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THE EFFECT OF MILITARY SPENDING EXEMPTIONS FROM FISCAL RULES ON PUBLIC DEBT IN THE EUROPEAN UNION

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ABSTRACT

Purpose- The research fills a serious policy gap by quantitative empirically determining the macro-fiscal effect of the exemption of military spending by the Stability and Growth Pact (SGP) rules of the European Union on the sustainability of public debt. The study is driven by the political argument of the year 2022 on whether defense expenditure or fiscal prudence should be given priority.

Methodology- The study is done using a balanced panel data of 27 EU member countries between the years 2000 and 2023. This methodology is quite stringent with the start of the diagnostic tests, the Pesaran CD test of cross-sectional dependence, and the Westerlund Cointegration Test, which proved the existence of a long-run equilibrium relationship between the variables. The primary model is a Fixed-Effects (FE) estimator to adjust to unobserved heterogeneity that the final results would be based on Driscoll-Kraay (1998) robust standard errors to address the documented cross-sectional dependence and serial correlation. The fundamental component of the model is an interaction term (Military Expenditure times Exemption Dummy) that aims at capturing the impact of the institutional change.

Findings- The empirical findings are very convincing in terms of their support to the hypothesis of the study. The interaction term is positive and quite significant ($p < 0.01$), which indicates that the process of exempting military expenditure on the SGP rules causes its effect on the accumulation of public debt to be significant. Although the baseline FE model proved to be fragile in certain control variables (e.g., GDP growth), the strong Driscoll-Kraay estimates prove that the impact of the institutional change is statistically dependable. Moreover, the control variables are also analyzed, which proves that both the government spending and the role of inflation as a debt-reducing factor have a very strong positive impact.

Conclusions: The paper comes to the conclusion that the policy option of bending the rules to spend on defense is not a fiscally neutral option, but has a quantifiable price in the form of sustaining debts. The results send a very strong signal to the SGP, with its credibility under attack, and it urges policymakers in the EU to focus on other methods of financing transparency, including common EU defense funds, rather than exemptions in an ad-hoc fashion. This study adds a well-timed, methodologically sound study to the current argument about the security necessity versus the fiscal stability of the Eurozone in the long term.

Keywords: Military expenditure exemptions, panel data analysis, EY fiscal rules, debt sustainability, public debt dynamics
JEL Codes: H56, H63, E62

1. INTRODUCTION

The Stability and Growth Pact (SGP) is the cornerstone of the fiscal architecture of the European Union, which is based on institutional and economic integration. Strict restrictions on public debt and budget deficits are imposed by the SGP, which was created to guarantee budgetary discipline among member states. This framework has been a source of stability as well as a hot topic of discussion (Blanchard et al., 2021). But after the conflict in Ukraine in 2022, the geopolitical landscape drastically changed, posing the EU's biggest security challenge in decades. To meet NATO's 2% of GDP target and strengthen collective defence capabilities, there is a broad and urgent consensus that significant increases in military spending are necessary (Tian, 2023).

The EU's strict fiscal regulations and the need to boost military spending have collided, resulting in a fundamental policy conundrum that is commonly summed up as "Guns vs. Debt Ceilings." On the one hand, there is a serious security risk associated with not increasing defence spending. However, funding this increase through conventional borrowing might force many member states—especially those with high levels of debt—to violate the SGP, which could lead to market

pressure and financial instability (Darvas, 2022). A ground-breaking policy debate has arisen in response to this tension: should military spending be given a special status, thereby exempting it from the SGP's debt and deficit calculations? Critics caution that such an exemption could set a risky precedent, damage the credibility of the entire fiscal framework, and open a "Pandora's box" of demands for similar treatment for other policy areas like social investment or climate change. Proponents contend that this is a necessary measure in extraordinary times.

The work aims to address a significant gap in the current literature by conducting the first serious empirical study of the impact of the statutory exemption for military spending on public debt in the European Union. Based on an extensive panel dataset that includes member states, we build on the traditional frame of analysis by considering the exemption as such, i.e., as a salient institutional change, to be a part of the explanatory variables. By using a fixed-effects specification with Driscoll-Kraay heteroscedasticity- and autocorrelation-robust standard errors to address the cross-country dependence problem, the analysis not only measures the baseline effect of defence expenditure on debt accumulation, but, more to the point, breaks down the effect of this relationship in an environment where fiscal constraints are being purposefully loosened to meet security demands. It is hoped that the expected outcomes can provide policy entrepreneurs with evidence-based suggestions in their machinations on the dangerous trade-offs between fiscal discipline and national security in the enrichment of the scholarly debate over Europe's nascent economic security architecture.

