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Institutional Quality and the Crowding-Out Effect of Military Expenditure on Maternal Health in Nigeria

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Abstract: Spending on the military is also increasing in Nigeria, raising fears that it is eroding much needed investments in maternal services. The present investigation examines the effects of state defense expenditure on the maternal mortality rate (MMR) from 2000 to 2024 to determine if better institutions can buffer the impact of defense spending on MMR. Using annual time series data, the analysis does confirm (by applying the bounds testing approach of the Autoregressive Distributed Lag (ARDL) methodology) the long-run cointegrating relationship among the variables is stable. Empirical findings indicate that military spending positively and significantly affects maternal mortality ($\beta = 0.428$ with $p = 0.018$), thus supporting the crowding-out hypothesis. More importantly, the connection term between defence spending and institutional quality is negative and significant ($\beta = -0.186$, $p = 0.032$), meaning that a strong institutional environment has a significant dampening effect on the negative influence of defence spending on maternal health outcomes. MMR is negatively affected by real GDP per capita and public health expenditure, and is negatively affected by a fall in the exchange rate. The error correcting term (-0.682 , $p = 0.001$) implies that the process of adaptation to long-run equilibrium takes place at a relatively quick rate. The results for this paper offer strong support to institutional theory, and constitute an extension of the guns versus butter debate by pointing to governors quality as a critical institutional starting point for fiscal trade-offs in developing countries. The study highlights that while budget reallocation is necessary, institutional changes should be included as an ancillary approach in guaranteeing maternal health in the context of security concerns.

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1. Introduction

One of the most discussed issues of the allocation of public resources in developing economy is security-social development. Since the inception of insecurity in Nigeria, budgets for their military have been heavily allocated, and it is pertinent to ask what it means for Nigeria's maternal health, since it currently poses a high danger for the health of its citizens. Though security expenditure is essential to tackle insurgency, banditry, etc., it might become a significant policy issue if it "crowds out" investments in maternal healthcare [1], [2].

Despite the global commitment to reduce maternal deaths under the Sustainable Development Goals (SDGs), maternal death remains a major public health problem in Nigeria. Nigeria has one of the highest maternal mortality ratios (MMR) in the world, with approximately 993 deaths per 100,000 live births in 2023 [3], [4]. Although accounting for approximately 2.6% of the world's population [5], [6], this remains a profound tragedy of humankind and development, with far-reaching socioeconomic implications. This implies

that in every 2 minutes, a girl-child who is a woman dies from preventable causes of pregnancy and birth.

Besides, the health sector is severely underfunded. Although Nigeria's public health expenditure has increased in recent years, the levels remain abysmally low (0.5% to 1% of GDP), still falling short of the Abuja Declaration of 2001 (15% of GDP) [7], [8], [9]. This persistent challenge occurs against the backdrop of weak institutions. Governance structures are expected to design and drive resilient health systems, yet Nigeria repeatedly scores poorly on global governance indicators, including control of corruption, rule of law, and government effectiveness [10], alongside weak accountability mechanisms. These institutional weaknesses enable inefficiencies and leakage in defence procurement as well as poor coordination between security and health sectors [11], [12]. Consequently, institutional quality may serve as a potentially important moderating variable that can either enhance or limit the productivity of military spending in producing real security gains or contribute to resource diversion that generates human insecurity [13], [14].

The empirical study on the impact of military spending on public health outcomes remains limited, especially within single-country contexts such as Nigeria. The existing body of literature is still small compared to global studies [15], [16], [17], [18], [19], [20], [21], [22], [23], [24], [25], [26], [27].

Importantly, the current literature often assumes that the defense–health relationship is linear and unconditional, and has been largely ignored for its impact on governance of a public resource. To bridge this gap, this study pays particular attention in order to examine the interactive and moderating effect of institutional quality on the defense spending and maternal mortality nexus in Nigeria. This paper presents empirical evidence on the conditional transmission channels through which military spending can limit or select amongst provider capacity and maternal healthcare delivery from an advanced time-series econometric structure, like ARDL bounds testing approach. The rest of the paper can be organized as follows: A review of the theoretical and empirical literature can be presented in Section 2, methodology in Section 3, empirical results in Section 4, detailed discussion in Section 5, and policy implications in Section 6.

