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Estimation of the Impact of Military Spending on Mauritania's Economic Growth for the Period 1990-2018

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Abstract: The study examined the relationship between military spending and economic growth in Mauritania for the period 1990-2018 using VAR models and causality tests. The most important of the independent variables selected are the increase in government spending on the military as a proportion of GDP and labor force growth, as well as significant changes in capital protection. The most striking finding is that military spending has long-term effects. Total capital formation has also changed positively. The most important recommendation is that supporting security and stability can improve the prospects for economic growth in the country.

Keywords: military spend, economic growth, VAR models, capital protection.

Introduction:

Economists do not agree on the nature of the relationship between military spending, that is (the ratio of military spending to GDP), and its impact on economic growth, including those who say that the relationship is positive and those who say that the relationship evil is between them, as it is unclear whether defense spending promotes or hinders economic growth. Each group has an argument based on it. The first group of advocates of a positive relationship between military spending and economic growth believe that defense spending creates security that leads to more productive economic activity without fear of using national funds. again. On the other hand, what is spent on training and scientific research projects in the field of safety and security contributes to the development of human capital that can also be used in the civilian sector.

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Also, the expenditure on infrastructure in the critical facility such as airports and military equipment manufacturing plants, as well as the opening of roads and bridges, stimulate investment and thus lead to economic growth.

The second group advocates a negative relationship between military spending and economic development and thinks that such spending leads to unfair private investment by reducing income. which the company's employees receive. to the education and exclusion of scientists who produce work and skills in the foundation that deprives the sector of its normal production; An increase in spending can lead to a balance of payments deficit.

This study complements previous studies and a standard model has been used to establish the relationship between Mauritania's defense military expenditures and economic growth for the period 1990-2018 and using data (time series).

The This study aims to determine the extent to which Mauritania's military spending affects the country's economic growth and examine their relationship.

The hypothesis of the study is that military spending leads to economic growth in Mauritania and that the relationship between them is positive..

First Theme Review of Literature:

1. In a study (Mohammed Ramadan Mohammed) in his doctoral thesis titled The Impact of Military Spending on Economic Growth, this study aims to analyze the relationship between military spending and economic growth in various developed countries. and developing countries during the period (1980-2016). . The study found a correlation between military contracts and economic growth in the case of the United States and no such relationship in Germany, India and Brazil, while the study showed a correlation between the two variables . case of Egypt. (Mohammed: 2019, 1)

2. Omar Wali-Eddin Fadlallah et al. 2017 study analysed the impact of military expenditure on Sudan's economic development during the period 2000-2013.

The study examined the impact of military expenditure on Sudan's economic development by examining its impact on a variety of economic variables, such as the State budget, investment, the balance of payments of external indebtedness, employment, social development and inflation, and its impact on various economic development programmes and the livelihood and well-being of the population. The study drew several conclusions and recommendations. Although the impact of military expenditure on capital formation rates was positive, it was not inconsistent with the conclusion that the ultimate impact of military expenditure on growth rates was negative. A reduction in military expenditure would result in these resources being directed to productive ends that contribute to increasing investment, revitalizing the national economy and raising the population's living standards.

(Omar Wali-Din and others: 2017, 2)

3. A study by Haifa Ghana and Rémy Riad called military spending and economic growth in Algeria. This study aims to analyze the relationship between spending and economic growth in Algeria and to test the methodology described in this study for the relationship between these two variables during 1973-2016, using a modern method of Pesaran et al. (2001) showed, that is. , ARDL. The study showed a long-term relationship between military spending and GDP and is a specific support for economic growth. (Haifa and Riyadh: 2016, 431)

4. Khaled Haider's study examines standard economic analysis of the relationship between military government spending and economic growth (in most developing countries) for the years 1990-2017 and

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applies the program to developed countries. and is a developed country, the increase. and expenses do not cause problems in their balance, but have a positive effect on various economic activities. Developing countries that are unable to reach the budget, these expenses (military) represent their weight and balance and affect various other functions. , while standard tests in countries of the model have shown the validity of their assumptions, since military spending affects their GDP positively and therefore their growth rate.. (Khalid: 2018, 496)

Research in Tanggah Chairil, Elat (2013) and his study of the relationship between military spending and economic growth in Indonesia through an experimental test of the negative relationship between variants using the Augmented Slow Growth model. mode)

The result is that Indonesia's military spending has had a positive effect on the country's economic growth, because most of the military spending is labor, which has led to the development of human capital. . (: Tangguh Chairil elat 2013, 118)

