




“Impact of recurrent and non-recurrent government expenditure on Bosnia and Herzegovina’s economic growth: an empirical analysis (1996–2022)”

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IMPACT OF RECURRENT AND NON-RECURRENT GOVERNMENT EXPENDITURE ON BOSNIA AND HERZEGOVINA'S ECONOMIC GROWTH: AN EMPIRICAL ANALYSIS (1996–2022)

Abstract

This study aims to investigate the differential impacts of recurrent and non-recurrent government expenditures on the gross domestic product (GDP) of Bosnia and Herzegovina from 1996 to 2022. Aggregating data from various government levels, it employs ordinary least squares (OLS) regression techniques to analyze the relationship between these types of expenditures and economic growth. The findings reveal a significant positive correlation between recurrent expenditure and GDP, indicating that spending on health, education, and security contributes to economic growth. Conversely, non-recurrent expenditure, encompassing capital and development investments, does not show a statistically significant impact on GDP in the short term. This suggests that while recurrent spending is crucial for immediate economic performance, non-recurrent investments require strategic planning and efficiency to realize their growth potential. The study underscores the importance of efficient expenditure allocation in transitioning economies like Bosnia and Herzegovina, highlighting the need for a balanced fiscal strategy that supports both immediate economic stability and long-term development.

Keywords

government expenditure, economic growth, Bosnia and Herzegovina, recurrent expenditure, non-recurrent expenditure

JEL Classification

H50, O11, H11, E62

INTRODUCTION

The dynamic interplay between government expenditure and economic growth remains a cornerstone of fiscal policy analysis, particularly in transition economies grappling with the challenges of economic restructuring and development. Bosnia and Herzegovina is a country whose post-war economic landscape has been markedly shaped by its transition from a centrally planned to a market-oriented economy. Within this context, understanding the impact of different types of government spending – recurrent and non-recurrent – on economic growth is not only of academic interest but crucial for policy formulation and implementation.

Recurrent expenditure, typically associated with government consumption and operational costs, and non-recurrent expenditure, largely encapsulating capital investments, are pivotal in shaping the trajectory of economic growth. However, the efficacy and impact of these expenditures in a transitioning economic remain underex-

plored. The distinctions between these types of spending and their respective contributions to GDP growth warrant a thorough investigation, given their implications for fiscal stability, economic development, and public welfare.

Amidst the backdrop of Bosnia and Herzegovina's complex political and economic structure, it is vital to dissect the relationship between government expenditure types and GDP growth. By delineating between recurrent and non-recurrent expenditures, it is interesting to unveil how each contributes to the overarching goal of economic development in a post-conflict transition economy. Such an endeavor can not only fill a critical gap in the existing literature on Bosnia and Herzegovina's economy but also contribute to the broader understanding of fiscal policy's role in transition economies worldwide.

1. LITERATURE REVIEW AND HYPOTHESES

The relationship between government expenditure and economic growth has been the subject of extensive research and debate in economic literature. Historically, the Keynesian school of thought posited that government spending plays a crucial role in stimulating economic growth, especially during times of economic downturn (Keynes, 1936). Over the years, this perspective has evolved, with numerous studies examining the impact of different types of government expenditures, such as recurrent (operational) and non-recurrent (capital or developmental) expenditures, on the economic growth of countries. Particularly in transition economies, where governmental structures and economic policies undergo significant changes, the role of government spending becomes even more critical to understand (Nworji et al., 2012).

1.1. Historical context and theoretical background

The understanding of the relationship between government expenditure and economic growth has evolved significantly over the years. While early theories underscored the importance of government spending in economic management, later theories brought in more complexities, emphasizing efficiency, expectations, and the structural aspects of government expenditure.

The theoretical foundation for understanding the role of government expenditure in economic growth was laid by John Maynard Keynes in the mid-20th century. Keynes (1936) challenged the classical economics notion that markets are always clear and posited that government interven-

tion, especially fiscal policy, is crucial in times of economic downturns. He argued that during periods of low private investment and consumer spending, government expenditure can stimulate demand, create employment, and lead to economic growth. This theory formed the basis of what came to be known as Keynesian economics and has profoundly influenced economic policies worldwide.

The post-World War II era saw significant application of Keynesian principles, with governments actively using fiscal policy to manage economic cycles. However, by the 1970s, the limitations of Keynesian economics began to surface, particularly in addressing stagflation – simultaneous high inflation and unemployment. This period saw the emergence of monetarism led by Milton Friedman, who emphasized the role of monetary policy over fiscal policy (Friedman, 1968). Monetarists argued that excessive government expenditure could lead to inflation without necessarily improving economic growth.

The late 20th century witnessed the rise of supply-side economics, which argued that reducing taxes and government spending could stimulate investment, increase productivity, and lead to economic growth (Laffer, 1981). This period also saw the development of the rational expectations theory, which posited that people's expectations about the future could influence current economic behavior, thus affecting the effectiveness of government policies (Lucas, 1972).

