict fiscal rules are essential to public finances [24, 25].

To understand why fiscal restrictions must be implemented, it is vital to enquire. Arguments in this field's literature relate the deficit and high government spending to the political goals of those in power. To win re-election, many politicians choose to boost government spending or lower taxes during election years [26]. Since boosting government spending in particular times or certain sectors improves the chance of winning elections, governments tend to be less cautious and more opportunistic when it comes to expenditure. Establishing fiscal regulatory restrictions would prevent governments from going over their budgets as a result of this harmful effect on budgetary discipline [27].

In this study, Maltritz and Wüste [28] used panel data techniques to analyze the factors that contribute to primary budget balance in a group of 27 European Union countries. However, they also evaluated other macroeconomic parameters including debt, GDP, and the unemployment rate when assessing the relevance of fiscal regulations, fiscal councils, governance, and the impact of election pressures. They find that a higher level of debt helps to balance the budget and reduces deficits. During times of high unemployment and election years, they find that deficit spending is higher. Furthermore, they show that fiscal constraints reduce deficits dramatically. But they find no significant influence on the budget balance of GDP growth, bond rates or political inclination.

Keeping fiscal norms and sustainability as a tool for better policymaking is the goal of every fiscal policy activity. Fiscal regulations are only as strong as governments' desire to enforce them. Governments should be limited in their expenditure by numerical criteria (constraints) so that future budget projections may be taken into consideration when negotiating debt arrangements, according to the original concept. This has led to investigations on the link between effective governance and fiscal norm compliance, as well as the importance of effective governance and good governance in maintaining sound public finances [29, 30]. Some authors have shown that several political factors (governance system, government stability, mode of accountability) and macroeconomic factors (existing budget balance, able-bodied population structure) affect the likelihood that a country will apply the fiscal rule [31].

Although studies show that fiscal rules contribute to better management of public finances, their efficacy in improving the budget or fiscal balance is dependent on institutions' commitment to applying them, hence despite the results of many research In many studies looking at the impact of fiscal rules, the variable dummy (one) is utilized if the fiscal rule exists and zero if it does not, and the impact on deficit and debt levels is observed, according to the existing literature on fiscal rules [32].

It's important to remember that although some studies show the benefits of fiscal laws, others show how ineffective they are in preventing a dangerously high deficit from occurring. We saw this in the last section. The so-called "temporal mismatch" is one of the justifications. It's not uncommon for governments to deviate from budgetary regulations they've enacted in order to boost government expenditure and boost overall demand in the market. Following countries confront a heavier debt load and have limited room to maneuver in order to achieve long-term fiscal sustainability, which is still another reason against the complete adoption of fiscal regulations [33]. As several countries apply specific fiscal rules, for example, debt rules or government spending rules, others choose which type of fiscal rules to use to avoid those not in their favor [16].

Both country-specific research and empirical (econometric) analyses may be used to examine the impact of fiscal laws. We opted for the second option since it gives us a more complete picture of the locations and times we're looking at. An investigation of the fiscal performance of the European Union's fiscal laws and independent fiscal councils is the main goal of this research. The ten EU nations with highest average deficit rates from 1995 to 2020 are to be examined in this study.

3. RESEARCH METHODOLOGY

3.1 Econometric model of the study

To analyze the impact of fiscal rules on the fiscal performance of ten EU countries, we used the multiple regression method for panel data. The dependent variable in our model is the adjusted fiscal deficit (expressed as a percentage of GDP). Whereas the independent variables included in our model are: real long-term interest rate (ILRV), fiscal rules (dummy variable), public debt (expressed as a percentage of GDP), government effectiveness (measured by the WGI index) published by the World Bank and government expenditure (as a percentage of GDP). For the ten countries surveyed which had the highest average budget deficit rate for the period 1995-2020, the following econometric model is applied:

$$fd = \beta_0 + \beta_1 ltri + \beta_2 fr + \beta_3 pd + \beta_4\ ge + \beta_5\ gs + \varepsilon_{it} \qquad (1)$$

where:

fd - fiscal deficit adjusted for cyclical economic periods;
ltri - real long-term interest rate;
pd - public debt as a percentage of GDP;
ge - government effectiveness (index);
gs - government expenditures (as a percentage of GDP);
ε_{it} - error term.