6. Rafah Adnan Najm et al. (2021) conducted an analytical study of the impact of military expenditure on China's economic growth for the 1995-2018 period. The research adopted the analytical descriptive approach, reinforced by the standard aspect, according to tests such as: Unit radical, stability test, self-degradation vector, Cranjo relativity and reliance on World Bank data The research found a strong positive significant relationship between military expenditure and economic growth, trade and the reverse significant relationship with unemployment rates. The research found a two-way causal relationship between the military agreement and economic growth, as well as the involvement of economic growth and military expenditure in increasing the volume of exports and thus improving trade for the country's benefit. (Star and Others: 2021, 534)

Second Typical and experimental evaluative Theme:

In order to estimate the impact of military spending on economic growth [(3)] , three of the independent variables influenced were selected two representing control variables and one variable representing government expenditure since the proposed growth equation is:

The relationship assessment was based on the data of Supplement (1) obtained from the World Bank website

https://data.worldbank.org/

Y= F (X1, X2 , X3)

The full model for estimating the impact of military expenditure on economic growth takes the following formula: -

LnY= Bo + B1 LnX1 + B2 LnX2 + B3Ln X3 + U ……(1)

Where:

Y Ln = Natural logartimes GDP per capita

LnX1 = Natural logarithm of military expenditure (% of GDP)

LnX2 = Natural logarithmic workforce, total

LnX3 = Natural log of total fixed capital formation (% of total domestic product)

BO, B1, B2, B3) represents parameters.

Standard curriculum and statistical methods used: -

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First: Causation analysis: - In the context of quantifying the impact of military spending and model control variables on Mauritania's economic growth during the selected period of time, the study initially tested the causal relationship between the independent variables and the dependent variable [(4)] using the Granger-Causality Test, the results of which can be shown in the following table below:

Pairwise Granger Causality Tests			
Prob.	F-Statistic	Obs	Null Hypothesis:
0.0296	4.18294	26	LnX1 does not Granger Cause D(LnY)
0.6026	0.51891		D(LnY) does not Granger CauseLn X1
0.2593	1.44048	26	D(LnX2) does not Granger Cause D(LnY)
0.3590	1.07614		D(LnY) does not Granger Cause D(LnX2)
0.0011	9.54114	26	D(LnX3) does not Granger Cause D(LnY)
0.8498	0.16405		D(LnY) does not Granger Cause D(LnX3)
0.0569	3.29519	26	D(LnX2) does not Granger Cause Ln X1
0.7105	0.34742		LnX1 does not Granger Cause D(LnX2)
0.8410	0.17466	26	D(LnX3) does not Granger Cause Ln X1
0.3639	1.06125		LnX1 does not Granger Cause D(LnX3)
0.5689	0.57953	26	D(LnX3) does not Granger Cause D(LnX2)
0.1758	1.89034		D(LnX2) does not Granger Cause D(LnX3)

Source: From the researcher's implementation using Eviews 8

Moderators have confirmed its stability since the X1 model has presented itself as the only stable variant of the level. Other variables are free and as shown by the models shown in appendix (2) from the diagram since all variables have direction in time except x1. From the results presented in Table 1, it shows us that the three variables make changes in the dependent variable (Y), because we see that X1 causes changes in the dependent variable D (Y) , because the value of the variable is.

P-value is less than 5% (0.0341), which means that changes in military spending lead to changes in economic growth. Regarding the variant X2, we accept the null hypothesis that the independent variable X2 does not change the variant Y because the p-value is greater than 5%, which means that the growth of employment has no effect on economic growth , where D (X3) which represents investment (direct capital) causes changes in economic growth.

To explore the magnitude of that relationship between independent variables and economic growth, the study resorted to:

LnY_{tj}= aj $+\sum_{i=1}^{m} BijYt-i,j+\sum_{i=1}^{m} \delta ijXt-i,j+\varepsilon_{tj}$

To use Vector Auto-regression Model, In order to estimate the following regression model:

Table (2) The relationship between military spending and economic growth using a self-degradation method.