Within the framework of the inflexible institutional design dictated by the Maastricht requirement and the Stability and Growth Pact (SGP), the spiral of geopolitical tension has sparked a critical discussion about the legality and the wisdom of excluding the increasing military expenditures of the current fiscal paradigm. Despite the political connotations of this discussion being absolutely clear, the econometric analysis of the consequences of such a waiver is conspicuously lacking in the economic literature.

The mainstream literature (which, in most instances, has been limited to measuring the classical relationship between defence spending and the state debt) has so far failed to question the macro-fiscal implications of such a policy change. However, little serious attention has been paid to the long-term impact of such an exemption on the sustainability of debt, especially in nations where the level of indebtedness is high, or the possible spill-over effects that such an exemption has on fiscal credibility, inter-sectoral government spending, and the cost of debt in the capital market. This research gap, therefore, necessitates a shift away from the simplistic question: Does military spending affect public debt? to a more complex and sophisticated question: How does this effect vary when institutional rules governing it are changed?

This study is structured into six main sections. Section 1 introduces the research topic and outlines the study's objectives. Section 2 reviews the relevant literature on military expenditure and public debt. Section 3 describes the methodology, including the research design, data sources, and econometric techniques employed. Section 4 presents the empirical results derived from the statistical analysis. Section 5 discusses the findings, highlights the key challenges, and addresses the limitations of the study. Finally, Section 6 concludes the paper and offers policy implications and recommendations.

2. LITERATURE REVIEW

What remains in the extant literature on the nexus between military expenditure and civil debt is massed in their general aims, but differs on the issues of geographical focus, methodology, and empirical findings. In developed economies, the relationship between defence and debt has been studied mostly by providing scholarship on the relationship between defence and debt in European Union member states and the participants in the OECD. As an example, Bardakas et al. (2022) assessed the role of imports of defence equipment in the public debt of Greece and found that it did not make a significant difference, which contradicts the existing discourse that defence spending was the source of the debt crisis in the country. Equally, using a dynamic GMM framework in a cross-country study that considered the EU countries, Paleologou (2013) has established that military expenditure is a strong contributor to general government debt, thus justifying the perception of defence spending as a fiscal burden. The study by Nikolaidou (2016) indicated that short-term effects of military spending and arms imports increased Greek government debt (19702011), whereas investment turned out to create alleviation effects, and thus, it can be considered that the military-debt relationship is cyclical. Alexander (2013) extended the study to include OECD and NATO states with the Arellano Bond model and found the defence burden to be a statistically significant determinant of public debt and critiqued the literature that did not take into consideration the fiscal pressures associated with defence. In addition, Kollias et al. (2004) affirmed that internal and external debt (19602001) in Greece was negatively influenced by the high defence expenditure and by the political cycles. The same is confirmed by studies concerning smaller states in NATO, including the example published by Dudzevičiūtė et al. (2021), who show that the relationships are mixed and mostly inconclusive, which means that defence spending alone is not sufficient to explain the form of debt development in developed economies.

The correlation between military spending and debt seems to be more variable in developing and emerging nations. Azam and Feng (2017) illustrated the security-borrowing conundrum faced by developing nations by showing that military spending increases external debt in ten Asian nations, but that this effect is mitigated by economic growth and foreign reserves. Similarly, Esener and Ipek (2015) used Pooled OLS and dynamic panel estimations to find that increases in defence spending

significantly raise external debt across 36 developing nations. According to Georgantopoulos's (2011) findings, there is no causal relationship between military spending and external debt in Tunisia, Algeria, or Morocco, but there is a strong unidirectional causal relationship between defence spending and external debt in Egypt, suggesting that the effects differ significantly between nations. In South America, Dunne et al. (2004) reported that military burden affected external debt only in Chile, not in Argentina or Brazil, implying that broader macroeconomic conditions may override defence-related effects. Additionally, Dunne (2003) confirmed that military burden positively impacts external debt in small industrialising economies, particularly when dynamic adjustments are considered. In addition, Khan et al. (2021) examined 35 major arms-importing countries using annual panel data (1995–2016), dividing the sample by income level (upper-middle and lower-middle) and by region (MENA, South and East Asia, Latin America, Europe and Central Asia, Sub-Saharan Africa). Using pooled mean group estimators, the study found that military expenditure generally increases external debt, although it decreases external debt in Europe and Central Asia. The interaction term between military expenditure and the growth rate was positive and significant in all sub-samples except upper-middle-income countries, MENA, and Latin America. Their findings suggest that military expenditure tends to increase the external debt burden, particularly in countries with weak debt management systems, highlighting the need for economic policies that limit defence spending and strengthen debt sustainability.

