The Dynamics of Political Stability and Military Expenditure on Economic Growth: Insights from Tanzania

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Abstract
This study investigates the relationship between political stability, military expenditure, and economic growth in Tanzania, from 2002 to 2022. The study uses the ARDL model due to its ability to handle variables with different orders of integration, its flexibility in capturing dynamic relationships, and its robustness in providing insights into both short-term and long-term interactions among variables. The ARDL bounds test has revealed the existence of cointegration, suggesting the presence of long-run relationships among variables. Moreover, the empirical results show that past GDP is positively related to current economic growth, while the effect of voice and accountability on economic growth remains statistically insignificant. Further, the effects of regulatory quality and the rule of law on economic growth exhibit mixed effects. Also, the individual effects of political stability and military expenditure on the economy remain positive and statistically significant. However, the interaction of political stability and military spending is negatively related with the current economic growth but positively correlated with economic growth in the long run. These findings underscore the imperative of political stability and strategic military expenditure as critical ingredients in generating sustainable economic growth in Tanzania.

Keywords: Economic Growth; Military Expenditure; Political Stability; Tanzania
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1.0   Introduction

Economic literature has long debated the relationship between military expenditure and economic growth. Proponents of the Keynesian view argue that military spending can stimulate economic growth by increasing demand and creating jobs (Smith, 1980). Conversely, opportunity cost theory suggests that resources allocated to the military could be better utilised in more productive investments, such as education and infrastructure, potentially fostering long-term economic growth (Dagger & Sen, 1995). Empirical studies have produced mixed findings. For instance, Dan and Tian (2015) found that the impact of military spending on economic growth varies across countries and regions, depending on factors such as the level of economic development, the nature of political institutions, and the prevailing security environment. In the context of developing countries, particularly in Africa, where the returns on military spending are often negative or minimal, it is argued that such expenditure may stifle economic growth.

Tanzania has long been recognised for its political stability within a region often characterised by instability. Since gaining independence in 1961, the country has experienced fewer political challenges than some of its neighbours. This stability has significantly supported economic growth, particularly through policies aimed at economic liberalisation and poverty reduction (World Bank, 2023). However, in recent years, challenges have emerged that threaten this stability, including electoral crises and regional security threats. These developments raise questions about the increasing influence of political factors on Tanzania's economic trajectory. Despite Tanzania's democratic governance and relatively stable political environment, military spending patterns have fluctuated over the years. According to the Stockholm International Peace Research Institute (SIPRI) Military Expenditure Database, Tanzania's military expenditure has not consistently declined, which is unexpected for a country with a low likelihood of engaging in conflict. There have been periods of increased spending, prompting questions about the driving forces behind these trends (SIPRI, 2023). This increase can be attributed to periods of political instability and socio-political challenges, leading to heightened military spending. Issues such as electoral violence, regional security threats, and internal conflicts have influenced the political landscape, prompting the government to allocate more resources to the military to ensure national security and stability (World Bank, 2023).

Most studies examining the impact of political stability and military expenditure on economic growth have focused on specific regions or countries, predominantly outside Sub-Saharan Africa. For example, Maher and Zhao (2022) explored these dynamics in the context of Egypt. However, Tanzania's unique socio-political and economic landscape warrants a dedicated study. The existing literature lacks a comprehensive analysis tailored to the Tanzanian context, which is crucial given the country's distinct political history, military expenditure trends, and economic structure. Many previous studies rely on datasets that do not extend beyond the early 2010s. For example, Maher and Zhao's (2022) study uses data up to 2019. Given the dynamic nature of political stability and military expenditure, there is a significant gap in the literature utilising the most recent data, particularly post-2020. Filling this gap is essential as it could capture the impacts of recent global and regional developments, including the COVID-19 pandemic and its aftermath, on Tanzania's political and economic landscape.

While the ARDL approach is a robust econometric method widely used in time series analysis, including in Maher and Zhao's (2022) study, there is a scarcity of studies that translate econometric findings into actionable policy recommendations tailored to the Tanzanian context. Maher and Zhao (2022) offer general implications for Egypt, but detailed policy discussions that address Tanzania's specific needs are necessary. This includes

recommendations on optimising military expenditure without compromising economic growth and strategies for enhancing political stability to create a conducive economic environment. This gap is particularly relevant for Tanzania, where historical, social, and political factors significantly influence economic outcomes.

Given the fluctuating nature of Tanzania's military expenditure and the emerging challenges to its political stability, this study seeks to fill the existing gaps by providing a comprehensive analysis of how these factors interact to influence economic growth in Tanzania. In addition to the ARDL approach, this study employs an interactive approach, providing deeper insights into whether these policies complement or substitute each other in driving economic growth in Tanzania, offering crucial insights for policymakers. This study will contribute to the body of literature by addressing knowledge gaps regarding the complementary or substitutive nature of interactive policies in Tanzania's economic growth.

The rest of the paper is structured as follows: the literature review is presented in Section 2; data and methods are given in Section 3; Empirical results and discussion are presented in Section 4; Conclusion and policy implications are discussed in Section 5.

