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Simplice A. Asongu and Nicholas M. Odhiambo

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Military Expenditure, Policy Syndromes and Tourism in the World

SIMPLICE A. ASONGU
School of Economics, University of Johannesburg,
E-mails: asongusimplice@yahoo.com / asongus@afridev.org / asongus@afridev.org

NICHOLAS M. ODHIAMBO
Department of Economics, University of South Africa.
E-mails: odhianm@unisa.ac.za / nmbaya99@yahoo.com

Abstract

This study assesses the importance of military expenditure in moderating the role of insecurity dynamics on tourist arrivals or international tourism in 163 countries. It is framed to assess how the future of international tourism can be improved when military expenditure is used as a tool to mitigate perceived and real security risks that potentially reduce international tourists' arrivals. The empirical evidence is based on Negative binomial regressions. The following main findings are established. Military expenditure significantly moderates violent crimes and perception of criminality to induce a favorable net impact on international tourist arrivals. The corresponding net effect is insignificant and negative for insecurity dynamics of "access to weapons" and "political instability", respectively. An extended analysis is performed to assess thresholds at which political instability can be modulated for the desired net effect. This threshold is the critical mass at which the unconditional negative impact from political instability is neutralized with military expenditure. Policy implications are discussed.

Keywords: Military Expenditure; Peace; Insecurity; Tourism
JEL Classification: D74; H56; Z32; Z38

1. Introduction

Two main factors motivate the positioning of this study, notably: the growing cost of insecurity around the world and gaps in the literature. The two points are substantiated in chronological order.

First, insecurity is a growing concern around the world. As a consequence, about 13% of global annual gross domestic product (GDP) is allocated to the fight against conflicts and prevention of insecurity-related concerns (Asongu and Kodila-Tedika, 2017). This proportion of world GDP is substantial because it represents the cumulated annual GDP produced by a significant number of countries, namely: the United Kingdom, Germany, Spain, Canada, Brazil and France. According to Asongu and Kodila-Tedika (2017), insecurity at the global level is projected to increase in the coming years. This projection is in accordance with some security related reports such as the *United Nations Office on Drugs and Crime* (UNODC) report. The UNODC (2013) maintains that crimes and murders, political instability and violence represent glaring policy syndromes that should be curbed and prevented in order to avoid the allocation of resources to less relevant sectors, given that more relevant sectors should be focusing on the achievement of goals enshrined in the post-2015 sustainable development agenda. Within the context of this study, policy syndromes are insecurity dynamics, namely: access to weapons, violent crime, perception of criminality and political instability. Accordingly, insecurity is a

double edge sword because not only is it costly to prevent, it also has detrimental consequences on development outcomes, such as loss of productivity in many economic sectors. An example of such a sector is tourism for which insecurity discourages tourists' arrivals. Unfortunately, there is an apparent gap in the literature because to the best of our knowledge, no study has been positioned on the role of military expenditure in moderating the effect of insecurity on tourist arrivals.

Second, with regard to gaps in the literature, the literature on tourism has fundamentally focused on drivers of tourist arrivals (Mehmood *et al*., 2016; Alvarez and Campo, 2014; Sahaand Yap, 2013; Sönmez and Graefe, 1998a,1998b; Seddighi *et al*., 2001; Kingsbury and Brunn, 2004; Pizam and Fleischer, 2002; Sönmez *et al*., 1999; Nassani *et al*., 2017; Asongu *et al*., 2019a) and predictions of the future of tourism that have not focused on nexuses between tourism, military expenditure and risks of insecurity (Conlin, 2019; Yeoman, 2019; Wright, 2019; Hughes and Moscardo, 2019; Kowalczyk-Anioł, 2023; Tadesse, 2023; Nimer et al., 2023).

