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How Do Military Expenditures and Armed Forces Personnel Affect Gold-
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Internal Security, Cross-Border Crime, and Defense Policy in Africa: How Do Military Expenditures and Armed Forces Personnel Affect Gold-Related Customs Fraud?

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Abstract

In a context of persistent challenges surrounding border security in Africa, this study investigates the impact of defense policies on internal security by using gold-related customs fraud as a proxy for cross-border crime over the period 2000–2019. Defense policy is captured through two key indicators: military expenditures and the size of armed forces personnel. The empirical strategy relies on multiple econometric techniques, including Ordinary Least Squares (OLS), Two-Stage Least Squares (2SLS), and the Generalized Method of Moments (GMM).

The results reveal that both increased military spending and expansion of armed forces personnel are significantly associated with a reduction in gold-related customs fraud. Moreover, the findings indicate that expanding the size of armed forces is more effective than merely increasing defense budgets in curbing such illicit activities.

The impact is particularly pronounced in the Sahel region, where intensified military mobilization leads to a more substantial decline in cross-border smuggling compared to other parts of the continent. The study concludes with a set of strategic policy recommendations, emphasizing the importance of targeted interventions in high-risk and vulnerable regions such as the Sahel.

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I. Introduction

In 2024, the United States allocated \$886 billion to its defense and security budget, accounting for approximately 3.32% of its GDP (North Atlantic Treaty Organization, 2023). Concurrently, Russia dedicated \$82 billion to its defense budget, representing about 3.73% of its GDP (Bellais, 2024). Amidst the ongoing Russo-Ukrainian conflict, the global arms race has intensified, affecting not only major military powers but also less industrialized nations. The African continent is not exempt from this global trend.

Despite constrained resources, numerous African countries have significantly increased their military and security expenditures. For instance, in the Sahel region, Burkina Faso allocated approximately \$1 billion to its defense budget in 2023, representing 30% of the national budget¹. This trend reflects a broader continental movement characterized by the revision and adaptation of defense and security policies in response to increasingly complex and context-specific threats. In many countries, these strategies are typically outlined in a “white paper”, and are developed within the broader framework of public policy, with the aim of protecting the state’s vital, peripheral, and strategic interests². Accordingly, one of the core objectives of national defense policy is the securing of borders against external threats.

Border security and the governance of cross-border flows, particularly efforts to combat smuggling and customs fraud, represent a strategic priority for defense policies across many African countries (Foucher, 2014). Among these threats, customs fraud involving natural resources stands out due to its transnational nature, which undermines not only economic stability but also the internal security of states across the continent (Cantens, 2019). This phenomenon is a key destabilizing factor for both customs and security administrations, impairing their operational effectiveness and exacerbating border vulnerabilities in the face of illicit activities (Cantens et al., 2021).

Previous studies on the determinants of customs fraud and the performance of African customs administrations has focused primarily on factors such as corruption and institutional quality (e.g., Chalfin, 2008; Cantens, 2013; Chalandard et al., 2020).

However, while these studies have highlighted the relationship between institutional quality and customs fraud, to our knowledge, no research has empirically analyzed the efficiency of defense policies in the context of combating cross-border fraud in Africa.

¹ Droit Afrique Report – Finance Law, Burkina Faso, 2023.

² According to the Geneva Centre for Security Sector Governance (DCAF, 2022), defense and security policy is defined as the set of political, military, and strategic choices aimed at establishing security objectives and determining the necessary means to ensure the defense of national territory.

Consequently, in a context marked by persistent challenges related to the fragility of African borders and a lack of in-depth studies on border governance, this paper aims to assess the impact of defense policies through military expenditures and armed forces personnel on the effectiveness of internal security. This effectiveness is measured by cross-border crime, specifically gold-related customs fraud, across Africa and the Sahel region over the period 2000–2019.

The issue of the effectiveness of defense policies on internal security is of critical importance for several reasons. On the one hand, it raises questions about the rationality and efficiency of public investment in the military and security sectors. On the other hand, it allows for a deeper understanding of the relationship between African states' strategic priorities and their ability to respond to cross-border threats, particularly those involving the trafficking of natural resources.

Moreover, this study is essential because customs fraud represents a strategic challenge both for internal security and for the mobilization of domestic resources. Customs administrations—which generate between 30% and 70% of public revenues in many African countries—play a pivotal role at the intersection of public finance and national sovereignty (Cantens, 2019).