2.0 Literature Review
2.1 Theoretical Literature
The relationship between political stability, military expenditure, and economic growth is a complex and multifaceted issue that has been the subject of extensive debate in economic literature. Theories on economic growth provide various lenses through which this relationship can be understood, but they often offer differing predictions regarding the impact of political stability and military expenditure. This section aims to clarify the theoretical underpinnings of the study, connecting these elements in a coherent framework that supports a clear interpretation of the dynamics at play in Tanzania.

Political stability is widely recognized as an important driver of economic growth. Economic development theories, such as the Endogenous Growth Theory and Institutional Economics, believe that stable political environments promote economic growth by creating a favourable environment for investment, innovation and the efficient distribution of resources (Alesina et al., 1996). Stability reduces uncertainty and encourages domestic and foreign investors to allocate resources to long-term projects. In addition, political institutions are often associated with better governance, which can increase the effectiveness of economic policy and public spending (Acemoglu et al., 2005). In the Tanzanian context, political stability has been a prerequisite for sustainable economic growth that has enabled the implementation of market-based reforms and the attraction of foreign investment. However, the stability of the political system does not work alone. It interacts with different factors, including military spending, to create economic outcomes.

The theoretical link between military spending and economic growth is highly controversial. Keynesian economics suggests that government spending, including the military, can stimulate economic growth by increasing demand, especially in times of recession (Smith, 1980). Military spending can create jobs, stimulate technology and lead to infrastructure development, supporting broader economic growth. The impact of military spending on economic growth also depends on the security environment and the effectiveness of the spending. If military spending is necessary to maintain security and stability, it will have a positive effect on growth. In addition, in the absence of external threats, large military expenditures are seen as a misallocation of resources that adversely affects growth. The relationship between political

stability and military spending adds a layer of complexity to their relationship with economic growth. Political stability affects the effectiveness of military spending in promoting or inhibiting economic growth. In a stable political environment, more control over military spending could have greater positive effects on growth. Furthermore, in volatile political contexts, military spending can be used to suppress dissent and maintain control, potentially leading to instability and negative economic consequences.

In addition, political economy theory suggests that the motivation behind military spending is often motivated by politics. In stable democracies, military spending can be controlled by public accountability mechanisms, but in less stable or non-existent regimes, military spending increases to consolidate power (Collier and Hoeffler, 2006). This view is particularly relevant in the Tanzanian context, where military spending has fluctuated despite the absence of immediate security threats, possibly reflecting political considerations.

2.2. Empirical Literature Review

Numerous studies have explored the influence of political stability on economic growth, often with varying results, particularly in developing countries. For instance, Sabaté (2015), Töngür and Elveren (2015), and Iheonu and Ichoku (2022) present a range of outcomes. While some research suggests a positive correlation between political stability and economic growth, others highlight a negative relationship. Kim (2010), for example, studied the impact of political stability on foreign direct investment (FDI) as a proxy for economic growth in developing countries, using panel analysis. The findings indicated that countries with higher political rights experienced increased FDI outflows, while those with higher levels of corruption and lower democracy saw greater FDI inflows. Despite the mixed results, Alesina et al. (1996), Campos and Nugent (2002) and Kim (2010) concluded that political stability generally fosters positive economic outcomes, as demonstrated in the context of Egypt. Similarly, Masry (2015) found that political instability in Egypt negatively impacted economic growth, underscoring the importance of stability for economic progress. Maher and Zhao (2022) further examined the effects of political instability and military expenditure on Egypt's economic growth using the ARDL model. Their study revealed that political instability significantly hindered economic growth in both the long and short term, while military expenditure had an insignificant impact.

The relationship between military expenditure and economic growth has also yielded conflicting results across various studies. While some researchers have identified a positive correlation, others report a negative impact. Smyth & Kumar (2009), d'Agostino et al. (2012, 2019, 2020), and Pieroni (2009) all discuss the complexities of this relationship. For instance, Pieroni (2009) found that military expenditure negatively affected economic growth, particularly in countries with both high and low military spending. Aye et al. (2014) studied the South African context, concluding that military expenditure had no causal link to GDP in the full sample analysis. However, under subsample analysis, they observed that military spending initially had a positive impact on GDP, which later turned negative. Hou & Chen (2013) Investigated the relationship between military expenditure and economic growth in China and found that military spending positively influences economic growth, with effects that strengthen over time. Dunne & Tian (2015) examined the effects of military expenditure on economic growth in developing countries and found a significant positive impact, particularly in the short term, with effects that can extend into the medium and long term. Conversely, Lorusso & Pieroni (2017) examined the effects of military and non-military government spending on private consumption in the United States, finding that military expenditure negatively impacted private consumption. Saba & Ngepah (2019) investigated the

relationship between military expenditure, state fragility, and economic growth in African regional communities, revealing a negative impact of military spending on growth.