The corresponding literature on the role of military expenditure on development outcomes has also not focused on the inquiry being investigated in this study. There is some consensus that military coups have a negative impact on the tourism industry. This tendency has been established in the cases of Fiji and Kenya by Fletcher and Morakabati (2008). In another study, Mansfeld and Pizam (2006) have confirmed the relationship between tourist arrivals and civil wars. A good example is the recent case of Syria where the tourism industry has been shattered (Mehmood *et al*., 2016). When Turkey was invaded in 1974, the corresponding invasion considerably affected the tourism industry of Cyprus negatively (Sharpley, 2003; Farmaki *et al*., 2015). Moreover, the impact of wars on tourism in a nation is not only restricted to tourist arrivals but extends to the destination image of the country in the long run. A case in point is South Korea, where the ongoing conflict with North Korea has substantially influenced the tourism industry (Rittichainuwat and Rattanaphinanchai, 2015). In spite of these negative consequences of insecurity on the tourism industry, the role of the military is relevant for the study because military expenditure has been established to fight insecurity in order to enhance development outcomes, such as the limitation of capital flight (Asongu and Amankwah-Amoah, 2018).

By assessing the importance of military expenditure on the effect of insecurity on tourism, the positioning of this study is a response to the evolving policy concern (discussed in the first strand) in order to bridge an existing gap in the literature (identified in the second strand). The Wound Culture Theory (WCT) (Seltzer, 1998; Gibson, 2006) is the main theoretical underpinning underlying this study. Within this framework, military expenditure can be used to enforce the rule of law and order in order to prevent externalities of insecurity (such as perception of criminality, access to weapons, political instability and violent crime) which promote a wound culture and ultimately decrease tourist arrivals (Asongu *et al*., 2019a). In the light of the WCT, the determination to have the human body dismembered is harbored by individuals within a society. Such a desire to destroy the human body is twofold, notably: figurative (through criticism) and literal (through mutilation). The relevance of serial murder is understood from a common prism which provides the population with insights into wound appreciation. The underlying WCT is consistent with this study from two principal viewpoints. On the first front, the insecurity dynamics used in this study are strongly related to a wound culture, namely: perception of criminality, access to weapons, political instability and violent crime. This creates favorable conditions for the destruction of the human body as articulated by the WCT. On the second front, military expenditure can logically be used to mitigate dynamics of the wound culture (Asongu *et al*., 2019b) in order to enhance development outcomes

(Asongu and Amankwah-Amoah, 2018) such as tourism. In summary, military expenditure can be used address issues of tourism related to insecurity.

The remainder of the paper is organized in the following structure. The data and methodology are covered in Section 2 while empirical findings and corresponding discussion are the focus of Section 3. Section 4 concludes.

2. Data and methodology

2.1 Data

This study focuses on a panel of 163 nations in the world using data from 2010 to 2015 which come from multiple sources which are disclosed in Asongu and Acha-Anyi (2019). The dependent variable is the number of tourist arrivals; the main policy variable is military expenditure whereas the policy syndromes of insecurity include access to weapons, perception of criminality, political instability and violent crime. The selection of these indicators is in accordance with recent literature on the determinants of violence, crimes and conflicts (Freytag *et al*., 2011; Asongu and Kodila-Tedika, 2016; GPI, 2016). It is worthwhile to clarity that military expenses are part of insecurity expenses, not least, because security expenses entail other aspects such as the expenditure in police forces as well as intelligence officers.

The selected control variables which are also in accordance with the literature on drivers of tourism, include: homicide, incarcerations, violent demonstrations and armed service personnel (Pizam and Fleischer, 2002; Saha and Yap, 2013; Alvarez and Campo, 2014; Asongu et al., 2019a, 2019b). Concerning the anticipated signs, we expect homicide and violent demonstrations to reduce the number of tourist arrivals whereas incarcerations and armed service personnel should have the opposite effect. In essence, the former set translates perceived risks whereas the latter reflects efforts aimed at addressing the perceived risks. The full definitions and sources of variables are provided in Appendix 1. Owing to word count constraint the summary statistics with sampled countries and the correlation matrix are available upon request.

2.2 Negative binomial regression

Negative binomial regressions are employed for count data that is over-dispersed (i.e. when the conditional mean is exceeded by the conditional variance). Tourist arrivals used in this study as the outcome variable is count data because it is measured in terms of the number of tourist arrivals. Moreover, the conditional variance of the tourist arrivals exceeds the corresponding conditional mean (Cameron and Trivedi, 1998; Dupont, 2002). Hence, in order to assess the relationship motivating this study, a Negative binomial regression is used in accordance with recent literature on count data that reflects high dispersion and is positively skewed (Choi and Luo, 2013; Choi, 2015). It is also worthwhile to clarify that in the light of the count nature of the data, the outcome variable has to be log-normalized before other estimations techniques can be employed, *inter alia*, ordinary least squares (OLS), fixed effects regressions and generalized method of moments (GMM).