2. Theoretical Framework and Literature Review

The study focuses mainly on Institutional Theory [28], [29], which states that institutions, through their structure and operation, contribute to the performance and effectiveness of how public resources are allocated. Institutions lower transaction costs, curb rent-seeking, and improve policy execution, and vice versa [30]. This is linked to the Guns versus Butter Theory [31]. This theory emphasizes the implicit trade-offs in government spending between defence (guns) and social welfare (butter). However, the current study argues that this trade-off is not automatic or fixed, but depends on the quality of governance institutions.

The crowding-out hypothesis is generally supported by empirical evidence. The inverse association between military and health spending has been observed at the global level as highly significant [17]. Badmus found in Africa that increases in military expenditure negatively affect health outcomes, mediated by institutional quality [4]. Gnidehou et al. and Raifu et al. also reported similar conditional effects [32], [33]. Nevertheless, evidence on health financing pathways in Nigeria remains limited. Studies such as George-Anokwuru (2024) used autoregressive bounds testing to show the long-run significance of public health expenditure in reducing maternal mortality but also noted that public health financing is structurally low and vulnerable to fiscal shocks [33]. Public health funding and macroeconomic stability remain key determinants of maternal survival, as highlighted by George-Anokwuru and Awoyemi et al. [33], [34]. They consider the relationships linear, and do not explicitly model the circumstances (institutional quality) of or moderation for the primary fiscal trade-offs giving rise to underfunding. This

study aims to fill this gap by linking the traditional Nigerian defence-health budget nexus with institutional moderation.

3. Methodology

3.1 Research Design

The ex-post facto research design is used in this study. Ex-post facto design is a method that involves comparing groups on the basis of some already existing dependent variable(s). Another term to describe the ex post facto research design could be a quasi-experimental study exploring the effects of an independent variable which came first in the study on a dependent variable. The conclusions about the relationship between the variables are drawn without intervening and/or varying the independent or dependent variable. This approach gives the researcher the opportunity to ascertain the impact of independent variable(s) as well as to understand if they are interacting in any way influencing the dependent variable(s).

3.2. Methodological Framework

This study is based upon two major theories, namely:

3.2.1 Guns versus Butter Theory (Trade-off Theory)

The Guns versus Butter Theory was popularized by classical economists and developed in public finance literature as a framework describing the fundamental trade-off in government resource allocation between defense (guns) and social welfare spending (butter) [31], [35]. However, in the context of this study it is hypothesized that higher military expenditure will crowd out the spending on public health which will negatively impact maternal health outcomes (the more death caused by mothers due to their pregnancy).

This theory offers a basic rationale for assuming that there will be a negative correlation between expenditure on defense and maternal death rates as a result of less funding for health care.

3.2.2 Institutional Theory (North, 1990; Acemoglu & Robinson, 2012)

Institutional Theory highlights the importance of the quality of institutions in the effectiveness of public policies and resource allocation. Discussing the “filipendy” character of weaknesses in health budgets and execution, and corruption in defence contracts is important because strong institutions (rule of law, low corruption, and government effectiveness) can reduce negative impacts, whereas weak institutional capacity can amplify inefficiencies in both health budgeting and defence expenditure execution [4]. This theory will support the consideration of the moderating variable of institutional quality. It is supposed to influence the correlation between army spending and maternal mortality.

3.2.3 Integration of Theories

Both theories are included together in a moderated mediation proposal, wherein military spending has both direct (guns vs butter) and indirect (mediation) positive impacts on maternal mortality but with an institutional quality moderation over the entire process.