In contrast, some studies suggest a positive relationship between military expenditure and economic growth in specific contexts. Selvanathan & Selvanathan (2014) analysed defence expenditure and economic growth in Sri Lanka, supporting the idea that military spending, when combined with political stability, can significantly enhance economic growth. Similarly, Oyerinde & Fagboro (2020) identified a positive relationship between military expenditure and economic growth in Nigeria, while institutional quality had a negative effect on economic growth. Further research by Ajala & Laniran (2021) on the Nigerian economy confirmed a long-term positive correlation between military spending and economic growth. Nugroho & Purwanti (2021) studied lower-middle-income countries and found that while military expenditure initially negatively affected economic growth, it turned positive when combined with other policies. Ajala & Laniran (2021) examined military spending and economic growth in Nigeria, finding that political stability plays a crucial role in amplifying the positive effects of military spending on economic growth.

Susilo et al. (2022) examined the impact of military spending on economic growth in developing countries during the COVID-19 pandemic, confirming the positive influence of military spending, especially in politically stable environments. Dada et al., (2023) examined the role of institutional quality in moderating the impact of military expenditure on economic growth in 31 African nations. The findings revealed that while military expenditure alone negatively affects growth, the interaction between military spending and high institutional quality significantly enhances economic growth. Anifowose (2023) further examined the impact of military spending and institutional quality on inclusive growth within BRICS countries (Brazil, Russia, India, China, and South Africa) and found that military expenditure alone does not significantly promote inclusive growth in these countries. However, the presence of high institutional quality enhances the positive effects of military spending on growth.

These findings indicate that the relationship between political stability, military expenditure, and economic growth is complex and context-dependent, with varying outcomes based on the country and period studied. The mixed results in the literature suggest a need for further research, particularly in the Tanzanian context, where the interplay between these variables may yield unique insights.

The above discussion of empirical studies suggests a significant relationship between political stability, military expenditure, and economic growth. Therefore, countries with sustained political stability and optimised military expenditure are likely to experience enhanced economic growth. This relationship highlights the importance of balanced governance and resource allocation in fostering economic development. Based on the above discussion, the following hypotheses are developed.

H1: Political stability has a significant impact on the economic growth of Tanzania.
H2: Military expenditure has a significant impact on the economic growth of Tanzania.
H3: Political stability and military expenditure, both individually and interactively, have a significant impact on the economic growth of Tanzania.

3.0   Methodology
3.1   Analytical Framework
This study employs time series analysis using the ARDL model, following the approach of Odehnal et al. (2020), Maher & Zhao (2022), and Ndanshau & Mdadila (2023), to examine the interactive impact of military expenditure and political stability on economic growth. The analysis includes control variables such as voice and accountability, regulatory quality, and the rule of law. Gross Domestic Product (GDP) is the dependent variable, with military expenditure, political stability, and their interaction as key independent variables as presented in Table 1

Table 1: Definition and Measurement of the Variables

Variable	Symbol	Definitions	Measurement	Sign
Gross Domestic Product	LNGDP	Natural logarithm of Gross Domestic Product	Gross Domestic Product (GDP) in US$	N/A
Voice and Accountability	LNVA	Natural logarithm of Voice and Accountability	World Bank's Worldwide Governance Indicators (WGI)	+/-
Regulatory Quality	LNRQ	Natural logarithm of Regulatory Quality	World Bank's Worldwide Governance Indicators (WGI)	+
Rule of Law	LNRL	Natural logarithm of Rule of law	World Bank's Worldwide Governance Indicators (WGI)	+/-
political Stability	LNPS	Natural logarithm of Political Stability	World Bank's Worldwide Governance Indicators (WGI)	+
Military Expenditure	LNME	Natural logarithm of Military Expenditure	% general government expenditure	+
Political Stability and Military Expenditure	LNPSME	Natural logarithm of Interacted Political Stability and Military Expenditure	% general government expenditure	+

Source: Literature review Note: World Bank's Worldwide Governance Indicators (WGI) covers six key dimensions of governance including (Voice and Accountability, Regulatory Quality, Rule of Law, and Political Stability) World Bank. (2023).

3.2 Model Specification

To determine the relationship amongst the variables under study. The study starts with mathematical formulation as follows:

$$GDP = f(VA, RQ, RL, PS, ME, PS * ME \tag{1}$$

Where:
GDP	denotes gross domestic product
VA	denotes voice and accountability
RQ	denotes regulatory quality
RL	denotes rule of law
PS	denotes political stability
ME	denotes military expenditure

Equation 1 was transformed into an econometric model, and all variables were transformed into natural logarithms to remove outliers and conform to the classical linear assumptions.

$$GDP_t = \alpha + \beta_1 lnVA_t + \beta_2 lnRQ_t + \beta_3 lnRL_t + \beta_4 lnPS_t + \beta_5 lnME_t + lnME\ \beta_6 lnPS * ME_t + \varepsilon_t \tag{2}$$

where the definitions of all the variables in model 2 remain the same as shown in table 1 above. α is constant, t is the time index, β_1 to β_6 are the coefficients and ε is the error term.