Equation (1) summarises the corresponding statistical model is used in the analysis.

$$T_{i,t} = \partial_0 + \partial_1 PS_{i,t} + \partial_2 PV_{i,t} + \partial_3 PSPV_{i,t} + \sum_{h=1}^{4} \omega_h W_{h,i,t-\tau} + \eta_i + \varepsilon_{i,t} \quad , \qquad (1)$$

where $T_{i,t}$ is the number of tourists arrivals for country i at period t; ∂_0 is a constant; PS is a policy syndrome (access to weapons, perception of criminality, political instability and violent crime) defined in Appendix 1; PV is a policy variable (or military expenditure) ; $PSPV$ the interaction between a policy variable and a policy syndrome (i.e. "Access to Weapons× Military

Expenditure", "Violent Crime× Military Expenditure", "Perceptions of Criminality× Military Expenditure" and "Political Instability× Military Expenditure") ; W is the vector of control variables (*homicide, incarcerations, violent demonstration and armed service personnel*);and $\varepsilon_{i,t}$ the error term.

4. Empirical results

The section presents the empirical results in Table 1. In the last column of the table, the overall effect on tourist arrivals from the relevance of military expenditure in modulating political instability is -0.720 ([0.188×1.966] + [-1.090]), where: -1.090 is the unconditional impact from political instability; 1.966 is the mean value of military expenditure and 0.188 is the conditional impact from the interaction between military expenditure and political instability. This procedure for computing net effects based on unconditional and conditional effects is consistent with contemporary interactive regressions literature (Agoba *et al*., 2020; Tchamyou, 2019). In essence, political instability unconditionally limits the arrival of tourists, military expenditure reduces the negative impact of political instability on tourist arrivals, but the corresponding net effect from the modulation is negative on tourist arrivals. This is not the case with the two preceding columns because the net effects are positive in regressions pertaining to violent crime and perception of criminality.

For the net effect that is negative, we find that the conditional incidence from the interactions between military expenditure and political stability is positive. This implies that military expenditure reduces the negative impact of political instability up to a certain threshold: beyond which an increase in military expenditure dampens the overall negative effect completely. The computed positive threshold should be within the range (i.e. the interval from the minimum to the maximum value) apparent in the summary statistics in order to have economic worthiness and policy relevance. Tourism reflects a positive macroeconomic signal whereas terrorism mirrors the contrary or a negative macroeconomic signal. It is important to note that, when policy indicators and policy syndromes are interacted, the underlying objective is to limit unfavorable macroeconomic signals and enhance favorable macroeconomic signals. The narrative accords with recent literature on policy thresholds with titles such as "no positive threshold, no policy" (Asongu *et al*., 2021). This threshold indicates a critical mass or inflection point at which the unappealing negative unconditional impact from the policy syndrome or political instability (on the outcome variable) is completely neutralised.

The conception and definition of threshold in this study is broadly in accordance with the threshold and critical mass literature, notably: (i) inflection points that are necessary for desired national and individual achievements (Cummins, 2000); (ii) recommended levels for desired incidences (Batuo, 2015; Roller and Waverman, 2001) and initial frameworks for various patterns in relationships between outcome and independent variables (Ashraf and Galor, 2013); (iii) critical masses at which information and communication technology (ICT) effectively modulate the relevance of finance on inequality (Tchamyou et al., 2019a, 2019b). Beyond this threshold, the negative effect from political instability becomes positive. Unfortunately, the corresponding threshold of 5.797 (1.090/0.188) is unfeasible because it is not within policy range or the range in the summary statistics (i.e. 1.000 to 5.000). It is important to note that in interactive regressions (Tchamyou, 2019; Asongu and Odhiambo, 2018),when desired net effects cannot be established, if the sign of the interactive estimate is favourable on the outcome variable, a threshold can be established at which the marginal or interactive effect eventually dampens the unfavourable net effect on the outcome variable. Hence, above the computed threshold, a desired incidence on the outcome variable can be apparent. However, in order for the computed threshold to have economic meaning and policy relevance, it should be within

the remit of the corresponding range (i.e. minimum to maximum levels) disclosed in the summary statistics.