3.3 Model Specification

The empirical analysis shows a set of studies utilizing the panel approach, most of which reported mixed results between defence expenditure and health outcomes in Africa. Badmus (2025) offers the most recent and relevant framework by investigating the moderating effect of institutional quality in the relationship between military expenditure and maternal mortality, using the System Generalized Method of Moments (System GMM) for African countries [4]. The study demonstrates that military spending has a negative crowding-out effect on maternal mortality outcomes, and that institutional quality conditions the strength of this relationship [4].

The moderation model is specified as:

$$\ln \text{MMR}_t = \beta_0 + \beta_1 \ln \text{MILEXP}_t + \beta_2 \text{IQ}_t + \beta_3 (\ln \text{ME}_t \times \text{IQ}_t) + \beta_4 \ln \text{PHE}_t + \beta_5 \ln \text{GDPPC}_t + \beta_6 \ln \text{EXR}_t + e_t$$

Where:

MMR = Maternal mortality rate per 100,000 live births

MILEXP = Military expenditure as % of GDP

IQ = Institutional quality index

$\text{MILEXP}_t \times \text{IQ}_t$ = Interaction term capturing moderating effect

PHE = Public health expenditure as % of GDP

GDPPC_t = Real GDP per capita, constant 2015 US\$

EXR = Exchange rate, Naira per US Dollar

t = time period, 2000-2023

3.2 Data source

Data for annual time series was collected from SIPRI (military expenditure), WHO and World Bank (maternal mortality and health expenditure) and Central Bank of Nigeria (Exchange rate and GDP per capita) for the period 2000 to 2024.

3.3 Estimation Technique

The Autoregressive Distributed Lag (ARDL) bounds testing methodology outlined by Pesaran et al. (2001) is appropriate for small sample sizes and different orders of integration [34]. The short-run dynamics in the model are examined using the Error Correction Model (ECM). The ARDL bounds testing approach is a co-integration technique used to test for the existence of a long-run relationship between variables and to capture both short-run and long-run causal relationships [34]. The ARDL bounds testing framework is based on earlier work by Banerjee et al. (1998) and Kremers et al. (1992) [35], [36]. In 2001, Pesaran, Shin, and Smith (PSS) proposed the use of the bounds testing procedure using standard Wald, F, and t statistics to test the significance of lagged level variables in a univariate ECM [37]. Thus, if Wald/F statistic for one computed in testing the joint significance of the variables with one degree of level lagged periods is at the top of the critical values, then the null of no cointegrating is rejected without knowing whether the regressors are pure I (0), pure I (1) or a mix of pure I (0) and pure I (1) or mutually cointegrated; but if the statistic is at the bottom of the critical values then the null is not rejected. When the calculated F is between the values, there is no conclusion for inference. The order of the variables must be determined in order to be able to make inferences. If the F test results in a rejection of the null, it is necessary to test the effect of the lagged dependent variable (for the existence effect). In the event that the calculated t statistic for the lagged dependent variable is also greater than the upper bound critical value, this confirms the presence of a level relationship between t y and t x although with one constraint - that the dependent variable is in I (1).

4. Results

4.1 Cointegration Test

ARDL Bound Test for Cointegration

Test		
Statistic	Value	K
F-statistics	5.87	5
Significance	I(0)	I(1)
Level	Bound	Bound

10%	2.72	3.77
5%	3.23	4.35
2.50%	3.69	4.89
1%	4.29	5.61

Author's computation

The table above shows the bound test result which indicates that there exist long run relationships amongst the variables as the F-statistic value of 5.87 exceeds both the lower and upper bound critical values. Thus we reject the null hypotheses of no long run relationship and accept its alternative. This means that there exists a stable long-run cointegrating relationship among military expenditure, institutional quality, GDP per capita, public health expenditure, exchange rate, and maternal mortality rate in Nigeria over the period 2000–2024.

4.2 Long-run Moderation Results

Table 1. Long-run ARDL Estimates.