Assessing the efficiency of defense policy on customs performance is therefore a priority for reinforcing the sovereignty of African states. This becomes all the more urgent in an African context characterized by porous borders and often inadequate control infrastructure, which significantly hampers the effectiveness of internal security mechanisms.

This study also highlights the complex and interconnected interaction between the mobilization of resources whether for war efforts or development—and the internal security of the state

Finally, understanding the relationship between defense policies, internal security, and the fight against customs fraud will not only strengthen the internal sovereignty of states but also preserve the economic stability and sovereignty of African and Sahelian nations in the face of transnational challenges.

For the purpose of the empirical analysis, we first use gold-related customs fraud as the dependent variable to assess cross-border crime. This choice is justified by the strategic importance of gold for the public finances of African countries, many of which are among the world's leading exporters of gold ores. Furthermore, compared to other minerals, gold is the most targeted resource by smuggling networks and armed groups (Banao et al., 2022).

Second, military expenditures and the size of armed forces personnel are used as distinct explanatory variables, as they represent reliable indicators of national defense policy in African states.

As part of the African Union's Agenda 2063, the AU introduced a normative framework for border governance known as the African Union Border Programme (AUBP). One of the key pillars of this

initiative is the prevention of cross-border conflicts and the fight against transnational crime, with the overarching goal of preserving state stability and sovereignty (AU, 2017; Assembly/AU/Dec.145 (VIII)).

In this context, one of the programme's central recommendations is the allocation of adequate public resources for border protection, along with the increased deployment of law enforcement personnel, in order to enhance border surveillance and territorial coverage (Bekale, 2022). Thus, the use of military expenditures and law enforcement personnel as explanatory variables in this study is justified by their relevance within the African Union Border Programme to measure African states' efforts in terms of security and border management.

These two indicators offer a robust foundation for analyzing the effectiveness of defense policies in combating customs fraud and, more broadly, in strengthening internal security.

We adopt an empirical strategy based on instrumental variables to address endogeneity biases, thereby ensuring robust and unbiased estimates that enhance the reliability of our findings. We further confirm the robustness of our results through the use of the Blundell and Bond (1998) System Generalized Method of Moments (GMM) estimator and a jackknife resampling test.

The article presents several key findings. It shows that increases in military expenditures and armed forces personnel have a significant and negative impact on gold-related customs fraud in Africa over the period 2000–2019. Specifically, a 1% increase in military spending is associated with a 1.1% reduction in gold customs fraud, while a 1% increase in the size of the armed forces leads to an even greater reduction of 2.5%. An in-depth focus on the Sahel region reveals an even more substantial effect: a 1% increase in military expenditures and armed forces personnel reduces gold-related customs fraud by 2.1% and 11.1%, respectively. These results highlight the critical importance of context-specific and targeted strategies to secure borders and curb illicit activities.

Our study makes several important contributions. First, it enriches the empirical and theoretical literature on defense policy, conflict economics, and border governance. While most research in conflict economics has focused on the impact of military expenditures on economic growth, the likelihood of conflict, or their consequences for development (Collier et al., 2002; Phillip, 2015; Muhanji et al., 2014; Dunne et al., 2019), limited attention has been paid to their efficiency in strengthening internal security.

Our study fills this gap by highlighting the strategic role of national defense decisions and border management. In Africa and more particularly in the Sahel region this relationship is all the more crucial in light of growing security challenges linked to cross-border crime and the illicit trafficking of natural resources.

From an analytical standpoint, this research draws on a unique and original dataset covering gold-related customs fraud across 50 African countries between 2000 and 2019. This dataset offers a novel

perspective on the interactions between customs fraud, military expenditures, and the size of armed forces, allowing for a comprehensive and context-sensitive analysis.

Moreover, this study introduces a methodological innovation by incorporating spatially geolocated data into the empirical analysis. This strategy enhances the robustness and precision of the results by capturing territorial specificities and contextual dynamics in the areas under study.

Beyond producing reliable empirical findings, the methodology adopted in this paper establishes a reference framework for future research, enabling the exploration of similar issues using tools and approaches adapted to the complex realities of developing countries.

Finally, the study offers strategic policy recommendations in the field of defense and security. These recommendations aim to strengthen border management, enhance internal security in African countries, and support the design of context-specific strategies, particularly in regions with high vulnerability, such as the Sahel.