The significant control variables reflect signs that are expected. In essence, homicides and violent demonstration decrease tourist arrivals. This is essentially because these fuel a negative perception of the tourism destination. Conversely, the incarcerations and armed service personnel which are established to positively affect tourism translate some attenuation of negative perception on the part of tourists or an environment in which concerns about insecurity are being dealt with.

Table 1: Negative binomial regressions

	Dependent variable: Tourist arrivals							
	Without control variables				**With control variables**			
Constant	**16.625*** (0.000)**	**15.849*** (0.000)**	**15.135*** (0.000)**	**16.318*** (0.000)**	**16.258*** (0.000)**	**15.670*** (0.000)**	**14.565*** (0.000)**	**17.050*** (0.000)**
Military Expenditure (ME)(-1)	0.540 (0.103)	**0.492** (0.038)**	**0.743** (0.014)**	**0.546** (0.036)**	0.141 (0.606)	0.305 (0.189)	**0.506* (0.078)**	**-0.567* (0.055)**
Access to Weapons(-1)	**-0.467** (0.012)**	---	---	---	-0.171 (0.319)	---	---	---
Violent Crime(-1)	---	-0.005 (0.973)	---	---	---	**0.517*** (0.000)**	---	---
Perceptions of Criminality(-1)	---	---	0.199 (0.313)		---	---	**0.760*** (0.000)**	---
Political Instability(-1)	---	---	---	**-0.595*** (0.001)**	---	---	---	**-1.090*** (0.000)**
Access to Weapons× ME (-1)	-0.117 (0.218)	---	---	---	-0.086 (0.244)	---	---	---
Violent Crime(-1)× ME (-1)	---	**-0.223*** (0.006)**	---	---	---	**-0.163** (0.029)**	---	---
Perceptions of Criminality× ME (-1)	---	---	**-0.248*** (0.000)**	---	---	---	**-0.217*** (0.007)**	---
Political Instability× ME (-1)	---	---	---	-0.083 (0.305)	---	---	---	**0.188** (0.039)**
Homicides(-1)	---	---	---	---	**-0.435*** (0.000)**	**-0.741*** (0.000)**	**-0.715*** (0.000)**	**-0.518*** (0.000)**
Incarceration(-1)	---	---	---	---	**0.708*** (0.000)**	**0.734*** (0.000)**	**0.751*** (0.000)**	**0.752*** (0.000)**
Violent demonstrations(-1)	---	---	---	---	**-0.194*** (0.005)**	**-0.388*** (0.000)**	**-0.374*** (0.000)**	**0.153** (0.036)**
Armed Services Personnel(-1)	---	---	---	---	0.053 (0.667)	0.079 (0.532)	0.124 (0.345)	**0.256** (0.044)**
Net effects	na	na	na	na	na	0.196	0.333	-0.720
Thresholds	nsa	nsa	nsa	na	na	nsa	nsa	5.797
Log likelihood	-9535.659	-9563.897	-9585.943	-9518.492	-9468.059	-9471.997	-9466.714	-9429.988
Likelihood Ratio (LR) Chi-Square	**122.38***	**65.90***	**21.81***	**156.71***	**257.58***	**249.70***	**260.27***	**333.72***
Likelihood Ratio (LR) for Alpha	**1.709***	**1.829***	**1.928***	**156.71***	**1.447***	**1.462***	**1.443***	**1.315***
Observations	580	580	580	580	580	580	580	580

***,**,*: significance levels at 1%, 5% and 10% respectively. Mean value of Military Expenditure: 1.966.Min and Maximum values of Military Expenditure are respectively 1.000 and 5.000. na: not applicable due to the insignificance of unconditional effects of insecurity variables and/or conditional effect from the interaction between the security policy variable and insecurity variables. nsa: not specifically applicable because the threshold has the unexpected signs.