3.2 Data sources and descriptive statistics of variables

Annual secondary data from various sources from 1995 to 2020 were used for this study. The inclusion of this timeframe is because, beginning in 1995, the EU expansion began with additional countries such as Austria, Finland, and Sweden and strengthened ambitions for a union even with European geographical extension. Table 1 presents the variables included in the model and the data source for each.

In this paper, the dependent variable is the fiscal deficit (adjusted for cyclical economic periods) expressed as a percentage of GDP. The adjusted deficit was used instead of the general fiscal deficit to remove the effect of business cycles on budget revenues and expenditures. For example, in periods of recession, budget revenues fall and vice versa. So, the purpose is to express the fiscal position of countries, excluding temporary factors which may occur in different economic cycles.

Table 2 presents some aggregated statistical indicators for the ten EU countries included in the study from 1995 to 2020.

The above indicators show that the average fiscal deficit adjusted for the ten countries surveyed for 1995-2020 was 4.34%. From other statistical indicators, it is worth noting that the maximum value of the long-term interest rate and public debt belong to Greece. In 2012, Greece's real long-term interest rate had reached 22.80%, while public debt reached 211.22% in 2020. Public debt (expressed as a percentage of GDP) for the period 1995-2020 was 75.09%. The government effectiveness index for the ten EU countries was 0.77, while the country with the lowest governance effectiveness index was Romania in 1998, with a value of -0.57. Government expenditures (expressed as a percentage of GDP) averaged 45.58% of Gross Domestic Product.

The following is Table 3 which represents the Pearson correlation coefficients.

The correlation coefficient is a statistical indicator that shows how strong the relationship between the two variables is. This coefficient can take values from -1 to +1; if the indicator's value is +1, this indicates that there is a strong positive correlation between the studied variables; if the value of the correlation indicator is -1, we have a strong relationship negative between variables. So, if the coefficient has a positive value, a positive increase of one variable is associated with a positive increase of the other variable and vice versa. From the variables included in the model, the relationship between the real long-term interest rate and the adjusted fiscal deficit is negative with r = -0.13 and significant at the level of 0.05. The link between fiscal rule and deficit is positive and significant at the same level. Whereas government expenditures (expressed as a percentage of GDP) and fiscal deficit have relatively weak negative correlations, the indicator is significant at the significance level of 1%.

Table 1. Description of variables

Variable Code	Variable Name	Type	Source	Unit Measure
fd	Adjusted fiscal deficit for cyclical economic periods	Dependent	AMECO database / European Commission	In percentage
ltri	Real long-term interest rate	Independent	AMECO database / European Commission	In percentage
fr	Fiscal rules	Independent	IMF's Fiscal Rules database	binary
pd	Public debt	Independent	International Monetary Fund	In percentage
ge	Government effectiveness (index)	Independent	World Governance Indicators (WGI), 2021	Index
gs	Government spending	Independent	European Commission	In percentage

Table 2. Statistical indicators for the variables taken in the study (period 1995-2020)

Variables	Observations	Average value	Maximum value	Minimum value	Standard deviation
Adjusted fiscal deficit for cyclical economic periods	260	-4.34	1.90	-19.40	3.05
Real long-term interest rate	231	2.24	22.80	-7.50	3.08
Fiscal rules	260	0.83	1	0	0.37
Public debt	255	75.09	211.22	12.43	37.50
Government effectiveness (index)	220	0.77	1.88	-.57	0.48
Government spending	260	45.58	62.80	33.20	5.97