			Std.	t-	
Variable		Coefficient	Error	Statistic	p-value
Military Expenditure					
(ME)		0.428	0.164	2.611	0.018**
Institutional Quality					
(IQ)		- 0.312	0.11	- 2.843	0.012**
MILEXP × IQ		- 0.186	0.08	- 2.332	0.032
Real GDP Per Capita		- 0.674	0.216	-3.123	0.006***
Public Health					
Expenditure		- 0.291	0.147	-1.980	0.062*
Exchange Rate		0.356	0.144	2.471	0.024**

***p < 0.01, *p < 0.05, p < 0.10

Author's computation

Long-run Autoregressive Distributed Lag (ARDL) estimates of the variables in Table 1 result in a strong equilibrium relation among the variables. Importantly, the model indicates that there exists a long run cointegrating relationship in defense spending and maternal mortality rate (MMR) in Nigeria with a tremendous moderating effect of institutional quality. Military expenditure (MILEXP) positively impacts the value of MMR at the level of 0,0182 ($p=0.0182$), and the impact value is $\beta = 0.428032$. This suggests that a 1 percentage point rise in military expenditure relative to GDP will lead to an increase in long-run maternal death by about 0.43%. This is consistent with the 'Guns versus Butter' theory which argues that spending on defense can have negative effects on essential expenditures in health care, adversely affecting maternal health over time. In contrast, institutional quality (IQ) has a significant negative effect on MMR ($\beta = -0.312456$, $p = 0.0124$), meaning that a unit change in IQ lowers maternal mortality by about 0.31 per cent. It aligns with the institutional theory, the importance of better governance, transparency, and accountability in the plant use of public resources to improve healthcare. Significantly, the interaction term between defense spending and governance (MILEXP × IQ) is negative

and statistically significant (with $\beta = -0.185673$, $p = 0.0317$). The decline is approximately 0.19% and is evidence of effective institutional mechanisms in place to counter the negative impacts of high spending on the military on maternal health. As far as the control variables are concerned, the variable Real GDP per Capita (RGDPPC) shows a highly significant negative relationship with MMR ($\beta = -0.674128$, $p = 0.0061$). Once income per capita is increased by one unit, there is a 0.67% fall in maternal deaths per capita, confirming the economic theory that higher income gives increased fiscal space that benefits improvements in healthcare access. There is also a reduction in MMR ($\beta = -0.291245$) resulting in a 0.29% decrease due to Public Health Expenditure (PHE). It was marginally significant at 10% ($p = 0.0623$), but with a negative coefficient it proves to be a valuable mediator in the defence-maternal health nexus as expected. Conversely, the exchange rate (EXR) is positively related to MMR ($\beta = 0.356478$, $p = 0.0245$). Maternal death goes up by 0.36% if the Naira is revised or devalued, probably due to the inflationary impact on costs of import medical equipment, drugs and health consumption. In overall the model has high explanatory power, the R^2 adjusted of the model accounted for 48.36% of the variation in Nigeria's maternal mortality rate. Lastly, the F-statistic is statistically significant at the 1% level, thus proving the statistical significance and goodness of fit of the overall model.

4.3 Short-run Dynamics and Diagnostics

Table 2. ARDL Short-run Result.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.84567	1.087234	-3.53671	0.0021
D(MILEXP)	0.214567	0.098765	2.172345	0.0428
D(MILEXP(-1))	0.087654	0.112345	0.780123	0.4456
D(IQ)	-0.09877	0.06789	-1.45568	0.1623
D(MILEXP x IQ)	-0.11235	0.054321	-2.06891	0.0524
D(RGDPPC)	-0.38765	0.145678	-2.66123	0.0167
D(PHE)	-0.15679	0.108765	-1.44123	0.1654
D(EXR)	0.198765	0.078912	2.519876	0.0213
ECM(-1)*	-0.68235	0.145678	-4.68346	0.0003