Concerning the relationship between the findings with extant literature, two points are worth articulating, notably: the debate on the role of military expenditure in fighting insecurity and the relevance political instability as a deterrence to tourist arrivals. First, the incidence of military expenditure in reducing insecurity dynamics has been an object of debate in the literature. Positions in the literature include: a unidirectional relationship from insecurity to military expenditure (Feridun and Shahbaz, 2010); military measures designed to mitigate

terrorism being counterintuitive (Lum *et al*., 2006; Sandler, 2005) and the lack of internationally acknowledged comprehensive long-term strategies against terrorism and insecurity (Omand, 2005). In this study, we have shown that, depending on the dimension of insecurity, military expenditure can interact with dimensions of insecurity in order to promote development outcomes. It is important to note that contrary to the extant literature which is largely focused on directly assessing the effect of military expenditure on insecurity, our modelling approach is indirect owing to the interactive nature of the estimations.
Second, contingent on the negative unconditional effect of political instability, the findings broadly confirm the negative role of political instability on tourism established in the literature (Mansfeld and Pizam, 2006), notably with examples from Kenya and Fiji (Fletcher and Morakabati, 2008), Syria (Mehmood *et al*., 2016) and Cyprus (Sharpley, 2003; Farmaki *et al*., 2015).

4. Concluding implications and future research directions

From the findings, it is apparent that whereas military expenditure can be appropriately used to modulate violent crime and perception of criminality in their effects on tourist arrivals, the relevance of military expenditure in dampening political instability is contingent on complementary policy initiatives which should naturally involve other policy variables. In what follows, we discuss how the role of "access of weapons" on tourist arrivals can be mitigated and/or reduced beyond the instrumentality of military expenditure on the one hand and on the other hand, how military expenditure can be complemented to induce the desired net effect on tourists' arrivals.

First, within the framework of political stability, the role of military expenditure in ensuring the smooth election and replacement of political leaders can be conducive in autocracies but not in democracies. Hence, the strengthening of democratic institutions and the enforcement of mechanisms of "voice & accountability" (which are elements of political governance) will go a long way to improving the democratic standards in a country as well as the corresponding perception of the level of democracy in the country. Such high perception by tourists of the degree of democracy in a country can improve tourist arrivals. This is essentially because, contrary to autocratic standards, democratic principles are more aligned with other freedoms that are enjoyed and valued by majority of tourists: freedom of speech; freedom of movement; absence of arbitrary arrest and detention without a fair trial, *inter alia*.

Second, access to weapons can be limited by engaging in some or all of the following policy measures, which are not exhaustive. (i) First, violence should be regarded as a public health concern and all involved stakeholders in society should be informed and sensitized on how the public health issue can negatively influence other development outcomes, including tourism. (ii) A focus on hot spots and localisation of preventive programmes is essential. (iii) Some articulations on drugs and inequality are essential for reducing the propensity to owning weapons. (iv) The effectiveness of diplomatic and friendly approaches should be fully acknowledged and considered.

It is worthwhile for future studies to focus on country-specific cases in order to provide policy makers with more targeted or idiosyncratic measures. Accordingly, while the findings are broadly applicable and relevant for cross-country policy harmonization that is important for global policy initiatives, blanket policies in some cases may not be effective unless they are contingent on cross-country specific fundamentals that are exogenous to tourism and insecurity dynamics.

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Appendices

Appendix 1: Definitions of variables

Variables	Definitions and sources of variables
Tourism	The number of tourists arrivals
Military expenditure	Military expenditure as a percentage of GDP The Military Balance, IISS
Access to Weapons	Ease of access to small arms and light weapons Qualitative assessment by EIU analysts
Violent crime	Level of violent crime Qualitative assessment by EIU analysts
Perceptions of Criminality	Level of perceived criminality in society Qualitative assessment by EIU analysts
Political instability	Political instability Qualitative assessment by EIU analysts
Homicides	Number of homicides per 100,000 people United Nations Office on Drugs and Crime (UNODC) Surveys on Crime Trends and the Operations of Criminal Justice Systems (CTS); EIU estimates
Incarceration	Number of jailed population per 100,000 people World Prison Brief, International Centre for Prison Studies, University of Essex
Violent demonstrations	Likelihood of violent demonstrations Qualitative assessment by EIU analysts
Armed Services Personnel	Number of armed services personnel per 100,000 people The Military Balance, IISS

Uppsala Conflict Data Program (UCDP). The Institute for Economics and Peace (IEP).The Economic Intelligence Unit (EIU). United Nations Peacekeeping Funding (UNPKF). GDP: Gross Domestic Product. The International Institute for Strategic Studies (*IISS).*