3.3 Estimation Methods

The study applies the Augmented Dickey-Fuller (ADF) unit root test to ensure that the variables in the estimation model are not integrated at order two (I(2)) or higher. The ARDL cointegration test technique is then employed to determine cointegration among the variables. This method is preferred over Johansen & Juselius's (1990) and Engle & Granger's (1987) tests because it accommodates small samples, treats all variables as endogenous, and provides unbiased long-run and short-run estimates.

Before conducting further estimations, the study performed the Augmented Dickey-Fuller (ADF) unit root test. The Augmented Dickey-Fuller test permits higher-order autoregressive processes by including the Δy_{t-p} in the model under study. The technique tests for the null hypothesis that variables are non-stationary. To reject the null hypothesis a p-value of less than 0.05 is expected. The technique utilised equation 3 to determine unit root results.

$$\Delta y_t = \beta_0 + \gamma y_{t-1} + \delta_1 \Delta y_{t-2} + \cdots + \delta_p \Delta y_{t-p} + \varepsilon_t \tag{3}$$

synthesised into new equation 4 as shown incremental

$$\Delta y_t = \beta_0 + \gamma y_{t-1} + \sum_{j=l}^{p}(\delta_j \Delta y_{t-j}) + \varepsilon_t \tag{4}$$

where y_t are data in the present study, t is the time index, β is an intercept constant, γ is the coefficient presenting the unit root process, p is the lag order of the first difference autoregressive process in the study and ε_t is an independent identically distributed residual term in the study. ADF hypotheses for unit root test were formulated as shown:

H$_0$: $\gamma = 0$ (Unit Root-Non-stationary)
H$_1$: $\gamma < 0$ (Stationary).

The ARDL model used the variables with different order of integration say I (1) and I (0) still producing consistent estimates contrary to Vector Error Correction Model (VECM) or Error Correction Model (ECM) techniques. VECM or ECM techniques require all variables to have the same order of integration (Ndanshau and Mdadila, 2023).

3.2 ARDL model specification

As argued earlier, the ARDL (Autoregressive Distributed Lag) model is chosen for its versatility in handling variables in econometric analyses. Equation 2 is presented in the ARDL form as follows:

$$lnGDP_t = \gamma_0 + \gamma_1 lnGDP_{t-1} + \gamma_2 lnVA_{t-1} + \gamma_3 lnRQ_{t-1} + \gamma_4 lnRL_{t-1} + +\gamma_4 lnPS_{t-1} + \gamma_5 lnME_{t-1} + \gamma_6 lnPS * ME_{t-1} + \sum_{i=1}^{p} \alpha_1 \Delta lnGDP_{t-i} + \sum_{i=1}^{q} \alpha_2 \Delta lnVA_{t-i} + \sum_{i=0}^{q} \alpha_3 \Delta lnRQ_{t-i} + \sum_{i=0}^{q} \alpha_4 \Delta lnRL_{t-i} + \sum_{i=0}^{q} \alpha_5 \Delta lnPS_{t-i} + \sum_{i=0}^{q} \alpha_6 \Delta lnME_{t-i} + \sum_{i=0}^{q} \alpha_7 \Delta lnPS * ME_{t-i} + \mu_{t-1} \quad (5)$$

where all the variables in the equation 5 above remained as defined in table 1. The parameters for the long-run are presented by ($\gamma_1, \gamma_2, \gamma_3, \gamma_4, \gamma_5, and \gamma_6$) and ($\alpha_1, \alpha_2, \alpha_3, \alpha_4 \dots . to \alpha_7$) respectively. To determine the presence of a long-run link amongst the variables that is gross domestic product and the regressors drives the present study to utilise the ARDL bound cointegration test. In this context Johansen cointegration test is not appropriate as such the ARDL bound test remains unavoidable. It is important to note that this test utilised the critical values of both the upper and lower bound tests.

The decision rule states that if the computed F-statistic exceeds the upper critical bound (I(1)), the null hypothesis of no cointegration is rejected; if it is below the lower bound (I(0)), the null hypothesis is accepted. The ARDL bound test is advantageous over the Johansen test as it applies regardless of the variables' integration order and is superior for small samples.

Having established the long-run relationship amongst the variables means that variables are cointegrated then the study employs equation 6 to estimate long-run results.

$$lnGDP_t = \gamma_0 + \gamma_1 lnGDP_{t-1} + \gamma_2 lnVA_{t-1} + \gamma_3 lnRQ_{t-1} + \gamma_4 lnRL_{t-1} + +\gamma_5 lnPS_{t-1} + \gamma_6 lnME_{t-1} + \gamma_7 lnPS * ME_{t-1} + \mu_t \quad (6)$$

After performing the long-run model, the short-run dynamics were expressed using the error term lagged once (ECt-1) by equation 7. Generally, δ is expected to be negatively signed and statistically significant, suggesting convergence towards equilibrium after experiencing a short-run shock. The error correction term (ECM) indicates the speed of adjustment of the variables after any economic shock.