It is evident from this review that, despite their diversity, the previous studies share a key feature: they examine the relationship between military expenditure and debt within a relatively institution-free context. According to the researcher's knowledge, no study has analysed this relationship within a changing framework of fiscal rules—such as the current debate in the European Union regarding the possibility of exempting military expenditure from the constraints of the Stability and Growth Pact (SGP). Therefore, the research gap lies in moving beyond merely measuring the direct impact of military spending to analysing how this impact changes when the institutional rules governing fiscal policy are adjusted. This is precisely the contribution that the present study seeks to make.

The knowledge of this nexus is further improved and deepened by recent research. Bardakas et al. (2023) also researched Greece and applied a 3SLS model and a non-linear quadratic form to the military debt in terms of imports of military equipment instead of expenditures. They come up with the conclusion that the impact of the defense equipment purchased since the 1980s has little effect on the public debt in Greece, and these purchases are more of an investment and not a consumption activity. Abbasov (2024) estimated the world military expenditure (41 countries) and fiscal deficits (41 countries) based on SIPRI, IMF, and the World Bank data and found that the fiscal deficit is above 2 percent and growing at a pace of 0.1 to 0.3 percent of the debt-to-GDP ratio due to an increase in military spending by a state of 1 percent of the GDP. Harutyunyan (2023) tested Armenia (19942020) through the Johansen cointegration and Granger causality tests and revealed that there were long-term interdependencies between military expenditure and external debt, with military spending triggering debt increase after two years. Makun (2025) employed a linear and nonlinear bounds testing of the ARDL model to investigate Fiji (1992-2021) and discovered that the increment or contraction of military expenditure has asymmetrical impacts on domestic and international debt, with the former having a stronger effect on debts than the latter. Using an SVAR model, Olejnik and Kuna (2025) examined 21 EU-NATO member states (1995-2023) and found that military spending was initially financed by debt but eventually increased revenues and reduced other expenditures, which indicated the fiscal multipliers and policy consequences. Sadiq et al. (2023) considered Pakistan (1972-2021) with ARDL, and the results indicate that a 1 percent rise in defense spending results in a 6.81 percent rise in the external debt. Ondráčková et al. (2024) compared the Czech Republic and Lithuania (1999-2022) and discovered that military spending does not affect indebtedness in the Czech Republic but does affect it in Lithuania. Durucan and Yeşil (2022) used system GMM on 25 countries (2000-2019) and reported that defense expenditure has a significant impact on government debt, budget deficit, and current account deficit. Haydory et al. (2022) applied SVAR models to the United States (1947-2021) and established that both the dynamics of defense and non-defense spending are highly determined by the debt-to-GDP shocks. El-Naser et al. (2025) consider the countries of the European Union after 2000-2022, using the GMM method, and discover that military spending is one of the main determinants that add to the intensity of a public debt, in particular during the emergence of compound shocks, like the one due to the COVID-19 pandemic and the Ukraine war, and that there are definite indications of the persistence of the debt through lagged effects. Focusing on Nigeria during 1970-2020, with the ARDL method, Okwoche and Nikolaidou (2022) demonstrate that armed conflict and military expenditure create a positive and statistically significant influence on external debt and total government debt, whereas they do not have a significant effect on domestic debt, which implies that a country funds defense expenditures through external debt. The use of descriptive and multivariate statistics in Dudzevičiūtė et al. (2021) among small EU countries, which are members of NATO in 2005-2019, shows that the correlation between military spending and the dynamics of the public debt is not consistent: in some countries, it is negative and in others, it is positive, which can be interpreted as the fact that the dynamics of the military expenditure cannot fully explain the dynamics of the general level of public debt. In the case of fragile African states, i.e., over 2000-2023, Aschalew and Alemu (2025) use System-GMM and dynamic sophisticated models to find a nonlinear relationship, i.e., where military spending above a critical threshold becomes a large contributor to external debt accruals, which constitute what they termed as a fiscal security trap. Lastly, a panel of 20 developing countries over 1970-2019 allows Ghulam and Saunby (2023) to

conclude that intermediate amounts of military spending can decrease the probability of sovereign default, but extreme spending results in high debt risk, especially in external form.