New Keynesian economics, emerging in the 1980s, sought to merge Keynesian concepts with micro-economic foundations. It acknowledged the role of government spending in stabilizing the economy

but with a more nuanced understanding of market imperfections (Mankiw, 1985). Parallely, endogenous growth theories developed, emphasizing the role of government expenditure in areas like education, research, and infrastructure in fostering an environment conducive to economic growth (Romer, 1986).

In the contemporary context, especially in transition economies, the role of government expenditure has been reassessed. Transition economies, shifting from planned to market economies, face unique challenges where the government's role in economic restructuring is critical. Studies in these contexts often focus on the efficiency and allocation of government spending, recognizing its potential to influence long-term economic growth trajectories (Kornai, 1992).

1.2. Government expenditure and economic growth

Empirical studies on the impact of government expenditure on economic growth have yielded varied results globally. These studies often reflect the economic, political, and social contexts of different regions. Many studies focusing on developing countries have found a positive correlation between government spending and economic growth. For instance, Afonso and Sousa (2012) analyzed data from several developing countries and found that government spending, particularly in infrastructure and education, positively impacts economic growth. This supports the Keynesian view of government expenditure as a tool for economic stimulation. In contrast, research in developed economies often shows a more complex relationship. Gemmell et al. (2008) studied OECD countries and reported that not all types of government expenditure positively affect growth. Their findings suggest that while spending on education and infrastructure can be growth-enhancing, excessive public spending can have diminishing returns.

Several studies have dissected government expenditure into various components, examining their individual impacts on economic growth. Baldacci et al. (2008) conducted a cross-country analysis and found that government spending on healthcare and education significantly contributes to

economic growth, particularly in lower-income countries. On the other hand, Dunne and Tian (2015) indicate that spending in areas like defense does not have a clear positive impact on economic growth and can sometimes reduce growth.

Empirical research in transition economies provides insightful perspectives on the role of government expenditure in economies shifting from planned to market systems. Devarajan et al. (1996) suggest that the efficiency of government spending is crucial in the context of the former Soviet Union and Eastern European countries. They found that while increased government expenditure can support transition, inefficiencies, and misallocation can hinder growth. Research in rapidly growing economies like China and the Asian Tigers often highlights the positive role of government spending in supporting economic transformation and growth, as found by Zhang and Zou (1998).

More recent studies continue to explore this relationship with advanced econometric techniques and broader datasets. Lozano-Vivas and Pasiouras (2010) have employed advanced econometric methods to understand the nonlinearities and conditional factors affecting the relationship between government spending and growth. Afonso and Jalles (2011) reassessed the role of government expenditure in the context of economic recovery and austerity measures.

Overall, empirical studies on the impact of government expenditure on economic growth present a complex and nuanced picture. While there is consensus on the potential of government spending to influence economic growth, the nature and extent of this impact vary significantly across different types of expenditures, economic sectors, and country contexts. This diversity in findings underscores the importance of context-specific analysis in understanding the role of government expenditure in economic development.

1.3. Recurrent vs. non-recurrent expenditure

Recurrent expenditure, often referred to as operational expenditure, includes spending on government salaries, subsidies, and social services like healthcare and education. Recurrent expenditures

are typically regular and predictable, forming a significant part of government budgets. Non-recurrent expenditure is usually associated with capital expenditure on infrastructure, development projects, and long-term investments. These expenditures are often seen as investments in a country's future economic capacity.

Gupta et al. (2004) found that recurrent expenditures, especially in social sectors like health and education, can have a significant positive impact on economic growth. They argue that these expenditures improve human capital, which is a key driver of growth. In contrast, capital expenditures have been found to have a varied impact. According to Aschauer (1989), public investment in infrastructure can be a critical determinant of economic growth. However, this relationship is complex and dependent on the efficiency of investment and the context of the economy. For example, in developing countries with underdeveloped infrastructure, non-recurrent expenditures can have a substantial positive impact on growth (Easterly & Rebelo, 1993). In advanced economies, however, the marginal impact of additional infrastructure investment may be lower, as noted by Fernald (1999).

A key concern in the literature is the sustainability and efficiency of these expenditures. High recurrent expenditures, particularly on wages and subsidies, can strain fiscal budgets and lead to inefficiencies (Rajkumar & Swaroop, 2008). Capital expenditures, while potentially growth-enhancing, require effective project selection and implementation to avoid waste and ensure long-term benefits (Flyvbjerg, 2008).

Several studies have attempted to directly compare the impacts of these two types of expenditures. For instance, Devarajan et al. (1996) found that the composition of expenditure is crucial across various countries. They noted that while too much recurrent spending can crowd out productive investment, under-investing in capital projects can stifle growth prospects.

The literature suggests that the optimal mix of recurrent and non-recurrent expenditures is crucial and context-dependent. Policymakers are advised to consider the long-term growth implications

and fiscal sustainability when allocating resources between these two types of expenditures.

In summary, both recurrent and non-recurrent government expenditures have significant but distinct impacts on economic growth. The effectiveness of these expenditures in stimulating growth is highly contingent on the economic structure, fiscal health, and specific needs of a country. Understanding the balance and efficiency of these expenditures is essential for formulating effective fiscal policies.