$$\Delta lnGDP_t = \phi + \sum_{i=0}^{m} \alpha_1 \Delta lnVA_{t-i} + \sum_{i=0}^{n} \alpha_2 \Delta lnRQ_{t-i} + \sum_{i=0}^{p} \alpha_3 \Delta lnRL_{t-i} + \sum_{i=0}^{p} \alpha_4 \Delta lnPS_{t-i} + \sum_{i=0}^{p} \alpha_5 \Delta lnME_{t-i} + \sum_{i=0}^{q} \alpha_6 \Delta lnPS * ME_{t-i} + \delta EC_{t-1} + \mu_t \quad (7)$$

4.0 Empirical Results
4.1 Descriptive Statistics
Table 2 provides descriptive statistics for the variables used in this study, showing that Tanzania's economic indicators are stable. The average log of GDP is 24.29, with a low standard deviation (0.54), indicating minimal GDP volatility. A slight left skew (-0.33) and a flatter-than-normal distribution are observed, with a Jarque-Bera probability of 0.43,

suggesting normality. LNVA's mean (3.43) and median (3.47) are close, showing consistency, and the Jarque-Bera probability of 0.29 supports its normal distribution.

Similarly, LNRQ displays minimal variability with a mean of 3.49 and a median of 3.53, showing a nearly symmetrical and flatter distribution, supported by a Jarque-Bera probability of 0.49. LNRL has a mean of 3.85, with low variability (Std. Dev. 0.09) and a left skew (-0.69), indicating near-normal distribution. LNPS shows a mean of 3.04 and a median of 3.01, with an almost symmetrical distribution, confirmed by a high Jarque-Bera probability (0.93).

LNME presents higher variability (Std. Dev. 0.19) with a mean of 1.67, but still a nearly normal distribution. The interaction term (LNPS*ME) shows a mean of 4.71 and a median of 4.80, reflecting moderate variability and near-normal distribution, with a Jarque-Bera probability of 0.76.

The consistency in means and medians across variables suggests economic stability, corroborated by studies such as Mbogoni (2019) and Wambura (2021). The normality and low standard deviations, particularly for LNGDP, LNVA, and LNRL, confirm minimal volatility, supporting the notion of sustained economic stability in Tanzania. The analysis aligns with findings by Kilindo (2018) and Wangwe and Arkadie (2020). The interaction term highlights the importance of political stability and military expenditure, echoing insights from Collier & Hoeffler (2006) and policy implications underscored by Mkenda (2018).

Table 2: Descriptive statistics

	LNGDP	LNVA	LNRQ	LNRL	LNPS	LNME	LNPS*ME
Mean	24.2906	3.4258	3.4925	3.8524	3.0378	1.6740	4.7118
Median	24.4033	3.4663	3.5347	3.8584	3.0097	1.7506	4.8009
Maximum	25.0504	3.5840	3.6841	3.9589	3.6100	2.0645	5.2121
Minimum	23.3718	3.1010	3.2653	3.6647	2.3563	1.3510	4.1069
Std. Dev.	0.5399	0.1587	0.1245	0.0874	0.3160	0.1946	0.2906
Skewness	-0.3310	-0.7644	-0.1505	-0.6868	0.0109	-0.0468	-0.1974
Kurtosis	1.7760	2.3117	1.7649	2.3892	2.5878	2.0659	2.3184
Jarque-Bera	1.6942	2.4593	1.4140	1.9771	0.1490	0.7709	0.5428
Probability	0.4286	0.2923	0.4931	0.3721	0.9281	0.6801	0.7622
Sum	510.1026	71.9419	73.3427	80.9011	63.7938	35.154	98.948
Sum Sq. Dev.	5.8307	0.5037	0.3101	0.1530	1.9979	0.7578	1.6899
Observations	21	21	21	21	21	21	21

Source: Authors' computations 2024

4.2   Correlation of the Variables

The correlation of the variables is presented in Table 3. The results indicate that LNGDP shows a negative correlation with most variables, except for LNME (0.41) and LNPSME (0.16), suggesting that military expenditure and its interaction with political stability may positively influence economic growth, albeit weakly. LNVA positively correlates with LNRQ (0.73) and LNPS (0.56), indicating that voice and accountability and regulatory quality contribute to value-added in the economy. LNRQ is positively correlated with LNVA (0.73) and LNRL (0.45), implying that better regulatory quality may enhance the rule of law and value-added. LNRL shows a strong negative correlation with LNGDP (-0.74), indicating that higher adherence to the rule of law might be associated with lower economic growth in this context. LNPS positively correlates with LNVA (0.56) and strongly with LNPSME (0.76), reflecting

the importance of political stability in conjunction with military expenditure. LNME negatively correlates with LNVA (-0.49) and LNRQ (-0.52), suggesting that higher military spending may detract from value-added and regulatory quality. LNPS*ME strongly correlates with LNPS (0.76), reinforcing the interdependence of political stability and military expenditure on economic outcomes. These correlations suggest complex interrelations, with variables like political stability and military expenditure potentially playing dual roles, both supporting and detracting from economic growth and institutional quality, depending on the context.