Table 3. Pearson correlation coefficient

		Correlation between variables					
		Adjusted deficit (% of GDP)	Real long-term interest rate	Fiscal rules	Public debt (percentage of GDP)	Government effectiveness	Government expenditures (percentage of GDP)
Adjusted deficit (% of GDP)	Pearson Correlation	1	-.14 *	.14 *	-.03	.03	-.29 **
	Sig. (2-tailed)		.04	.03	.57	.63	.00
	N (observations)	260	231	260	255	220	260
Real long-term interest rate	Pearson Correlation	-.14 *	1	.12	.38 **	-.04	.31 **
	Sig. (2-tailed)	.04		.07	.00	.59	.00
	N (observations)	231	231	231	231	205	231
Fiscal rules	Pearson Correlation	.14 *	.12	1	.31 **	.23 **	.16 **
	Sig. (2-tailed)	.026	.072		.00	.01	.01
	N (observations)	260	231	260	255	220	260
Public debt (percentage of GDP)	Pearson Correlation	-.03	.38 **	.31 **	1	.06	.59 **
	Sig. (2-tailed)	.57	.00	.00		.39	.00
	N (observations)	255	231	255	255	218	255
Government effectiveness	Pearson Correlation	.03	-.04	.23 **	.06	1	.33 **
	Sig. (2-tailed)	.63	.59	.00	.39		.000
	N (observations)	220	205	220	218	220	220
Government expenditures (percentage of GDP)	Pearson Correlation	-.29 **	.32 **	.16 **	.59 **	.33 **	1
	Sig. (2-tailed)	.00	.00	.01	.00	.00	
	N (observations)	260	231	260	255	220	260

*. The correlation is significant at the level of 0.05. (on both sides).
**. The correlation is significant at the level of 0.01. (on both sides).

4. EMPIRICAL RESULTS AND DISCUSSION

In Table 4 we have presented the results of ordinary least square model (OLS), because our data is continuous and has no heterogeneity, and is approximately normal distributed. From this econometric model the respective coefficients for each variable included in the study in Table 4.

Between 1995 and 2020, twelve nations were examined. A total of 205 observations were verified since data for certain variables is missing for some countries in some years (observations). Using the Least Squares (OLS) model, the predicted Prob> f value is less than 5 percent, which is statistically significant. R-squared shows that the model has the explainability (R-squared = 0.192), which means that 19 percent of the variance in dependent variable (adjusted federal budget deficit) is explained by the independent variables used in the research (adjusted fiscal deficit). The fiscal rule has a statistically significant influence on the fiscal deficit at 5% (P = 0.037<0.05) from the independent factors. Furthermore, according to the findings of the econometric model, public debt, government effectiveness, and government expenditure are statistically significant at 5 percent.

As predicted by the model, the real long-term interest rate and government spending as a proportion of GDP both have an adverse effect on the fiscal deficit, with coefficients of -0.11 and -0.51 for these two variables. Fiscal regulations, public debt (measured as a percentage of GDP), and government performance all have positive factors that influence the ten nations' fiscal deficits.

Table 4. Summary of econometric model results

Variables / Models	OLS models	p-value
Real long-term interest rate	-0.11 (0.071)	0.133
Fiscal rules	0.14 (0.963)	0.037
Public debt (as a percentage of GDP)	0.31 (0.007)	0.000
Government effectiveness	0.22 (0.479)	0.002
Government expenditures (percentage of GDP)	-0.51 (0.048)	0.000
Number of validated observations	205	
R-squared	0.192	
Adj R-squared	0.172	
Prob> F	0.000	
F	9,463	

5. ECONOMETRIC MODELING

From Table 5 analyzing the depended variable Fiscal deficit fd also measured in percentage of the GDP, we can see that the

data have some Kurtotsis issues. Still, for Panel data, this is relatively good. The other independent variables Long term real interest rate *ltri* measured in percentage of the GDP, Fiscal rule *fr*, Public debt *pd* measure in percentage of the GDP, Government effectiveness *ge* presented as an index, and Government spending *gs* measured in percentage of the GDP, have no issues with non-normality of the data, thus letting us use the linear Panel Data modeling.