The structure of this article is organized into several sections to provide a comprehensive and coherent analysis of the research question. The second section offers a literature review enriched by case studies, highlighting the challenges associated with securing African borders and their connection to defense policies. The third section details the econometric models used in the study. The fourth section presents data used and the empirical results, while the fifth focuses on robustness checks. The sixth section provides a region-specific empirical analysis of the Sahel. Finally, the last section presents the study's conclusions and formulates public policy recommendations.

II. Literature Review

The goal of this section is to provide a synthesis of existing literature, enriched by case studies, on the securitization of African borders and their link with defense policies.

The securitization and management of African borders represent a major challenge for the security policies of most countries on the continent. Inherited from the colonial era, these borders are often characterized by porosity and limited institutional control. This vulnerability facilitates the expansion of transnational illicit trafficking and the formation of alliances between armed groups and commercial networks operating along trade routes (Cantens, 2019).

Peripheral border areas lacking effective security coverage have become strategic hubs for cross-border criminal activities. This vulnerability facilitates the proliferation of transnational illicit trafficking and fosters the emergence of alliances between armed groups and commercial networks operating along trade corridors (Cantens, 2019). For example, Cantens et al. (2021), based on field studies, demonstrated that the withdrawal of customs and security posts in Mali in 2012—particularly in the regions of Timbuktu and Gao, located at the intersection of Mali, Mauritania, and Algeria—following the incursion

of terrorist and rebel groups, not only intensified customs fraud but also strengthened strategic partnerships between these groups and local traders.

Furthermore, armed groups play a central role in destabilizing border zones, seeking to establish parallel economies that sustain the growth of cross-border criminality. A particularly notable example is that of Al-Shabaab in Somalia. This group, which actively opposes the central state, took control of the border town of Afmadow, located in the Jubaland region, near the Kenyan border and strategic Somali cities such as Badhadhe, Kismayo, and Jamame. Upon seizing Afmadow, Al-Shabaab implemented a system of taxation on goods transiting through the area, thereby consolidating its control over cross-border economic flows (Cantens, 2019).

Studies on cross-border crime highlight the impact of conflict and institutional fragility on border vulnerability. From a theoretical standpoint, drawing on field research, Cantens et al. (2017, 2021) showed that conflicts particularly terrorism foster the growth of illicit trade and undermine the effectiveness of customs administrations. Their analysis emphasizes that in vulnerable regions such as the Sahel, security tensions not only weaken states, but also exacerbate fraudulent activities by eroding customs control mechanisms.

The relationship between insecurity and customs fraud is empirically confirmed by Banao et al. (2022), who demonstrate that a 1% increase in terrorism-related deaths leads to a 0.5% increase in customs fraud in Africa over the 2000–2019 period. These results reinforce the idea that insecurity acts as a key driver of cross-border crime, particularly in countries affected by conflict regions.

In response to these challenges, most African states' defense policies emphasize strategies focused on militarizing border areas and closing high-risk trade routes.

Several case studies illustrate this approach. Indeed, for example, in 2016, in response to the presence of Boko Haram along the Chad–Nigeria border, Chadian armed forces took control of border areas around Lake Chad and shut down trade routes in the region, thereby limiting the expansion of the terrorist group Boko Haram (Cantens & Raballand, 2021).

Likewise, the closure of the Tunisia–Libya border in 2016–2017 by Tunisian authorities, in reaction to the invasion by the Islamic State, significantly reduced smuggling and illegal border crossings into Tunisian territory.

Military expenditures represent a key instrument for strengthening the internal defense capacities of states. Studies, particularly those by Phillips (2015) and Dunne et al. (2019), indicate that increasing such expenditures can contribute to reducing cross-border crime, provided that resources are strategically and effectively allocated.

Thus, increasing military investment in border security helps reinforce surveillance infrastructure, improve law enforcement training, and implement advanced detection technologies, thereby contributing to better prevention and reduction of cross-border criminal activities. However, despite these theoretical contributions, to our knowledge, no empirical study has assessed the efficiency of defense policies in reducing cross-border crime, particularly within the African context.

This article addresses that gap by analyzing the effect of military expenditures and armed forces personnel expansion on gold-related customs fraud in Africa and the Sahel region.

The following section presents the methodology and empirical strategy adopted.