As can be seen in this review, the previous literature has mostly investigated the issue of military spending and debt in the context of institution-free settings, regardless of the methodological and regional variety. The relationship has not been studied in detail in relation to the effect of a shift in fiscal rules, including exemptions of military spending under the EU Stability and Growth Pact, on this relationship. Consequently, the research gaps are the ability to go beyond estimating the direct effects of military expenditures and examining the influence of institutional structures on the military spending-debt nexus, which the current study addresses.

3. DATA AND METHODOLOGY

This study examines the effect of Military Spending Exemptions on Public Debt in the EU. The analysis utilizes panel data and encompasses data from 27 EU member states: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden, covering the period from 2000 to 2023.

Table 1 delineates the variables included in our model, along with their acronyms, units, and data sources utilized to elucidate the correlation between Military expenditure and public debt.

Table 1: Variables Utilized in the Model

Name of Variables	Abbreviation	Unit	Source
Dependent variables			
Public debt	Debt	%GDP	Eurostat 2000-2023
Independent variables			
Military expenditure	Milit	%GDP	World Bank 2000-2023
Gross domestic product per capita	gdp	%growth	World Bank 2000-2023
Inflation rate	Inf	%Average Consumer Price	World Bank 2000-2023
Government expenditure	Ge	%GDP	IMF 2000-2023
Primary balance	Pb	%Annual	AMECO 2000-2023
Post-2022 dummy variable	Exemption_dummy	0/1	The author's calculation
Interaction term (milit+dummy)	ME_x_Dummy	Derived variable	The author's calculation

At the first stage, we run the panel unit root tests before the main estimations, and we have done a set of panel unit root tests to establish the stationarity characteristics of the variables, which is a necessary step to prevent spurious regression. We used a multi-faceted testing strategy to ascertain the strength of our results. In the first instance, we used two first-generation tests, the Im, Pesaran, and Shin (IPS) test (2003), which allows heterogeneity in the autoregressive parameter within the panel, and the ADF-Fisher Chi-square test, which is a combination of the p-values of the individual Augmented Dickey-Fuller tests in the panel of interest (Maddala and Wu 1999). We, however, noted that due to the great possibility of cross-sectional dependence in our sample of EU countries, we also adopted a second-generation unit root test, the Cross-Sectionally Augmented Dickey-Fuller (CADF) test formulated by Pesaran (2007). This improved test is strong for the existence of cross-sectional dependence by adding the cross-sectional averages of the lagged levels and first differences of a solitary series to the ordinary ADF regression. In all the chosen tests, the null hypothesis is that the variable has a unit root (is non-stationary), and the optimal lag length was calculated with the help of the Bayesian-Schwarz Information Criterion (BIC).

After the unit root analysis, we have conducted a formal test on the presence of cross-sectional dependence (CSD) across the panels. With the degree of economic and financial integration among the member states of the EU being high, one country is likely to spill over to other countries in case a shock is experienced in one country. To examine this, we have used the Pesaran (2004) CD test, which is resistant to non-stationarity and heterogeneity. The null hypothesis of the test is the cross-sectional independence. The outcome of this test is important in that the presence of CSD would invalidate the assumptions of this standard panel regression and would require the use of estimation methods that would give robust standard errors, like Driscoll and Kraay's (1998) technique.

To assess the effect of the military spending exemption on the public debt, this paper uses a panel data method. The basic model is defined as a Fixed-Effects (FE) model, and it is shown in Equation. FE estimator is selected to adjust for any unobserved, time-invariant country-specific traits (e.g., institutional quality or historical situation) that could be correlated with both the regressors and the dependent variable, thus reducing the risk of omitted variable bias.