D(LnX3)	D(LnX2)	LnX1	D(LnY)	
-0.750098	-0.000386	0.219305	0.131422	D(LnY(-1))
(2.44323)	(0.01310)	(0.99761)	(0.18899)	
[-0.30701]	[-0.02947]	[0.21983]	[0.69541]	
-2.685495	0.015471	-0.280412	0.145572	D(LnY(-2))
(2.34744)	(0.01259)	(0.95850)	(0.18158)	
[-1.14401]	[1.22916]	[-0.29255]	[0.80171]	

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0.215644	-0.000621	0.130129	-0.054077	LnX1(-1)
(0.62566)	(0.00335)	(0.25547)	(0.04840)	
[0.34467]	[-0.18520]	[0.50938]	[-1.11739]	
-0.356901	0.003474	-0.154587	*** 0.110674	LnX1(-2)
(0.53772)	(0.00288)	(0.21956)	(0.04159)	
[-0.66373]	[1.20499]	[-0.70408]	[2.66086]	
-30.19170	1.856591	-10.04482	1.844705	D(LnX2(-1))
(28.5836)	(0.15326)	(11.6711)	(2.21097)	
[-1.05626]	[12.1137]	[-0.86066]	[0.83434]	
45.07804	-0.992501	20.65478	-2.138589	D(LnX2(-2))
(34.0066)	(0.18234)	(13.8854)	(2.63045)	
[1.32557]	***[-5.44306]	[1.48752]	[-0.81301]	
**-0.618464	-0.000519	-0.101717	*** 0.069114	D(X3(-1))
(0.26563)	(0.00142)	(0.10846)	(0.02055)	
[-2.32832]	[-0.36448]	[-0.93783]	[3.36377]	
-0.403084	-0.000449	-0.116449	*** 0.065549	D(LnX3(-2))
(0.27972)	(0.00150)	(0.11421)	(0.02164)	
[-1.44102]	[-0.29911]	[-1.01956]	[3.02951]	
0.207639	-0.002745	1.042010	-0.055125	C
(0.81377)	(0.00436)	(0.33228)	(0.06295)	
[0.25516]	[-0.62920]	[3.13598]	[-0.87574]	
0.339066	0.975311	0.437328	0.655771	R-squared
0.028039	0.963693	0.172541	0.493781	Adj. R-squared
2.611091	7.51E-05	0.435325	0.015623	Sum sq. resids
0.391910	0.002101	0.160023	0.030315	S.E. equation
1.090148	83.94713	1.651620	4.048214	F-statistic
-7.014132	128.9249	16.27448	59.53031	Log likelihood
1.231856	-9.224992	-0.559575	-3.886947	Akaike AIC
1.667351	-8.789497	-0.124080	-3.451452	Schwarz SC
0.039275	0.002764	1.045608	0.011559	Mean dependent
0.397523	0.011029	0.175917	0.042607	S.D. dependent

(*) At a significant level of 10%, (* *) a significant level of 5%, (* * *) a significant level of 1%

With careful consideration of the results of the regression models shown in the previous table, a number of findings can be drawn and can be summarized as follows: -

The variable (LnX_1) which expresses military spending as a proportion of GDP to show positive significance on economic growth during the second period, shows a sound theoretical logic for such results in defense economics literature. There are two secondary effects of military spending on growth according to Deger: 1986: one direct and the other indirect. The direct role of military spending affects the physical and social infrastructure that ultimately increases growth. Deger (1995) also explained the positive effect of conservation debt on economic growth through the creation of innovations that are successful in conservation.

This means that increased defense spending leads to peace and security that can support foreign and domestic investment, leading to innovation and growth. The positive findings of military spending and

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growth in this study are consistent with the findings of other researchers, such as (Grobar & Porter: 1973).

Biswas (& Ram: 1986)

(Biswas, 1992) (Ward et al, 1991)

(Alexander,1990) (Ramos, 2004); (Sheikh & Chaudhry,2016)

The D (LnX2) variant, which represents growth in the labor force, shows insignificance in its relationship with economic growth, owing to the fact that Mauritania's economy suffers from minimal capital, which means that the growth of the labor force with a lack of capital results in labor being subordinated to a decreasing profit law and the signal of the variable was negative.

The D (LnX3) variable, which reflects investment, has had a significant impact on its impact on economic growth. Increased investment will increase economic growth rates. The positive impact during the two periods has shown a very high statistical significant level. Mauritania's economy suffers from a scarcity of capital.

Thus, any added unit of capital has high marginal productivity. Foreign and domestic investment promotion policies will enhance the prospects for economic growth in Mauritania's economy.

Conclusions and recommendations:

First: Conclusions:

1- The analysis showed that military spending has a positive impact on economic growth during the second period and this is consistent with most previous studies as well as with the research hypothesis

2- The growth of the workforce did not have a statistical significant relationship with economic growth, which means that the workforce is subject to a decreasing profit law.

3- The analysis showed that investment has a positive impact on economic growth and statistically significant.

Second: Recommendations:

1- Increased military expenditure may generate many positive external impacts that promote economic growth. Ensuring security and stability may stimulate foreign investment to flow into the country.