III. Methodology and Empirical Strategy

The research question is framed within the broader context of an empirical analysis of the effect of defense policy—through military expenditures and the size of armed forces—on internal security, as measured by gold-related customs fraud.

We consider the following equations:

$$\text{SECURITY}_{it} = \beta \cdot \text{SPEND}_{it} + \theta Z_{it} + \eta_i + \lambda_t + \varepsilon_{it} \quad (1)$$

$$\text{SECURITY}_{it} = \beta \cdot \text{Recrut}_{it} + \theta Z_{it} + \eta_i + \lambda_t + \varepsilon_{it} \quad (2)$$

SECURITY_{it} represents internal security, measured by gold-related customs fraud for country “i” at time “t”; SPEND_{it} refers to military expenditures of country “i” at time “t”; and RECRUIT_{it} represents the number of armed forces personnel in country “i” at time “t”. We denote Z_{it} as a vector of explanatory variables in each model for country “i” at time “t”. We include time fixed effects, while η_i and λ_t represent country fixed effects and time fixed effects, respectively. Finally, the error term is denoted by ε_{it} .

Our analysis focuses on a sample of 50 African countries and covers the period from 2010 to 2019.

In the following section, we present our dependent variable (gold-related customs fraud) and our explanatory variables (military expenditures and the size of the armed forces).

3.1 Cross-Border Crime (Gold Customs Fraud) Indicator:

We use mirror data analysis strategy to build gold customs fraud. Mirror data analysis consists of comparing export and import declarations, thereby revealing discrepancies that are often exploited to manipulate the tax base (Cantens, 2015).

This analytical strategy for measuring customs fraud is widely recognized as a methodological benchmark in the economic and customs literature and has been adopted by several authors (Geourjon et al., 2023; Carleton et al., 2016).

Moreover, mirror data analysis is a key tool for assessing customs risk and the performance of customs administrations, especially in developing countries (Chalendard, 2017). This method provides a precise measure of inefficiencies and identifies vulnerable areas in customs management.

In the context of fragile states' borders, this approach has also been applied by Banao et al. (2022) to examine the impact of terrorism on customs fraud. Their findings confirm the relevance and effectiveness of this method for analyzing complex issues related to internal security and cross-border economic dynamics.

The equation used to formalize the mirror data analysis is as follows:

$$DX_t^i = \sum_{j=1, i=1}^{J_i} (M_{ji, t} - \beta X_{ij, t}) \quad (3)$$

DX_t^i represents the value of missing gold exports for a given year t in country i , while j represents the rest of the world. $M_{ji, t}$ denotes the import declarations of gold by the rest of the world originating from country i . $X_{ij, t}$ represents the export declarations of country i to the rest of the world. The use of mirror data analysis makes it possible to highlight potential discrepancies in customs data between countries, which may be indicative of fraud or irregularities in trade transactions. We use data from the UN COMTRADE database, disaggregated at the 6-digit Harmonized System (HS-6) level, to ensure high precision and granularity in the analysis of gold trade flows.

2.3 Defense Policy Indicators (Military Expenditures and Armed Forces Personnel):

We use two indicators to measure national defense policy. The first indicator is military expenditures, measured by the annual spending allocated to the national armed forces. This includes expenditures from the Ministry of Defense, security agencies, and other bodies responsible for territorial protection. The data are sourced from the databases of the Stockholm International Peace Research Institute (SIPRI) and the World Bank.

The second indicator is the size of the armed forces, measured by the number of active military personnel, including paramilitary forces. These data are obtained from the International Institute for Strategic Studies (IISS) database.

2.2 Empirical Strategy

In a goal of our empirical analysis, we employ multiple estimators to ensure the robustness and reliability of the results. The first estimator used is Ordinary Least Squares (OLS). However, despite the inclusion

of fixed effects, this estimator may be biased due to potential endogeneity. Indeed, there is a strong likelihood of a simultaneous relationship between internal security and defense policy.