Table 5. Descriptive statistics

Variables	Observation	Standard Deviation	Mean	Median	Sum	Min	Max	Variance	Skewness	Kurtosis	t-value
ltri	231	3.085	2.236	2	516.5	-7.5	22.8	9.517	1.718	12.719	11.016
fd	260	3.055	-4.335	-3.85	-1127.1	-19.4	1.9	9.333	-1.197	5.612	-22.88
fr	260	.372	.835	1	217	0	1	.139	-1.801	4.245	36.153
pd	255	37.496	75.087	64.2	19147.23	12.43	211.22	1405.938	1.074	3.988	31.978
ge	220	.483	.774	.79	170.22	-.57	1.88	.233	-.285	3.118	23.76
gs	260	5.969	45.578	45.6	11850.2	33.2	62.8	35.632	.143	2.646	123.118

The only significant standard deviation is for the variable pd. Still, there is no problem with non-normality if we look at the Skewness and Kurtosis parameters. All the other variables are normally distributed and have no problem with Heteroscedasticity or outlier. Based on this, we can use the Panel data linear regression model.

Data Panel is a data structure with multiple records for one individual over time. Panel data describes phenomena observed at several points concerning the same subjects. The panel denotes repeated observations on each subject (individual or unit) and changes in this subject's behavior over time. Data Panel will be useful when we want to analyze Panel Data Model because Panel data can be used to analyze dynamic relationships between economic variables like share price and turnover. Panel Data consists of cross-sectional data which contains multiple records for one individual at different times. Measurement attached at each period will provide information about the individuals.

In contrast, if the observation includes only the measures taken by individuals at one particular point in time (cross-sectional), it is called Cross-Sectional Data. Panel and cross-sectional data always support time series analysis, a statistical technique for analyzing observations over multiple periods. Panel Data can be used to analyze the Panel data model in which the observation represents different periods. Panel data structure better describes how variables change over time or why individuals might have different behavior at the same time. Repeated observations collect panel data over one individual at several points, whereas cross-sectional data are collected by a single observation of an individual at only one point in time. Panel Data Model is a regression analysis method that uses random variables grouped into cross sectional units to capture unobservable characteristics that might affect the dependent variable and its relation with other explanatory variables (independent variable).

Analysis Panel Data means analyzing panel dataset where panel refers to set of statistics related to multiple measurements for each subject (individuals or things being studied). Panel Data are collected by repeated observations on one individual at different points in time. Panel dataset is used to describe phenomena that are observed over multiple periods. It explains how variables vary over time or why people may behave differently at the same time. Panel data contain cross-sectional units, making it possible for panel data analysis to absorb unobservable characteristics that might affect the dependent variable and its relationship with other explanatory variables (independent variable). Panel Data Model is a regression analysis method that uses random variables grouped into cross sectional units to capture unobservable effects that may affect the dependent variable and its relation with other explanatory variables (independent variable).

Model Level Panel Data Formula:

$$y_{it} = \beta_{it} + u_i + e_t \quad (2)$$

where: Panel Data, Panel Regression Analysis, Panel estimation model, Regression analysis on Panel Data, Best Linear Unbiased Estimation (BLUE), Covariance Matrix of Error Term Cov(e1,e2), Cov(e1) = Var(e1), and Cov(u1) = Var(u1) whereas Var(α)=E(α2).

where: Panel Member i Units, Panel data analysis, Panel estimation model Parameters (β) and (ui) (ε). Panel data analysis is the procedure that use a Panel estimation model to analyze Panel Data. Panel estimation model can explain or predict Panel Member i Unit on dependent variable Yit. Panel Data Analysis Explained Variance (β): Panel Member i Units' influence on a dependent variable (Yit)

The Hausman test is a statistical model specification test developed by Hausman (1978) and Tiao (1980). It can be used as a diagnostic tool to assess whether a random effects or fixed effects model should be used in an analysis. In this article, we'll walk through the Hausman model, how it works, how to use it, and why you would want to use it.

First, let's define some concepts. Panel data is an example of longitudinal data. Panel data involves studying multiple units (in this case, people) over time. Panel data often has more than one unit (person) measured per subject or individual. Panel datasets are ideal for studies that include changes over time or repeated events. Panel data can be contrasted with cross-sectional data, which only measure a single observation per person and thus does not involve any change over time. If you're reading this article because you have panel data in hand, your next question may be whether to use fixed-effects or random-effects models when analyzing your panel dataset. This choice lies at the heart of the Hausman test.