Nevertheless, due to the presence of a high probability of cross-sectional dependence in the panel as postulated by the Pesaran (2004) CD test, the standard errors of the traditional FE model could be subject to bias and inaccuracy. To solve this

serious problem, the model is also estimated through the Driscoll and Kraay (1998) standard errors methodology. The result of this method is the generation of strong standard errors that have been adjusted for the existence of extremely broad types of cross-sectional dependence, heteroskedasticity, and serial correlation. Thus, the FE model can be used in obtaining the first estimates; the model that includes Driscoll-Kraay standard errors is deemed to be the most important and the strongest specification to perform the hypothesis test and make conclusions.

$$Debt_{it} = \beta_0 + \beta_1 \ln\_milit_{it} + \beta_2 GDP_{it} + \beta_3 inf_{it} + \beta_4 ge_{it} + \beta_5 pb_{it} + \beta_6 \text{Exemption\_dummy}_{it} + \beta_4 \text{ME\_x\_Dummy}_{it} + \varepsilon_{it} \quad (1)$$

Where Debt is the public debt, ln is the logarithm of the Military expenditure, ln. Increased military expenditure, particularly on the acquisition of arms, is more likely to result in more borrowing and accumulated debt, especially in the developing world. This adverse effect is possible since military spending tends to build a budget deficit that is financed through borrowing, thereby increasing the growth of public debt (Brzoska 1983; Looney 1989).

Moreover, the regression analysis includes the growth of GDP per capita as an indicator to determine the economic growth against the public debt. Imran (2016) also argues that the larger the economic growth, the higher the domestic revenue and the less the borrowed money will be necessary. Inflation rate (Inf) is included to measure its contribution to the dynamics of debt. Imran (2016) confirms that the rise in inflation reduces the value of debts by reversing the interest rates. Moreover, government spending or government expenditures (GE) may also increase faster in comparison with government revenues, necessitating borrowing and, accordingly, increasing the national debt, as elaborated by Uguru (2016). The primary balance (PB) is also incorporated into fiscal discipline, which makes a high or positive primary balance decrease the necessity to borrow funds and, accordingly, the level of public debt, and a negative primary balance increases debt (Hakkio and Rush, 1991).

To reflect the changes that may occur after 2022, I developed a post-2022 dummy variable (Exemption_dummy), which has a 1 = 2022 years and 0 = non-2022 years. Also, a term of interaction (ME_x_Dummy) was calculated, which was the product of the logarithm of ME with the dummy, and then the analysis could be performed to identify whether the impact of military expenditure on public debt varies in the post-2022 period.

Table 2 below presents the essential descriptors of the variables utilized across all EU27 countries from a statistical standpoint.

Table 2: Descriptive Statistics EU27 Countries

Variable	Obs	Mean	Std. dev.	Min	Max	Skewness	Kurtosis
Debt	648	60.09	35.49	3.8	207	1.0326	4.3454
ln_milit	647	0.2743	0.4534	-1.49	1.35	-0.9406	4.4127
Gdp	648	2.42	3.80	-14.8	24.5	-0.4274	6.9246
Inf	648	3.05	3.74	-1.7	45.7	4.4170	38.3469
Ge	621	0.2141	0.0191	0.1720	0.3315	1.0056	5.9846
Pb	648	-0.4867	3.30	-29.3	9.6	-1.3265	11.8346
Exemption_dummy	648	0.0833	0.2765	0	1	4.5873	22.0434
ME_x_Dummy	647	0.0360	0.1852	-1.49	1.34	5.9440	45.4316

As shown in Table 2, the descriptive statistics showed that the dataset employed in the model is a strong panel structure out of 648 observations. The average public debt as a percentage of GDP is 60.09, with a very large standard deviation of 35.49, which indicates that there is a great variation in the level of debt among the EU countries, with the lowest level of 3.8 to the highest level of 207. The average military spending (military spending after log transformation, ln military) is 0.2743, which means that the average military spending (military spending before the logarithm) is more than 1/4 of GDP. Macroeconomically, the average economic growth (GDP) is 2.42, and the average inflation (Inf) is 3.05, with some high outliers of up to 45.7, thus the necessity to use of strong means to bring about heteroskedasticity. In terms of government spending, the mean of Ge was 0.2141 (i.e., approximately 21.41 per cent of GDP), the standard deviation of which was very low (0.0191), which means that slight variations in government spending occurred among countries. The primary balance (Pb) has an average of -0.4867, indicating that, on average, governments have been operating with a primary deficit (i.e., spending more than they collect before paying interest), and the value of -29.3 to 9.6 indicates that there is a wide span of fiscal discipline across the states. The mean of the dummy variable (Exemption_dummy) is 0.0833, which is an indicator that the structural change period (2022 and above) is estimated to contribute about 8.33% towards the total period of the study. In the meantime, the interaction term (ME x Dummy) is 0.0360, which proves the fact that these variables record the overall impact of military expenditure in the given structural change.