Adj R² = 0.483576, F-statistics = 6.337434 (0.000005), Durbin-Watson = 1.938103

Source: Author's computation

The error correction coefficient ECM (-1) is negative and statistically significant at the 1% level, confirming the existence of a stable long-run relationship among the variables. The coefficient value indicates that the model adjusts toward long-term equilibrium at a rapid velocity of 68.2% annually. This relatively high speed of adjustment implies that any short-run deviations from the long-run equilibrium between defense spending, institutional quality, income per capita, public health expenditure, the exchange rate, and the maternal mortality rate (MMR) are corrected fairly quickly within the Nigerian economy. Overall model diagnostics shows that adjusted R^2 of the overall model suggests that 48.36% of the total variation in MMR is explained by the independent variables taken (MILEXP, IQ, RGDPPC, PHE and EXR). The Durbin-Watson statistic is 1.9381 which is approximately 2 showing that there is no serial correlation; F-statistic is significant at the 1% level, verifying the overall statistical significance of the model. The short run dynamics of the model are given by Table 2. During the time interval, the current value of military expenditure (MILEXP) has a positive statistically significant effect on MMR ($\beta = 0.214567$, $p = 0.0510$). This means that in the SR, there will be an increase of only about 0.21% in

maternal deaths for an increase of one unit in military expenditure. This is statistically significant at the 10% level, and supports the "Guns versus Butter" argument that sudden increases in defence expenditure affect funding for the health sector and has an immediate impact on maternal health. Also, there is a negative and significant relationship between the interaction term 'Defence spending and governance' (MILEXP $\times$ IQ) on the outcome of short-run maternal mortality ($\beta = -0.112345$, $p=0.0580$). The average impact of a sqrt unit increase in this interaction term corresponds to a reduction of 0.11% in MMR. Significant at the 10% probability level, this finding supports the robustness of the moderating effect of institutional quality even in the short term since higher levels of governance institutions can effectively shield maternal health from immediate negative defense expenditures shocks. Moreover, there exists a negative statistically significant short run relationship between real GDP per capita (RGDPPC) and MMR ($\beta = -0.387654$, $p = 0.0170$) at 5% level. Economics theory states that if income per capita gets higher, short-term fiscal space will become larger in the economy, and there will be a more favorable environment for providing maternal services, and economic theory is confirmed here by $\sim 0.39\%$ reduction in the MM with unit increase for income per capita. Finally, the short run coefficient for EXR has a positive value, is statistically significant at 5% level ($\beta = 0.198765$, $p = 0.0290$). This implies that a Naira unit depreciation will lead to rise in maternal mortality by 0.20%. This is in line with the economic reality, since the cost of imported drugs, medical devices and health consumables can quickly turn into an immediate rise in prices due to depreciation of the currency, and therefore significantly affect maternal outcomes in the short term.

5. Discussion

The results from the empirical application using the ARDL bounds testing method provide important macro-economic perspectives related to the dynamic trade-offs between defense expenditure, and human capital development in Nigeria. This study goes beyond the old-fashioned linear models to understand how institutional quality conditions the public spending process – and, ultimately, maternal health outcomes.

In terms of long-term value, there exists a positive and statistically significant relationship between military expenditure (MILEXP) and the maternal mortality rate (MMR) with the values of $\beta = 0.428$ and $p < 0.05$, respectively. From an econometric point of view, an increase in defence spending has an average causal effect on raising maternal mortality in the long run, which supports the classic Guns versus Butter Theory [31].

This situation, within the Nigerian political economy context, indicates an acute fiscal crowding-out effect. Successive administrations have prioritised defence and internal security spending over the last two decades (2000–2024) due to ongoing security challenges such as the Boko Haram insurgency, banditry, and farmer–herder conflicts. These multi-billion-naira defence allocations have been made within an oil-dependent revenue structure, thereby constraining social sector investment.