Before we discuss how to perform a Hausman test, we will discuss the difference between fixed effects and random-effects models. Panel data is a special longitudinal dataset where each individual (or unit) appears in multiple observations over time. Panel datasets allow us to measure changes within an individual, such as how an individuals' behavior may change over time. Panel data models involve plain old ordinary regression like what you learned about in your intro stats class or machine learning class, but with some added complexity! Panel data models include the concept of clustering - that is, we allow for correlation among observations on the same subject. For example: if our panel dataset includes information from many different subjects who

all work at the same office and attend the same classes throughout their college career, it makes sense that there would be some correlation between each of their observations. Panel data is also known as longitudinal data, because it involves looking at measurements taken one after another overtime for the same individual or cluster of individuals. Panel data models are similar to cross-sectional data models. They are both forms of regression models where we try to explain our outcome variable by using some set of predictor variables. Panel data models differ from cross-sectional datasets. They allow for changes within an observation (or cluster of observations) by allowing for repeated measures on the same unit (i.e., person).

After performing the Hausman test in our model we have a p-value of 0.00; thus, we must reject the Noll Hypothesis. Therefore, we must use the Fixed effect model for our panel data regression modeling. In Table 6 shows the regression results, and with an Overall R square of more than 10%, the model is relatively good. Nonetheless, it is worth acknowledging here that the between R square is more than 3%, but the within R square is 49.4%, meaning that the variances of the long-term fiscal deficit rate fd are better explained with the states' variance within a state between the years.

Table 6. Regression mode for panel data with fixed effect

Variables	Fixed Effect model
	fd
ltri	0.082
	(0.059)
fr	0.959
	(0.788)
pd	0.097***
	(0.009)
ge	0.130
	(0.955)
gs	-0.799***
	(0.067)
Constant	23.566***
	(3.344)
Observation	205
R-squared	0.495
Standard errors are in parenthesis	
*** p<0.01, ** p<0.05, * p<0.1	

According to the model, all independent variables, except government expenditure gs, positively influence public debt pd. Only gs and pd are highly significant and have an effect on the variance of public debt movements.

6. DISCUSSION OF RESULTS

From the findings of our study, it turns out that the fiscal rule impacts the adjusted fiscal deficit for the ten EU countries of this study, based on the sign of the coefficient of this variable. This is consistent with the author's results [34, 35], which found that fiscal rules and fiscal advice affect the improvement of fiscal performance of European Union countries and affect macroeconomic projections, to be more precise. In contrast, the real long-term interest rate turned out to have negative sign coefficients. Also, in the work of the authors the interest rate has a negative impact on the fiscal balance of EU countries for the period 2000-2014 [36].

Public debt (expressed as a percentage of GDP), based on the results of our model, has flowed to have a positive coefficient. Whereas, in the author's work where public debt had a negative impact on the fiscal deficit, the ratio was not significant even at 5%. The effectiveness of government, on the other hand, has a positive impact on the dependent variable, according to the coefficient of this variable. Our results are also consistent with the authors' findings who has studied, among other things, the impact of government effectiveness in setting the public debt ceiling of 152 countries for the period 1996-2016 [34, 37]. The government expenditure ratio was negative of the other independent variables, which was statistically at 1%.

7. CONCLUSION

This study has been motivated by the fiscal deficit that has characterized the European Union countries for many years, with special emphasis after the last financial crisis of 2008-2009. The paper is based on data published by the EU institutions, the International Monetary Fund, and other relevant agencies for the ten European Union countries in 1995-2020.

The econometric model results show that the variables of fiscal rule, public debt, government effectiveness, and government spending have reached the level of statistical significance, 5%, and 1%, and consequently impact the fiscal deficit of the studied countries. The real long-term rates interest rate has failed to be statistically significant, according to the OLS model data.

Determinants of the fiscal deficit may be broadened to include additional potentially relevant factors and to account for country-specific variations. The findings of this study might serve as a good starting point for future research on other nations and the factors of their respective economies. Further research may also concentrate on a sectoral analysis of government expenditure by determining which sectors contribute the most to fiscal deficits in various nations. The real practical implication of this paper is that it suggests that in order to improve the fiscal deficit these states should focus in public debt gathering money inside their countries instead of taking loans or other external methods.

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