1.4. Government expenditure in transition economies

Transition economies are those that have moved from a centrally planned economic system toward a more market-oriented economy. This includes countries in Eastern Europe, the former Soviet Union, and parts of Asia and Africa that have undergone significant structural changes since the late 20th century (Kornai, 1992). These economies face unique challenges, such as restructuring their industrial sectors, establishing functioning market institutions, dealing with legacies of state ownership, and managing social and political changes (Lavigne, 1999).

Government expenditure in transition economies plays a crucial role in stabilizing the economy and fostering growth. Roland (2002) highlighted the importance of government spending in areas like infrastructure development, social safety nets, and institution building during the transition phase.

The efficiency of government expenditure is particularly crucial in these economies. As noted by Easterly (2001), inefficient allocation of resources can lead to economic distortions and impede growth. Thus, how government funds are allocated between recurrent and capital expenditures has significant implications for economic performance.

Studies focusing on countries like Poland and Hungary have shown that strategic government expenditures, especially in infrastructure and human capital development, have positively contributed to their economic transition and growth (Gomulka, 2000). Conversely, other studies in-

dicates that excessive or misdirected government spending can exacerbate fiscal deficits, fuel inflation, and hinder economic reforms, as observed in some of the former Soviet states (Åslund, 2007).

Research focusing on specific sectors like health-care, education, and welfare in transition economies suggests that how government expenditure is distributed across these sectors can significantly impact their effectiveness in contributing to economic growth (Milanovic, 1998).

The experiences of different transition economies provide valuable insights. For instance, the rapid transition approach of the Baltic countries contrasts with the more gradual approach of countries like Slovenia, with varying implications for government expenditure and economic growth (Bohle & Greskovits, 2007).

The influence of international financial institutions and aid on government expenditure in these economies is also a critical area of study. For example, the conditionality associated with IMF loans has impacted the fiscal policies of many transition economies (Pop-Eleches, 2009).

In summary, government expenditure in transition economies is a complex and multifaceted subject. The literature reveals that while strategic and efficient government spending can aid in successful economic transition and growth, challenges such as inefficient allocation, corruption, and external dependencies can hinder these processes. Understanding the nuances of government expenditure in these contexts is crucial for policymakers and international agencies involved in supporting economic transitions.

1.5. Recent trends and current understanding

Recent studies have leveraged advanced econometric techniques to gain deeper insights into the relationship between government expenditure and economic growth. For instance, panel data analysis and vector autoregression have provided more nuanced understandings of this relationship, accounting for country-specific factors and temporal dynamics (Kleis & Moessinger, 2016).

Recent research has increasingly focused on the non-linear aspects of government expenditure. Afonso and Jalles (2013) explored threshold effects, indicating that the impact of government spending on growth may vary at different levels of expenditure, economic development, and institutional quality.

The global financial crisis of 2008 and subsequent economic downturns have led to a reevaluation of fiscal policies. Research in this period has focused on the effectiveness of government spending as a tool for economic recovery and stabilization (Blanchard & Leigh, 2013).

A significant body of research has emerged analyzing the impact of austerity measures on economic growth. Guajardo et al. (2014) found that, in many cases, these measures have had a contractionary effect on economies, challenging the notion that cutting government spending invariably leads to growth.

The recent literature emphasizes the importance of not just the size, but the efficiency and effectiveness of government spending. Studies have shown that targeted expenditures, particularly in sectors like technology, education, and green infrastructure, can have significant growth-enhancing effects (Mazzucato, 2015).

There is a growing consensus on the importance of government expenditure in research and development (R&D) and innovation. Acemoglu et al. (2014) highlighted how public investment in these areas can spur long-term economic growth by driving technological advancements and productivity improvements.

Recent studies have also focused on the impact of fiscal decentralization and the role of local government spending. Research indicates that empowering local governments to allocate and spend resources can lead to more efficient and effective use of public funds tailored to local needs and conditions (Baskaran & Feld, 2013).

The contemporary literature on government expenditure and economic growth reflects a nuanced understanding that goes beyond the traditional dichotomies of pro- or anti-spending. It

emphasizes the importance of the composition, efficiency, and targeting of government expenditure, as well as the economic and institutional context in which such spending occurs. The latest research indicates that the relationship between government spending and economic growth is complex and multifaceted, contingent on various factors, including economic cycles, sectoral needs, and fiscal policies.

1.6. Hypotheses

The literature review underscores that the impact of government expenditure on economic growth varies significantly across different economic contexts. While Keynesian principles highlighting the positive effects of government spending hold in certain scenarios, especially in times of economic downturns, the relationship is far more nuanced in different country contexts and economic conditions.

A critical insight from the literature is the differentiation between the impacts of recurrent and non-recurrent expenditures. While both types of spending have roles to play, their effectiveness is highly contingent on how efficiently and strategically they are deployed. In transition economies, the role of government expenditure is particularly complex, with strategic spending being key to successful economic transformation. However, inefficiencies and corruption can significantly hamper the growth-inducing effects of such expenditure.