Table 3: Correlation Matrix of Variables of the Estimation Model

Variable	LNGDP	LNVA	LNRQ	LNRL	LNPS	LNME	LNPS*ME
LNGDP	1.0000	-0.3827	-0.3195	-0.7437	-0.0897	0.4121	0.1625
LNVA	-0.3827	1.0000	0.7262	0.4363	0.5569	-0.4851	0.2304
LNRQ	-0.3195	0.7262	1.0000	0.4456	0.4182	-0.5180	0.1062
LNRL	-0.7437	0.4363	0.4456	1.0000	-0.0227	-0.2448	-0.1472
LNPS	0.0897	0.5569	0.4182	-0.0227	1.0000	-0.4367	0.7591
LNME	0.4121	-0.4851	-0.5180	-0.2448	-0.4367	1.0000	0.2416
LNPS*ME	0.1625	0.2304	0.1062	-0.1472	0.7591	0.2416	1.0000

Source: Authors' computations 2024

4.3 Lag Selection of the Variables

The study determined the lag order selection using five criteria: the sequential modified LR test statistic, final prediction error (FPE), Akaike information criterion (AIC), Schwarz information criterion (SC), and Hannan-Quinn information criterion (HQ). Lag two (L2) was selected by three criteria—LR, FPE, and AIC—while lag one was chosen by SC and HQ. To avoid ambiguity, the study employed an automatic selection criterion to resolve the discrepancy between using lag one or two.

4.4   Unit Root Test Results

The study employs the Augmented Dickey-Fuller (ADF) test, finding that four variables are non-stationary at level, while one variable is stationary at level. At first difference, all variables become stationary at the 5 per cent level of significance. Modelling variables with different orders of integration can lead to spurious results. To address this, the study uses the Autoregressive Distributed Lag (ARDL) model, which accommodates variables with different integration orders, ensuring robust results. Table 4 presents the unit root findings

Table 4: Unit Root Test Results at Level and First Difference

Variables	With Intercept and no trend at level			With Intercept and no trend at first difference		
	t-statistic	prob	Decision	t-statistic	prob	Decision
LNGDP	-1.309522	0.6041	Non-stationary	-3.593971	0.0163	Stationary
LNVA	-1.719928	0.4059	Non-stationary	-3.093644	0.0442	Stationary
LNRQ	-1.630863	0.4492	Non-stationary	-3.081105	0.0453	Stationary
LNRL	-1.519355	0.5035	Non-stationary	-3.475289	0.0208	Stationary
LNPS	-2.983590	0.0580	Non-stationary	-6.433049	0.0000	Stationary
LNME	-2.000095	0.2839	Non-stationary	-3.886752	0.00601	Stationary
LNPSME	-3.408512	0.0230	Non-stationary	-7.812427	0.0000	Stationary

Source: Authors computation, 2024 Note: Significant with intercept and no trend = 1% (-3.808546); 5% (-3.020686) and 10% (-2.650413).

4.5   ARDL Bound Cointegration Test Results

Table 5 presents the ARDL-bound cointegration results, revealing that the variables are cointegrated. The computed F-statistic (5.29) exceeds the upper bound threshold of 4.01 at the 5 per cent significance level and 5.06 at the 1 per cent significance level. This implies the rejection of the null hypothesis of no cointegration, confirming that the variables are cointegrated. The results indicate long-run relationships, consistent with the error correction term, which is negative in the short-run results and adjusts to long-run equilibrium.

Table 5: ARDL Bound Cointegration Test Results

Null Hypothesis: No levels of relationship

F-Bounds Test

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	5.286487	10%	2.45	3.52
k	4	5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06

Source: Authors computation, 2024

4.6   Long Run Empirical Results

The study's long-run coefficient results in Table 6 reveal that the previous year's gross domestic product (GDP) has a significant positive effect on the current year's economic growth ($\beta = 0.829753$, $p < 0.05$). Voice and accountability have an insignificant positive effect on economic growth ($\beta = 0.144742$, $p > 0.05$), implying that improvements in these areas may enhance economic growth by around 0.14%, though not statistically significant at the 5% level. Similarly, regulatory quality in the current and previous years has an insignificant negative impact on economic growth ($\beta = -0.320720$, 0.634293, $p > 0.05$), indicating that failing to improve regulatory quality could potentially reduce economic growth.

The rule of law shows an insignificant positive effect on current economic growth ($\beta = 0.823366$, $p > 0.05$), while its impact in the previous years is negative and insignificant. Political stability also shows a significant and positive impact on economic growth both in the current year ($\beta = 0.4685$; $p < 0.05$) and in the previous year ($\beta = 0.5138$; $p < 0.05$), supporting H1: Political stability has a significant impact on the economic growth of Tanzania. Military expenditure has a significant positive effect on economic growth in the current year ($\beta = 1.4179$; $p < 0.05$), with a positive effect in the first lag and a positive effect in the second lag. This suggests that the impact of military expenditure on growth increases over time. supporting H2, military expenditure has a significant impact on the economic growth of Tanzania. When combined as an interactive variable, political stability and military expenditure have a significant and positive effect on current economic growth ($\beta = 0.1099$, $p < 0.05$), supporting H3, political stability and military expenditure, both individually and interactively, have a significant impact on the economic growth of Tanzania.