2- Increased government spending on infrastructure would enhance the country's prospects for economic growth and development. The standard side showed a strong and positive relationship between fixed capital accumulation and economic growth.

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Annex (1) Mauritania's Data for the Period (1990-2018)

Gross fixed capital formation (% of GDP)	Labor force, total	Military expenditure (% of GDP)	GDP per capita (constant LCU)	Years
19.96618	2.611892	3.827926	15864.69	1990
17.23654	2.599013	3.600512	15734.08	1991
20.67183	2.587652	2.689066	15619.5	1992
14.32651	2.574882	2.412423	16116.56	1993
49.099	2.558891	2.240862	15228.57	1994
20.37733	2.543895	2.260155	16303.91	1995

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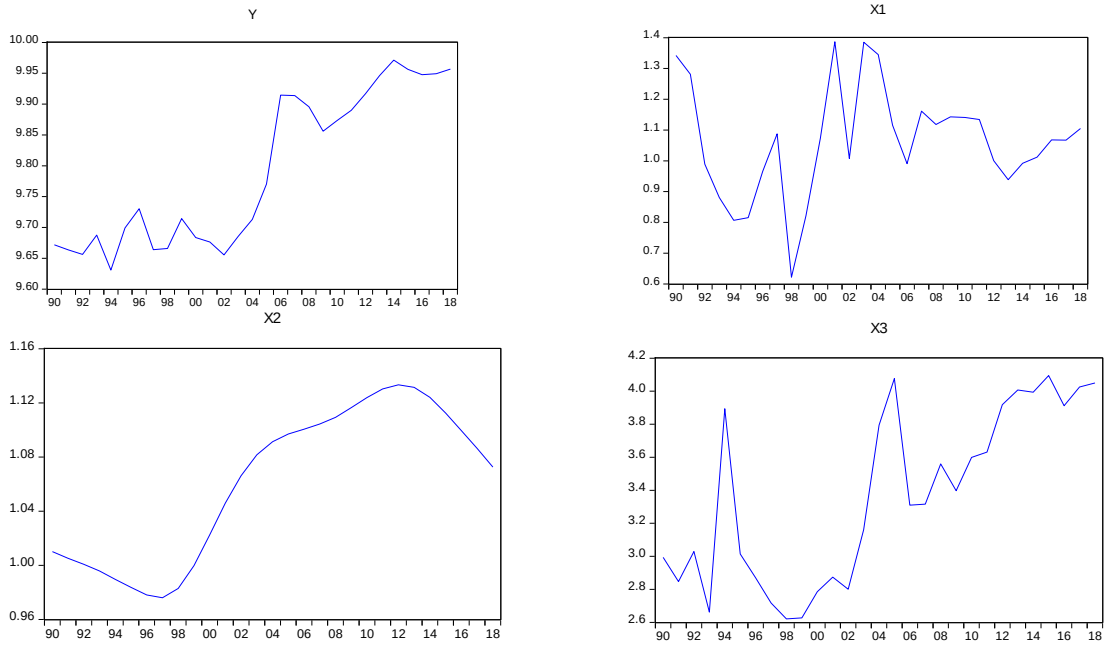
17.625	2.529554	2.626341	16821.66	1996
15.13975	2.524318	2.96726	15738.92	1997
13.74385	2.541955	1.862441	15770.11	1998
13.83978	2.585022	2.273638	16552.95	1999
16.21112	2.644091	2.928005	16051.63	2000
17.70681	2.707315	4.002384	15936.72	2001
16.45127	2.762661	2.739384	15605.56	2002
23.59803	2.805704	3.995276	16080.93	2003
44.43785	2.83295	3.83812	16530.18	2004
58.95761	2.849118	3.051556	17506.88	2005
27.37186	2.859079	2.693647	20223.71	2006
27.55812	2.870166	3.194441	20205.26	2007
35.14277	2.884476	3.059334	19842.77	2008
29.88622	2.90532	3.135324	19073.71	2009
36.54842	2.9268	3.1297	19407.81	2010
37.74916	2.94552	3.108119	19730.95	2011
50.32522	2.954438	2.720187	20266.67	2012
54.97903	2.949158	2.557094	20876.12	2013
54.27261	2.92732	2.69589	21405.06	2014
60.01827	2.893574	2.750747	21085.69	2015
50.00001	2.85611	2.909982	20901.82	2016
56.0004	2.819	2.907154	20936.44	2017
57.39358	2.780434	3.019252	21095.38	2018

Annex (2) Diagram of the direction of variables over time



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