Recent studies using advanced econometric models have provided a more granular understanding of the relationship between government spending and economic growth. These studies emphasize nonlinearities, threshold effects, and the importance of targeted and efficient spending. A recurring theme in the literature is the absence of a one-size-fits-all approach regarding government expenditure. The impact of government spending on economic growth is highly context-dependent, influenced by the economy's developmental stage, institutional quality, and the specific sectors where spending is directed.

Achieving a balance between recurrent and capital expenditures is crucial for sustainable economic

growth. This balance is dependent on the specific needs and fiscal capacities of individual economies. The policy environment and institutional frameworks, within which such spending occurs, also significantly influence the effectiveness of government expenditure. This includes fiscal discipline, transparency, and accountability in government spending.

There is a need for more longitudinal studies that examine the impacts of government expenditure over extended periods, especially in rapidly changing economic environments. Future research could explore how digital transformation and technological advancements are altering the efficiency and impact of government expenditure. The COVID-19 pandemic has introduced new dynamics in fiscal policy and government spending. Studies focusing on the post-pandemic era could provide valuable insights into the evolving role of government expenditure in economic recovery and growth. Another area for future research is the role of government expenditure in promoting environmental sustainability and addressing climate change, particularly in the context of green fiscal policies.

In conclusion, while the literature provides extensive insights into the relationship between government expenditure and economic growth, it also highlights the complexity and context-specific nature of this relationship.

The purpose of this study is to empirically investigate the impact of government expenditure types on the economic growth of Bosnia and Herzegovina, a post-transition economy.

Based on the insights gleaned from the reviewed literature, this study proposes the following hypotheses:

- H1: There is a significant positive relationship between recurrent government expenditure and economic growth in Bosnia and Herzegovina.*
- H2: There is a significant positive relationship between non-recurrent government expenditure and the economic growth of Bosnia and Herzegovina.*

2. METHOD

The study aggregates and utilizes secondary data collected from published government budget documents across different levels of government in Bosnia and Herzegovina. This includes both national and local government data.¹ The collected data are processed to categorize expenditures into two main types: recurrent (operational) and non-recurrent (development or capital) expenditures. This categorization is essential for analyzing their distinct impacts on the gross domestic product (GDP) of Bosnia and Herzegovina. The study employs ordinary least squares (OLS) regression techniques to analyze the relationship between these types of government expenditures and GDP while taking into account potential structural breaks in data and stationary properties of data. To account for external factors that might influence the GDP, the study includes control variables such as structural breaks identified using the Chow test. These breaks correspond to periods of economic crisis or significant policy changes.

Data sources are as follows:

- 1) Government budget documents: The primary source of data is the budget documents published by various levels of government in Bosnia and Herzegovina. These documents provide detailed information on the types and amounts of government expenditures.
- 2) Economic indicators: Additional data on GDP and other relevant economic indicators are sourced from official publications of Bosnia and Herzegovina's national statistics office and international financial institutions like the IMF and World Bank.

The primary dependent variable in this study is the Gross Domestic Product (GDP) of Bosnia and Herzegovina. Independent variables include recurrent expenditure (REC; government spending on salaries, social services, healthcare, education, and security) and non-recurrent expenditure (DEV; government spending on capital projects and development initiatives). The control variable

is broad money (M2; included as a proxy for monetary expansion and its impact on GDP growth), and dummy variables are used to account for structural breaks in the data corresponding to significant economic events or policy shifts.

The OLS regression model is used to estimate the relationship between government expenditure and GDP. The model is tested for stationarity using the Augmented Dickey-Fuller (ADF) test to ensure the reliability of the results. The study utilizes ordinary least squares (OLS) techniques (tested in EViews), in the form of equation 1.

$$GDP = b_1 + b_2 DEV + b_3 REC + b_4 M2 + b_5 Dummy1 + b_6 Dummy2 + u, \quad (1)$$

where b_1 : intercept of the regression line. It implies any level of economy at zero state budget expenditure. b_2, b_3, b_4, b_5, b_6 : coefficients to be estimated, measuring the effects of the non-recurrent development (capital) expenditure and recurrent expenditure on GDP, M2, and Dummy variables, respectively. *DEV*: Development (non-recurrent, capital) expenditure. *REC*: Recurrent expenditure (health, education, social security, public administration salaries, security); *M2*: Measure of broad money; *Dummy1* and *Dummy2*: Structural breaks in data associated with economic crisis as indicated by Chow test for structural breaks in data; *u*: stochastic variables to accommodate the influence of other determinants of economy not included in the model.

3. RESULTS

The analysis reveals that government expenditures in Bosnia and Herzegovina, both recurrent and non-recurrent, have distinct impacts on the country's gross domestic product (GDP). The results from the ordinary least squares (OLS) regression model reported in Table 2 provide insight into how these different types of expenditures influence economic performance.