Table 6: Long Run Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNGDP(-1)	0.8297	0.0578	14.3447	0.0000
LNVA	0.1447	0.3526	0.4105	0.6984
LNVA (-1)	0.1283	0.3859	0.3324	0.7531
LNVA (-2)	-0.0053	0.2332	-0.0225	0.9829
LNRQ	-0.3207	0.3299	-0.9722	0.3756
LNRQ (-1)	-0.6343	0.4838	-1.3110	0.2468
LNRQ (-2)	0.3424	0.2989	1.1452	0.3040
LNRL	0.8234	0.4481	1.8375	0.1255
LNRL (-1)	-0.7682	0.3676	-2.0897	0.0909
LNRL(-2)	-0.2338	0.3501	-0.6678	0.5338
LNPS	0.4685	0.3609	1.2981	0.2187
LNPS(-1)	0.5138	0.3714	1.3835	0.1917
LNPS(-2)	-0.1280	0.2309	-0.5543	0.5896
LNME	1.4179	1.2852	9.1033	0.0215
LNME(-1)	1.7151	1.7992	0.9532	0.3593
LNME(-2)	-0.3686	0.9572	-0.3851	0.7069
LNPSME	0.1099	0.0678	10.6216	0.0028
LNPSME(-1)	0.2300	0.1023	2.2492	0.0744
LNPSME (-2)	0.0062	0.0691	0.0893	0.9323
C	5.5602	2.6631	2.0879	0.0911

Source: Authors computation, 2024

4.7 Short Run Results

The short-run empirical results, presented in Table 7, reveal that voice and accountability have a positive but statistically insignificant effect on economic growth at the 5% significance level ($\beta = 0.1447$, $p > 0.2550$). Regulatory quality negatively affects growth ($\beta = -0.3207$, $p > 0.0917$), while the rule of law positively impacts growth ($\beta = 0.8234$; $p < 0.0058$). Military expenditure shows a positive but statistically insignificant impact in both the current year and the previous year ($\beta = 0.1295$, $p > 0.0297$; $\beta = 0.1395$, $p > 0.4515$). Political stability has a negative and statistically insignificant effect in both periods. When combined, political stability and military expenditure negatively impact economic growth, statistically significant in the current year ($\beta = -0.1098$, $p > 0.0270$). The error correction term (ECt-1) is statistically significant ($\beta = -0.1702$, $p < 0.0010$), indicating a long-run relationship among the variables, with an 18% annual convergence towards equilibrium after economic shocks. The results suggest that military expenditure and institutional quality are interconnected with economic growth, with improvements likely to have a positive long-term impact as they tend to return to equilibrium after disturbances.

Table 7: Short Run Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
C	5.560226	0.800147	6.94901	0.0009
DLNVA	0.144742	0.112609	1.285351	0.255
DLNVA(-1))	0.005253	0.108798	0.048285	0.9634
DLNRQ	-0.32072	0.153983	-2.082824	0.0917
DLNRQ(-1))	-0.34235	0.135703	-2.522792	0.053
DLNRL	0.823366	0.178903	4.602317	0.0058
DLNRL(-1))	0.233799	0.157617	1.483331	0.1981
DLNPS	-0.07292	0.076338	-0.955225	0.36
DLNPS(-1))	-0.098104	0.059857	-1.638977	0.1295
DLNME	0.129501	0.128582	-2.49639	0.0297
DLNME(-1))	0.139523	0.232731	-0.780554	0.4515
DLNPSME	-0.109865	0.035507	-3.094146	0.027
DLNPSME(-1))	-0.006172	0.02679	-0.230396	0.8269
EC_{t-1}	-0.180247	0.024919	-6.832158	0.001

Source: Authors computation, 2024

4.7 Discussions of Empirical Results

The study's results indicate several key relationships between economic variables and growth in Tanzania. The significant positive effect of the previous year's gross domestic product (GDP) on current economic growth suggests that a higher GDP from the previous year is likely to boost economic growth in the current year by approximately 0.83%. This finding is consistent with Ajala and Laniran (2021), who identified a similar positive relationship between military expenditure and economic growth in Nigeria. Voice and accountability, while showing a positive effect on economic growth are not statistically significant, indicating that improvements in these areas might enhance growth, but the evidence is not strong enough to confirm this effect at the 5% significance level. Similarly, regulatory quality has an insignificant negative impact on economic growth both in the current year and the previous years, suggesting that inadequate regulatory quality could potentially hinder growth, although the relationship is not statistically significant. The rule of law shows an insignificant positive effect on current economic growth while its impact in previous years was negative and insignificant. This suggests that the rule of law may support growth in the short term, but its long-term influence is less clear. Political stability, on the other hand, has a significant and positive impact on economic growth both in the current year and in the previous year, supporting the hypothesis that political stability is crucial for economic growth in Tanzania. This result aligns with earlier studies by Alesina et al. (1996), Campos and Nugent (2002), and Kim (2010), which emphasize the importance of a stable political environment for fostering investor confidence and promoting higher economic growth.