4. FINDINGS AND DISCUSSIONS

Table 3 of the correlation indicated that the interaction term (ME_x_Dummy) is positively and significantly related to the public debt (Debt), both with the correlation coefficients of 0.0798 and 0.1678, respectively, and that the military expenditure (ln_milit) is positively and significantly related to the public debt(Debt), with the correlation coefficients of 0.0798 and 0.1678, respectively. This is in line with the hypothesis that the new post 2022 military spending environment is linked to high levels of debt. The correlations that the economic theory requires can also be affirmed by the matrix since the correlation of the public debt is strong and negative towards economic growth (GDP, the coefficient is -0.2620) and inflation (Inf, the coefficient is -0.2173), but it is positive towards general government expenditure (Ge, the coefficient is 0.1571). Concerning the relationships between the independent variables, the correlation between the interaction dimension (ME x Dummy) and its elements (ln milk and Exemption dummy) is within reasonable bounds (0.3060 and 0.6521), which proves that multicollinearity is not critical and that the model is suitable to be used in the advanced econometric analysis.

Table 3: Correlation Matrix EU27

	Debt	ln_milit	Gdp	Inf	ge	Pd	Exemption _dummy	ME_x_ Dummy
Debt	1.0000							
ln_milit	0.1678***	1.0000						
Gdp	-0.2620***	-0.1227***	1.0000					
Inf	-0.2173***	0.2274***	0.1310***	1.0000				
Ge	0.1571***	-0.1388***	-0.1306***	0.1609***	1.0000			
Pb	-0.1116***	-0.229***	0.3321***	-0.0221	-0.0963***	1.0000		
Exemption_dummy	0.0554	0.1093***	-0.0106	0.4693***	0.5019***	-0.0462	1.0000	
ME_x_Dummy	0.0798***	0.3060***	-0.0603	0.3642***	0.2958***	-0.0348	0.6521***	1.0000

Significance levels are indicated by *, **, and *** for 1%, 5%, and 10%, respectively.

Table 4 indicates that the panel unit root tests (IPS, ADF-Fisher, and CADF) results indicate that the variables employed in the study have mixed orders of integration. The results suggest that the economic growth (GDP) and inflation (Inf) are stationary at the level and therefore are of order zero (I (0)). However, in contrast, public debt (Debt), military expenditure (lnmilit), government expenditure (Ge), and the primary balance (Pb) do not have the level stationarity and are then statistically stationary on first differencing, which proves that they are of order one integrated (I (1)).

Table 4: Panel Unit Root Tests

Variables	IPS test	ADF fisher	CADF test
Debt	1.5442	56.56	-1.351
ln_milit	0.8091	71.66	-2.596***
Gdp	-11.695***	297.13	-5.796***
Inf	-5.253***	123.05	-5.488***
Ge	4.0195	34.54	-4.780***
Pb	-5.5753***	128.04	-0.745
Tests in first logarithmic differences 23.11			
Debt	-9.5979***	180.3***	-3.044***
ln_milit	-10.4309***	233.9***	-8.201***
Gdp	15.9033***	716.4***	-13.395***
Inf	-13.5526***	429.3***	-12.422***
Ge	-9.8390***	319.6***	-7.233***
Pb	-13.1928***	373.05***	-9.002***

***, **, * Indicate the rejection of the null hypothesis of a unit root at the 90%, 95%, and 99% significance levels, respectively, along with the critical values: −2.45 (1%), −2.25 (5%), −2.14 (10%)

The null hypothesis that there is no cross-sectional dependence is categorically rejected for every variable in the model, according to the Pesaran Cross-Sectional Dependence Test (Pesaran CD Test) results in Table 5, where the p-value for every variable is 0.000. This suggests that the 27 EU nations have a strong and statistically significant cross-sectional dependence, which means that shocks or changes in one nation have an impact on the others. Given the strong institutional and economic ties within the European Union, this kind of cross-sectional dependence is to be expected.