Table 1 presents the unit root properties of the data series. The GDP series shows a transformation from I(2) to I(1) after the first difference, indicat-

¹ Time series data on budgets available from statistical agencies are extended and aggregated across all levels of the government for an additional time period under the project of Socially Responsible Budgeting (funding no.: 27-02-35-35137-55/22), Ministry of Science, Higher Education, and Youth of Canton Sarajevo.

ing non-stationarity in the series. The time series data are initially tested for unit root to confirm that the assumption on stationarity is not violated. The results of the ADF test are performed using the data at levels. Transformations of variables are performed, and the first difference of the data series is used to make the time series of the same order of integration where indicated before performing the OLS analysis.

Table 1. Adjusted Dickey-Fuller test, unit root properties of data

Data series	ADF at level	ADF at the first difference of data series	Decision I(0) or I(1)
GDP	-1.3588	-2.1825	I(2)
DEV	-1.1614	-8.6028	I(1)
REC	-0.6883	-8.8856	I(1)
M2	3.5923	-3.1081	I(1)

Note: Test critical value 1%: -3.7378, 5%: -2.9918; 10%: -2.6355.

Table 2 shows the estimated coefficients of the OLS model. The recurrent expenditure's positive coefficient and the non-recurrent expenditure's negative, albeit insignificant, coefficient are key highlights. The results of estimation of (1) using the transformed data series are reported in Column 2 of Table 2.

Table 2. OLS model estimation results

Variable	OLS model Estimated Coefficient GDP as a dependent variable	OLS model using the first difference of data series. D(GDP) as dependent variable	t-statistic	Probability associated with t-statistic
	(1)	(2)		
Coefficient	5.86E+09	-	8.2562	0.0000
Coefficient	-	45564853	0.0818	0.9356
DEV	-0.7491	-	-1.0378	0.3124
REC	2.8403	-	4.1344	0.0006
M2	0.9423	-	10.7743	0.0000
D(DEV)	-	0.0887	0.1655	0.8704
D(REC)	-	-0.3410	-0.4541	0.6551
D(M2)	-	0.9278	2.4624	0.0241
Dummy 1	9.75E+08	-	0.5199	0.6091
Dummy 2	4.56E+09	-	2.7459	0.0128
Durbin-Watson	1.3943	2.0733	-	-
R Squared	0.9788	0.3532	-	-
Adjusted R Squared	0.9733	0.1735	-	-
F statistic on joint test that coefficient on DEV and REC =0	8.55	-	-	0.0022
Joint F statistic that coefficients on D(DEV) and D(REC) =0	-	0.1068	-	0.8992

Note: Sample includes annual data from 1996 to 2022.

The findings indicate that in Bosnia and Herzegovina, recurrent government expenditures, especially those directed toward social services, positively impact economic growth. In contrast, non-recurrent expenditures, while essential for long-term development, do not show a significant short-term impact on GDP. These results provide valuable insights into the efficiency and effectiveness of different types of government spending in the context of Bosnia and Herzegovina's economy.

Next, the analysis used the first difference of data series to make them into stationary time series. That is, it cured for unit root and made the series of order I(0). The estimated regression coefficients on recurrent (REC) and non-recurrent (DEV) public expenditure are not significant, as indicated by the joint *F* statistic being insignificant in Column 2 of Table 2. In this model, growth in money supply (M2) significantly and positively affects GDP. This suggests that public expenditure may not have an important influence on GDP in Bosnia and Herzegovina overall. Moreover, the results at the level of variables are sensitive to the transformation of data series to make the series of order I(0). This suggests the need for further ex-

amination into the impact of government expenditure types on gross domestic product in Bosnia and Herzegovina using longer time series of data and more robust models, which allow for different orders of integration of data series.

The coefficient for recurrent expenditure (REC) is positive and statistically significant (Coefficient = 2.8403, t -statistic = 4.1344, p -value = 0.0006), indicating a strong positive impact on GDP. This suggests that increased recurrent spending, particularly on services like health, education, and security, positively correlates with economic growth.

In contrast, non-recurrent expenditure (DEV) shows a negative coefficient (Coefficient = -0.7491, t -statistic = -1.0378, p -value = 0.3124), though it is not statistically significant. This implies that capital and development expenditures do not have a significant impact on GDP growth in the short term.

The broad money supply (M2) is positively correlated with GDP (Coefficient = 0.9423, t -statistic = 10.7743, p -value = 0.0000), indicating that monetary expansion is associated with economic growth.

Dummy variables for structural breaks show varied significance, with Dummy 2 being statistically significant (Coefficient = 4.56E+09, t -statistic = 2.7459, p -value = 0.0128), suggesting the impact of specific economic events or policy changes on GDP.

The positive and significant impact of recurrent expenditure on GDP supports hypothesis 1 (operational spending by the government boosts economic growth). The lack of significant impact of non-recurrent expenditure on GDP in the short term provides evidence to reject hypothesis 2 (capital and development expenditures translate into economic growth).

4. DISCUSSION

The finding that recurrent government expenditure positively affects GDP growth aligns with the Keynesian economic theory, which emphasizes the role of government spending in stimu-

lating economic demand (Keynes, 1936). This is consistent with Gupta et al. (2004), who found a positive correlation between recurrent spending and economic growth, particularly in developing countries.