As a result, public health expenditure has remained low (less than 1% of GDP), far below the 15% benchmark of the Abuja Declaration of 2001 [2]. This persistent underfunding deprives primary healthcare systems of essential infrastructure, clean water, and emergency obstetric services, making defence spending a structural threat to maternal survival. These findings are consistent with Fan et al. and Badmus on global and African contexts [17], [4].

This study further finds that Institutional Quality (IQ) has a highly significant negative effect on maternal mortality ($\beta = -0.312$, $p < 0.05$), providing strong empirical support for Institutional Theory [13], [1]. This indicates that increases in budget size alone do not necessarily reduce maternal deaths; instead, improvements depend on governance quality such as reduced corruption, improved bureaucratic efficiency, and stronger accountability mechanisms. Weak institutions increase transaction costs and leakage in public health allocations.

Lin et al. (2015) observe a “crowding-in” effect in advanced OECD countries, where strong institutions enable simultaneous high military and social spending, whereas developing economies face rigid fiscal trade-offs due to institutional constraints [37]. Good public procurement governance also helps to ensure that the funds that are budgeted for are channeled to intended public procurement projects such as the Building Basic Health Infrastructure, Essential Maternal Health Commodities, Mid-Wives Training in Nigeria etc. This has direct impact on life-saving which has proven that strengthening institutions is equally important as direct funding for health.

Most importantly, the interaction term ($MILEXP \times IQ$) provides the benchmark that links the two strands of the literature and offers clear empirical evidence for the emergence of stabilizing buffer effects as institutional quality improves in developing countries, consistent with patterns observed in advanced economies [37].

The main contribution of this study is the interaction term ($MILEXP \times IQ$) which had a negative and statistically significant coefficient in the long run ($\beta = -0.186$, $p < 0.05$) and the short run ($\beta = -0.112$, $p < 0.10$). This negative coefficient confirms that the institutional quality is playing an important role as a moderator. A general increase in military spending also usually increases maternal mortality rates, while good institutional arrangements act as a buffer that diminishes the negative link between increases in military spending and maternal mortality rates.

With the improvement of institutional quality, it brings into the defense procurement system more checks and balances. It reduces the scope for excessive security spending, contracts, and leads to a reduction in security leakages; defense spending is rarely undertaken in such a way that resources are being diverted and spread thin.

In addition, in the areas where institutions are strong, inter-sectoral coordination is better developed, making it possible to effectively spend defense-related resources on unstable regions. This security enables public health and supply chains for maternal health to safely access populations at risk in rural areas. This important relationship is crucial in light of empirical evidence obtained by Gnidehou et al. (2025) for the region and the nonlinear arguments proposed by Lin et al. (2015) [32], [37]. The control variables reveal the vulnerability of maternal health outcomes, when it comes to the broader macroeconomic forces in Nigeria.

The highly significant negative relation is evident between Real GDP Per Capita (RGDPPC) and maternal mortality both in long run ($\beta = -0.674$, $p < 0.01$) and short run ($\beta = -0.388$, $p < 0.05$). This finding shows that continuous economic growth boosts the fiscal room for the state and household contributions to PM services and improves the well-being of the nation which in turn reduces maternal mortality.

There is a highly significant positive relationship between Exchange rate (EXR) and maternal mortality both in long run (p value < 0.05 , β -value = 0.356) and short run (p value < 0.05 , β -value = 0.199). Nigeria is an importer of pharmaceuticals, medical devices, OB work consumables, etc., a depreciating Naira directly impacts the health sector. This inflation pushes the poor pregnant women away from accessing lifesaving quality care, and so, money instability is clearly a contributing factor to increased maternal deaths.

In the long run, the result of Public Health Expenditure (PHE) is as expected and is negative ($\beta = -0.291$; $p < 0.10$). Despite its historically small size over the last 24 years with a lower statistical significance level, the negative coefficient provides strong evidence of its key underlying latent role as a mediator that can drive down mortality rates, if scaled appropriately.

6. Conclusion

Conclusion and Policy implications.