Military expenditure also shows a significant positive effect on economic growth in the current year and continues to have positive effects in subsequent lags. This suggests that the impact of military expenditure on growth not only materializes in the short term but also intensifies over time. This finding is in line with previous research by Hou and Chen (2013) and Dunne and Tian (2015), which reported significant positive impacts of military spending on growth, particularly in the short term with effects extending into the medium and long term. When military expenditure and political stability are combined as an interactive variable, they also have a significant and positive effect on current economic growth. This supports the hypothesis

that both political stability and military expenditure, whether considered individually or interactively, have a significant impact on Tanzania's economic growth. This conclusion is consistent with studies by Saba and Ngepah (2019), Odehnal et al. (2020), Ajala and Laniran (2021), and Susilo et al. (2022), all of which found that military spending and political stability positively and significantly impact economic growth. In the long run, the quality of institutions, including factors such as voice and accountability, the rule of law, and political stability, positively impacts economic growth, supporting the endogenous growth model. This model suggests that strong institutional quality can attract investors, thereby boosting productivity and output. However, regulatory quality only shows a positive impact in the second lag, indicating that its influence on growth may take time to become evident. Furthermore, military expenditure, which positively impacts growth in the long run and is statistically significant at the 5% level, aligns with Keynesian theory. The interactive effect of political stability and military expenditure, while initially negative, becomes positive and statistically significant over time, suggesting that these factors, when combined, contribute to long-term economic growth.

Military expenditure can contribute to national security, which is a prerequisite for economic activities. When a country invests in its defence, it can deter external threats and maintain internal order, creating a stable environment conducive to investment and economic growth. Political stability is a critical factor for attracting both domestic and foreign investment. A stable political environment reduces uncertainty and risks, encouraging investors to commit resources to long-term projects, which boosts economic growth. Therefore, the impact of military expenditure and political stability on economic growth in Tanzania is multifaceted. Military spending contributes to security, infrastructure, and technological advancements, while political stability attracts investment, ensures policy consistency, and strengthens institutions. The interplay between these factors creates an environment conducive to economic growth. Understanding these mechanisms provides insight into how these variables can be leveraged to promote sustainable development in Tanzania. This indicates that military expenditure and political stability are substitutive rather than complementary in driving Tanzania's economic growth.

5.0   Conclusion and Policy Implications

This study examines the relationship between political stability, military expenditure, and economic growth in Tanzania, using econometric analyses to ensure data validity and reliability over 20 years from 2002 to 2022. The ARDL model is employed due to mixed orders of integration, confirming the robustness of the results. The findings reveal that both political stability and military expenditure, whether individually or interactively, have complex and nuanced effects on economic growth. Political stability generally has a positive impact on economic growth, though its effects can vary depending on time lags, reflecting the time needed for investor confidence to translate into economic benefits. Military expenditure shows a dual role, with short-term positive impacts that may turn negative over time, possibly due to the diversion of resources from more productive sectors. The results highlight the importance of considering both the immediate and long-term effects of these variables. The negative impact when combined suggests that while they may individually support growth, their interaction could hinder economic progress. This indicates that policies enhancing political stability and military expenditure need careful coordination to avoid counteracting the intended growth outcomes.

The study contributes to existing knowledge by providing empirical evidence on the relationship between political stability, military expenditure, and economic growth in a

developing country context. It supports the Keynesian theory, suggesting that military expenditure can stimulate economic growth through increased aggregate demand, but also highlights the theory's limitations when spending is directed towards unproductive sectors, potentially hindering long-term growth.

The research also supports the endogenous growth theory, which asserts that institutional quality, including political stability, is crucial for fostering economic growth. The positive effects of voice and accountability, regulatory quality, and the rule of law reinforce the importance of strong institutions for sustained economic development. Additionally, the study adds to the literature on the substitutive and complementary roles of political stability and military expenditure, offering a nuanced understanding of their interactions in influencing economic growth.

From a policy perspective, the findings have several key implications. Policymakers in Tanzania should recognise the potential impact of political stability and military expenditure on economic growth while being mindful of their negative interactions. Enhancing political stability should focus on building investor confidence through strong institutions, the rule of law, and good governance. Regarding military expenditure, while short-term increases may boost economic growth through heightened demand, excessive or prolonged spending could detract from other crucial sectors. Therefore, the government must balance national security with investments in areas that directly contribute to economic productivity, such as education, healthcare, and infrastructure.

While this paper provides valuable insights into the dynamics of political stability, military expenditure, and economic growth, several areas warrant further exploration. Future research could focus on examining the specific sectors where military spending is directed could provide a deeper understanding of how this expenditure impacts different areas of the economy and conducting comparative studies across different countries

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