The positive impact of recurrent expenditure in Bosnia and Herzegovina can be attributed to its focus on essential services like healthcare and education, which enhance human capital, a key driver of economic growth.

The finding that non-recurrent expenditure does not have a significant short-term impact on GDP, as indicated by probability associated with the t -statistic of the respective regression coefficient, is in line with the literature that suggests the benefits of capital expenditure that are often realized over the long term (Aschauer, 1989). This could explain why a lack of immediate impact on GDP growth is observed.

Figure 1 illustrates the trends in total recurrent and non-recurrent expenditures over the study period. A notable increase in non-recurrent expenditure post-2012 is observed, aligning with increased capital projects, although this does not translate into a significant impact on GDP growth. An increase in the level of non-recurrent expenditure was observed after 2012, which is associated with an increased level of capital expenditure. This expenditure is mainly in infrastructure projects associated with a positive yet insignificant effect on the GDP growth rate in the OLS model presented in column 2 of Table 2. However, a measure of the growth level of broad money (M2) has a much more profound and significant impact on the growth rate, leading to the conclusion that there is no significant positive impact of non-recurrent (development) expenditure on the economic growth rate in Bosnia and Herzegovina.

Since government spending is financed either by an increase in taxes or government borrowing, this reduces the financial resources of the private sector, which may undermine private investment. Government spending on development projects might be higher during economic downturns to indicate expansionary fiscal policy during these periods, so findings of

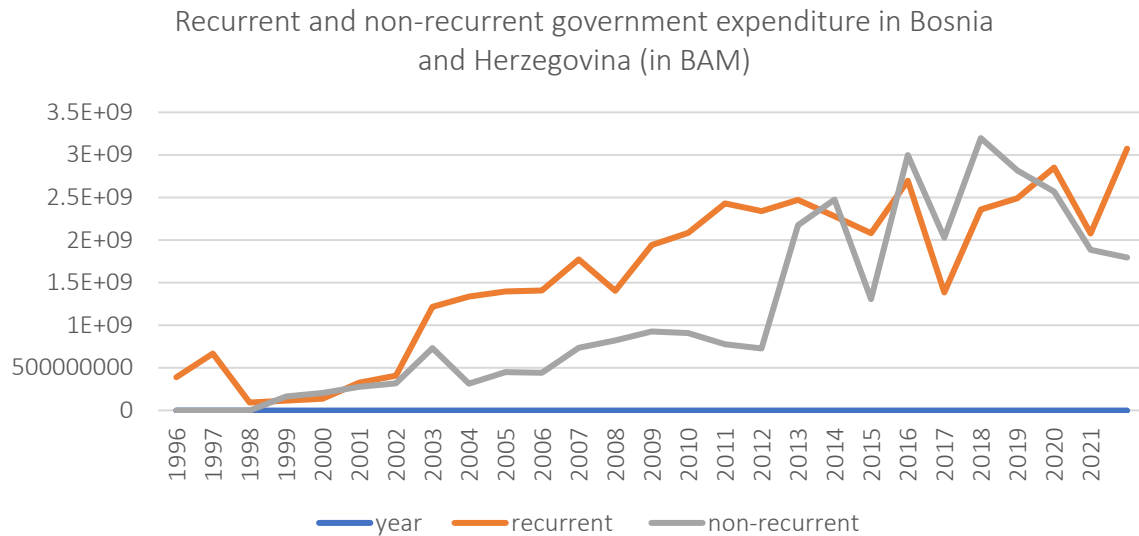


Figure 1. Total recurrent and non-recurrent expenditure of all levels of government in Bosnia and Herzegovina

no positive relationship between gross domestic product and development expenditure could be explained by this fact. In fact, Figure 1 shows a sharp decline in development expenditure in 2019 due to the COVID-19 pandemic and the government budget crisis caused by the break in economic activity that the pandemic has caused.

This finding of no short-term effect of non-recurrent expenditure on economic growth resonates with Rajkumar and Swaroop (2008), who argue that the efficiency of capital expenditure, particularly in countries with transition economies, is crucial for its impact on economic growth.

The economic structure of Bosnia and Herzegovina, characterized by its transition economy, might explain the more pronounced impact of recurrent expenditure. In economies undergoing structural changes, immediate welfare and stability often provided by recurrent expenditures could be more critical for short-term economic growth.

The inefficiency in capital expenditure management and the long gestation period of development projects could contribute to the lack of significant impact of non-recurrent expenditure on GDP in the short term. These findings suggest that policymakers in Bosnia and Herzegovina should consider prioritizing recurrent spending, particularly in sectors that directly enhance hu-

man capital, to stimulate short-term economic growth. For non-recurrent expenditure, a focus on improving the efficiency and effectiveness of capital projects, as well as a strategic long-term vision, is essential.

Future research should aim to explore the long-term impact of non-recurrent government expenditure, especially in infrastructure and development projects, on economic growth in Bosnia and Herzegovina. Longitudinal studies that track the progress and impact of specific capital projects could provide deeper insights into how such expenditures contribute to sustainable economic growth. Comparative analyses with other transition economies experiencing similar structural changes could offer valuable insights into the effectiveness of different types of government expenditure in fostering economic growth.