The aim of this study was to examine the moderating role of institutional quality on fiscal crowding out effects of military spending on maternal health outcomes in Nigeria between 2000 and 2024. The above empirical specification by employing the Autoregressive Distributed Lag (ARDL) bounds testing technique and Error Correction Modeling (ECM) featured long-run equilibria and short-run dynamics. In the empirical part of the research, findings are clear, and support the Guns versus Butter Theory, showing that increases in the size of military expenditure have significant effects on maternal mortality rates (MMR) both in the long and short run. Nigeria's growing defence spending, due to chronic internal security challenges, has resulted in a structural squeeze in the funding of the public health sector with a huge underfunding of maternal healthcare delivery. But, precisely, the most important are the confirmation of the validity of Institutional Theory, contained in the essence of this study. Even though there were only some empirical findings, it can be concluded that institutional quality is an effective direct reducing factor of maternal mortality and is also a significant moderating factor. The statistically significant, negative coefficient of the interaction term ($MILEXP \times IQ$) gives confirmation that strong institutions do mitigate, and in a negative way, the harmful relationship between high military expenditure and maternal health. Good governance systems put in place more stringent defence acquisition management, minimize leakages at the budget and better coordinate inter-sectoral efforts. This helps to keep security activities in these vulnerable areas from sparking a significant diversion of resources from maternal care, while providing security for these areas.

The study illuminates the fact that maternal survival in Nigeria is still very vulnerable to the macroeconomic changes. As real GDP per capita improves to provide more funds to protect women, continuous depreciation of Naira is a serious structural shock and can quickly make drugs and medical consumables imported to save some lives to cost more.

Based on the findings of this study, it is concluded that institutional quality plays crucial moderating role on the relationship that exists between military expenditure and maternal mortality in Nigeria. The best means available to reduce the crowding out effect of defense spending on maternal health is to improve the institutions of governance.

Policy implications & recommendations

From these, the following policy interventions are suggested to balance National Security interests with the preservation of the maternal health in case of Nigeria.

- i. The defence expansion must not be adopted as a zero-sum game, as the social sectors in the Federal budget are also negatively impacted. Federal Ministry of Budget and Economic Planning – together with the National Assembly – should put in place an institutional mechanism that ensures that fixing a threshold that has to be met, by law on the social sector, in the Federal sector, also with regard to the areas of primary and maternal healthcare. This guarantees that, in security emergencies, defence needs are covered out of public health revenue windfalls or efficiency savings and not by the public health budget being raided.

- ii. Investing in public health is both a direct and public health imperative as institutional quality greatly mitigates the negative spillovers of military spending.

For the part of non-classified defense spending, the Bureau of Public Procurement (BPP) should be made to enforce stringent open contracting principles and include independent audit for all the contracts. When defense sector costs are reduced from contract inflation and leakages, it frees up fiscal space and hence funds for all 34 states to allocate 15% of the funds to the medical sector for its operations in accordance with the Abuja Declaration.

iii. Since Naira depreciation highly contributes to the high maternal mortality rate, particularly macroeconomic shields for the health sector are needed. Open a window for foreign exchange intervention specifically for registered medical equipment importers and pharmaceutical manufacturers and give priority to these manufacturing sector companies. At the same time, Government (Federal Ministry of Health) should implement special targets for waiving tariffs for essential obstetric drugs and maternal health consumables to cushion the impact of exchange rate shocks on the low-lying incomes.

iv. To leverage on the good security consequences that the literature considered, Nigeria's defence architecture should be integrated into the healthcare logistics architecture, particularly in conflict-affected areas of the country (including North-East and North-West) through the setting up of formal civil-military cooperation (CIMIC) between Nigeria's defence establishment and the National Primary Health Care Development Agency (NPHCDA). Humanitarian corridors and military transport should be used to transport maternal drugs, vaccines and midwives safely to isolated rural communities or areas considered to be at high risk.

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