Table 5: Pesaran CD Test

Variables	CD-test	P-value	corr	abs (corr)
Debt	40.12	0.000	0.447	0.618
ln_milit	35.79	0.000	0.399	.0464
Gdp	59.12	0.000	0.659	0.689
Inf	68.22	0.000	0.760	0.760
Ge	70.28	0.000	0.784	0.801
Pb	39.85	0.000	0.444	0.453
Exemption_dummy	91.64	0.000	1.000	1.000
ME_x_Dummy	43.40	0.000	0.472	0.981

Note: The Pesaran (2004) CD test checks for cross-sectional dependence. Significant p-values indicate the presence of cross-sectional correlation among the units in the panel.

The baseline fixed-effects model (Column 1) indicates statistically significant relationships for the majority of variables, according to the estimation results in Table 6; however, these results may be skewed because cross-sectional dependence was not included. As a result, the more solid and trustworthy specification used in the study is the Driscoll–Kraay model (Column 2). The main conclusion of the analysis is revealed by the corrected results: the interaction term (ME_x_Dummy) shows a positive and highly significant coefficient (12.318, $p < 0.01$), confirming that during the exemption period, the relationship between military spending and public debt has fundamentally changed and become more positive. The statistical significance of other variables, such as GDP growth (GDP), vanishes, indicating that the effects of government expenditure (Ge) and inflation (Inf) on public debt were weak. The within R-squared of 0.1926 indicates that the model explains about 19.3% of the variation in public debt. Overall, the study's main hypothesis is supported by the strong results, which show that exempting military spending from fiscal regulations has, in fact, increased its impact on the accumulation of public debt in the countries included in the sample.

Table 6: Fixed Effects Estimates with Driscoll–Kraay Standard Errors

	Fixed effect		Driscoll kraay	
Dependent variable: Debt				
Variables	**Coef.**	**St. Err**	**Coef.**	**St. Err**
ln_milit	-9.5833	3.5748 ***	-9.5833***	5.4027
Gdp	-0.4647	0.1850***	-0.4647*	0.4641
Inf	-1.3364	0.2305***	-1.3364***	0.5541
Ge	268.8	44.34***	268.8***	122.13
Pb	-0.3152	0.2285*	-0.3152*	0.4976
Exemption_dummy	2.7597	3.4664*	2.7597*	6.8229
ME_x_Dummy	12.318	4.5063***	12.318***	3.7995
_cons	9.7864	9.4451*	9.7864*	25.54
Obs		620		620
R-squared		0.0442		0.1926
Prob		0.0000		0.0001
F statistic		19.97		7.59

Standard errors in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

5. CONCLUSION AND IMPLICATIONS

The purpose of this study was to examine a crucial and pertinent question at the nexus of security and fiscal policy: what is the impact on public debt of exempting military spending from EU fiscal regulations? The study offers a precise and reliable response by examining panel data for 27 EU member states from 2000 to 2023. Based on a Fixed-Effects model corrected with Driscoll-Kraay standard errors to ensure robustness against cross-sectional dependence; the main finding is that these exemptions have a real and negative effect. The analysis shows that although there is a complicated relationship between military spending and public debt, exempting it from fiscal regulations fundamentally changes this dynamic and greatly increases its beneficial impact on debt accumulation. Every percentage point increase in military spending during the exemption period contributed more to the public debt than it did before, as confirmed by the highly significant coefficient of the interaction term. This result implies that the "guns vs. debt ceilings" conundrum is a quantifiable fiscal reality rather than merely a theoretical trade-off.

The analysis's policy implications are substantial and have a big impact on EU policymakers. The results draw attention to the dangers of relaxing fiscal regulations by exempting particular spending categories. This could damage the Stability and

Growth Pact's credibility and pave the way for similar exemptions in other high-priority areas, endangering the coherence of the EU's fiscal framework. They also highlight the need for more sustainable and transparent financing options, like creating a European Defence Fund, issuing joint EU security-related debt, or permitting short-term, well-defined deviations during emergencies rather than long-term exemptions. The findings also highlight how crucial it is to increase military spending efficiency through cooperative procurement, coordinated research initiatives, and cutting member state redundancies in order to reduce the financial burden without sacrificing security objectives. Lastly, the study emphasizes how important it is to update the current fiscal framework in order to make it more adaptable and resilient to overlapping crises. Overall, evidence indicates that exempting military spending from fiscal regulations has definite negative effects on public debt dynamics, necessitating a more balanced strategy based on collaboration, efficiency, and comprehensive fiscal governance reform, even though bolstering European defence is crucial.

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