Such studies could also explore the role of external factors like international aid, geopolitical influences, and global economic trends on government spending and economic growth. Further research is needed to investigate the efficiency and allocation of government expenditures in Bosnia and Herzegovina. Studies focusing on fiscal policy, corruption, and administrative efficiency could provide critical insights into optimizing government spending for economic growth.

CONCLUSION

The purpose of the study was to assess the impact of different types of government expenditure – recurrent and non-recurrent – on the gross domestic product (GDP) of Bosnia and Herzegovina. The analysis using ordinary least squares (OLS) regression techniques is performed to understand how these expenditures influence the country's economic performance, particularly during the period from 1996 to 2022.

The results demonstrate a clear and significant positive impact of recurrent government expenditure on the GDP. This indicates that spending on services such as health, education, and security, which constitute recurrent expenditure, positively correlates with economic growth in Bosnia and Herzegovina. On the other hand, non-recurrent expenditure, which includes capital and development investments, does not show a statistically significant impact on the GDP in the short term. This suggests that while essential for long-term development, the immediate economic benefits of such expenditure are not as pronounced.

The conclusions drawn from these results are twofold. First, they highlight the crucial role of recurrent expenditure in driving short-term economic growth in a transitioning economy like Bosnia and Herzegovina. Second, they point to the potential need for a strategic reassessment of non-recurrent expenditure, emphasizing the importance of efficiency and long-term planning in capital and development projects to ensure their eventual positive impact on economic growth.

In summary, the study provides valuable insights into the differentiated impacts of government spending types on economic growth, emphasizing the importance of strategic allocation and efficiency in government expenditure for fostering economic development in Bosnia and Herzegovina.

AUTHOR CONTRIBUTIONS

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REFERENCES

1. Acemoglu, D., Akcigit, U., & Celik, M. A. (2014). *Young, restless and creative: Openness to disruption and creative innovations* (Working Paper No. 19894). National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w19894>
2. Afonso, A., & Jalles, J. T. (2011). *Economic performance and government size* (ECB Working Paper No. 1399). Frankfurt a. M.: European Central Bank (ECB). Retrieved from <https://hdl.handle.net/10419/153832>
3. Afonso, A., & Jalles, J. T. (2013). Growth and productivity: The role of government debt. *International Review of Economics & Finance*, 25, 384-407. <https://doi.org/10.1016/j.iref.2012.07.004>
4. Afonso, A., & Sousa, R. M. (2012). The macroeconomic effects of fiscal policy. *Applied Economics*, 44(34), 4439-4454. <https://doi.org/10.1080/00036846.2011.591732>
5. Aschauer, D. A. (1989). Is public

- expenditure productive? *Journal of Monetary Economics*, 23(2), 177-200. [https://doi.org/10.1016/0304-3932\(89\)90047-0](https://doi.org/10.1016/0304-3932(89)90047-0)
6. Åslund, A. (2007). *How capitalism was built: The transformation of Central and Eastern Europe, Russia, and Central Asia*. Cambridge University Press.
 7. Baldacci, E., Clements, B., Gupta, S., & Cui, Q. (2008). Social spending, human capital, and growth in developing countries. *World Development*, 36(8), 1317-1341. <http://dx.doi.org/10.1016/j.world-dev.2007.08.003>
 8. Baskaran, T., & Feld, L. P. (2013). Fiscal decentralization and economic growth in OECD countries: Is there a relationship? *Public Finance Review*, 41(4), 421-455. <https://doi.org/10.1177/1091142112463726>
 9. Blanchard, O., & Leigh, D. (2013). Growth forecast errors and fiscal multipliers. *IMF Working Papers*, 2013(001). <https://doi.org/10.5089/9781475576443.001>
 10. Bohle, D., & Greskovits, B. (2007). The state, internationalization, and capitalist diversity in Eastern Europe. *Competition & Change*, 11(2), 89-115. <https://doi.org/10.1179/102452907X181929>
 11. Devarajan, S., Swaroop, V., & Zou, H. (1996). The composition of public expenditure and economic growth. *Journal of Monetary Economics*, 37(2), 313-344. [https://doi.org/10.1016/S0304-3932\(96\)90039-2](https://doi.org/10.1016/S0304-3932(96)90039-2)
 12. Dunne, J. P., & Tian, N. (2015). Military expenditure and economic growth: A survey. *The Economics of Peace and Security Journal*, 10(2), 5-11. <https://doi.org/10.15355/epsj.8.1.5>
 13. Easterly, W. (2001). *The Elusive Quest for Growth: Economist's Adventures and Misadventures in the Tropics in transition economies*. Cambridge, Massachusetts: The MIT Press.
 14. Easterly, W., & Rebelo, S. (1993). Fiscal policy and economic growth. *Journal of Monetary Economics*, 32(3), 417-458. [https://doi.org/10.1016/0304-3932\(93\)90025-B](https://doi.org/10.1016/0304-3932(93)90025-B)
 15. Fernald, J. G. (1999). Roads to prosperity? Assessing the link between public capital and productivity. *American Economic Review*, 89(3), 619-638. <https://doi.org/10.1257/aer.89.3.619>
 16. Flyvbjerg, B. (2008). Curbing optimism bias and strategic misrepresentation in planning: Reference class forecasting in practice. *European Planning Studies*, 16(1), 3-21. <https://doi.org/10.1080/09654310701747936>
 17. Friedman, M. (1968). The role of monetary policy. *The American Economic Review*, 58(1), 1-17. Retrieved from <https://www.aeaweb.org/aer/top20/58.1.1-17.pdf>
 18. Gemmell, N., Kneller, R., & Sanz, I. (2008). Foreign investment, international trade, and the size and structure of public expenditures. *European Journal of Political Economy*, 24(1), 151-171. <https://doi.org/10.1016/j.ejpoleco.2007.06.004>
 19. Gomulka, S. (2000). *Macroeconomic policies and achievements in transition economies, 1989-1999* (CEP Discussion Papers dp0475). Centre for Economic Performance, LSE. Retrieved from <https://unece.org/DAM/ead/sem/sem2000/gomulka.pdf>
 20. Guajardo, J., Leigh, D., & Pescatori, A. (2014). Expansionary austerity? International evidence. *Journal of the European Economic Association*, 12(4), 949-968. <https://doi.org/10.1111/jeea.12083>
 21. Gupta, S., Clements, B., & Tiongson, E. R. (2004). *Foreign aid and revenue response: Does the composition of aid matter?* (IMF Working Paper WP/04/176). International Monetary Fund.
 22. Keynes, J. M. (1936). *The general theory of employment, interest, and money*. London, United Kingdom: Macmillan Publishing.
 23. Kleis, M., & Moessinger, M. D. (2016). *The Long-run Effect of Fiscal Consolidation on Economic Growth: Evidence from Quantitative Case Studies* (Discussion Paper No. 16-047). Centre for European Economic Research. Retrieved from <https://ftp.zew.de/pub/zew-docs/dp/dp16047.pdf>
 24. Kornai, J. (1992). *The socialist system: The political economy of communism*. Princeton University Press.
 25. Laffer, A. (1981). Supply-side economics. *Financial Analysts Journal*, 37(5), 29-43. <https://doi.org/10.2469/faj.v37.n5.29>
 26. Lavigne, M. (1999). *The economics of transition: From socialist economy to market economy*. Palgrave Macmillan.
 27. Lozano-Vivas, A., & Pasiouras, F. (2010). The impact of non-traditional activities on the estimation of bank efficiency: International evidence. *Journal of Banking & Finance*, 34(7), 1436-1449. <https://doi.org/10.1016/j.jbankfin.2010.01.006>
 28. Lucas, R. E. (1972). Expectations and the neutrality of money. *Journal of Economic Theory*, 4(2), 103-124. [https://doi.org/10.1016/0022-0531\(72\)90142-1](https://doi.org/10.1016/0022-0531(72)90142-1)
 29. Mankiw, N. G. (1985). Small menu costs and large business cycles: A macroeconomic model of monopoly. *The Quarterly Journal of Economics*, 100(2), 529-538. <https://doi.org/10.2307/1885395>
 30. Mazzucato, M. (2015). *The entrepreneurial state: Debunking public vs. private sector myths*. Anthem Press.
 31. Milanovic, B. (1998). *Income, inequality, and poverty during the transition from planned to market economy*. The World Bank. Retrieved from <https://documents.worldbank.org/en/publication/documents-reports/document-detail/229251468767984676/income-inequality-and-poverty-during-the-transition-from-planned-to-market-economy>
 32. Nworji, I.D., Okwu, A.T., Obiwuru, T.C., & Nworji, L.O. (2012). Effects of public expenditure on economic growth in Nigeria: A disaggregated time series analysis. *International Journal of Management Sciences and Business Research*, 1(7). Retrieved from <https://core.ac.uk/download/pdf/228010214.pdf>
 33. Pop-Eleches, G. (2009). *From economic crisis to reform: IMF programs in Latin America and Eastern Europe*. Princeton University Press.

34. Rajkumar, A. S., & Swaroop, V. (2008). Public spending and outcomes: Does governance matter? *Journal of Development Economics*, 86(1), 96-111. <https://doi.org/10.1016/j.jdeveco.2007.08.003>
35. Roland, G. (2002). The political economy of transition. *Journal of Economic Perspectives*, 16(1), 29-50. <https://doi.org/10.1257/0895330027102>
36. Romer, P. (1986). Increasing returns and long-run growth. *The Journal of Political Economy*, 94(5), 1002-1037. Retrieved from <https://www.jstor.org/stable/1833190>
37. Zhang, X., & Zou, H. (1998). Fiscal decentralization, public spending, and economic growth in China. *Journal of Public Economics*, 67(2), 221-240. [https://doi.org/10.1016/S0047-2727\(97\)00057-1](https://doi.org/10.1016/S0047-2727(97)00057-1)