On the one hand, defense policy—particularly through increased military expenditures and the expansion of armed forces personnel—has a significant influence on cross-border crime. For example, a denser deployment of military personnel along borders can limit the transnational movement of illicit goods by enhancing surveillance and control mechanisms (Cantens et al., 2017). On the other hand, a reduction in cross-border crime could, in turn, influence defense policy orientation. A decrease in illicit activities would reduce the need for frequent armed interventions, potentially leading to a reassessment of military budgets and a reallocation of resources toward other strategic priorities. This bidirectional interaction between internal security and defense policy underscores the need to address the endogeneity problem. To do so, we adopt an instrumental variable (IV) strategy by applying the Two-Stage Least Squares (2SLS) estimator. This approach allows us to robustly analyze the effect of military expenditures and armed forces personnel on gold-related customs fraud, while controlling for potential endogeneity bias.

Accordingly, within our empirical strategy, it is essential to use instruments that are exogenous to gold customs fraud, yet correlated with military expenditures or armed forces personnel. To meet these requirements, we selected two distinct instruments for the two models.

First, we use regional or neighboring countries' military expenditures as an instrument to analyze the effect of military spending on gold-related customs fraud (Equation 1). Second, we use regional or neighboring countries' armed forces personnel as an instrument to analyze the impact of armed forces size on gold-related customs fraud (Equation 2).

The use of regional variables as instruments is justified for several reasons. Theoretically, our approach is grounded in Waldo Tobler's (2004) First Law of Geography, which states: "Everything is related to everything else, but near things are more related than distant things."

This principle highlights the significant influence of regional or neighborhood dynamics on national policies, particularly in contexts of geographic proximity. In practice, the armed forces personnel and military expenditures of neighboring countries at the regional level can directly influence national defense policy decisions. This influence stems from their effect on perceptions of regional threats and the need to strengthen security cooperation (Chatterji, 1992).

Indeed, increases or decreases in military spending in one country can directly affect its neighbors through several mechanisms. On the one hand, such changes alter the regional security balance, prompting neighboring states to adjust their own defense strategies in response to potential threats. On the other hand, these variations affect interstate security cooperation, particularly in border management

and the fight against cross-border illicit activities. Lastly, this security interdependence among African countries justifies the use of regional variables as instruments in our analysis.

These variables capture shared security dynamics and interactions between neighboring defense policies, thereby offering a relevant analytical framework for evaluating the effects of defense policies on internal security.

To build our instruments (neighboring military expenditures and neighboring armed forces personnel), we first extract data on military spending and armed forces personnel for each country from the International Institute for Strategic Studies (IISS), the Stockholm International Peace Research Institute (SIPRI), and the World Bank databases. We then test for the existence of spatial correlation in these variables using Moran's I global test. The results for neighboring/regional military expenditures (see Table 1: $I = 0.35406$, $p = 0.000$) reveal a significant positive spatial autocorrelation.

This indicates that countries with similar military expenditures tend to be geographically clustered, thereby rejecting the hypothesis of random distribution.

These results highlight the importance of integrating spatial effects to better understand geographic dynamics. For the neighboring armed forces personnel variable, the results of Moran's I test (see Table 2: $I = 0.38798$, $p = 0.000$) also show significant positive spatial autocorrelation.

This confirms that countries with similar military personnel levels tend to cluster geographically, reinforcing the need to include spatial effects in the analysis.

The construction of our instruments is based on the creation of a spatial lag. The spatial lag of military expenditures and armed forces personnel is computed as a weighted average of the values of neighboring countries on an annual basis. This method captures the regional or neighborhood influence.

Our instruments are therefore defined as the interaction between the variable (military expenditures or armed forces personnel) and the spatial weighting matrix (CJ) (Anselin, 1988), which is a first-order binary contiguity matrix, where each country is connected only to its immediate geographic neighbors.

The instruments are defined as follows:

$$SPEND.SPILLOVER_{jt} = CJ \times SPEND_{it}, \quad (4)$$

$$Recrut.SPILLOVER_{jt} = CJ \times Recrut_{it}, \quad (5)$$

où SPEND.SPILLOVER_{jt} represents neighboring countries' military expenditures ; Ω is the spatial weighting matrix, SPEND_{it}, corresponds to total military expenditures in country *i* ; Recrut.SPILLOVER_{jt} represents neighboring armed forces personnel ; Recrut_{it} denotes the total armed forces personnel in country *i*.

Following the construction of our instrumental variables (neighboring military expenditures and neighboring armed forces personnel), we conduct both empirical and theoretical analyses to evaluate their validity.

First, the goal is to determine whether neighboring military expenditures and neighboring armed forces personnel can be used as valid predictors of domestic military expenditures and domestic armed forces size. Such validation would reinforce the relevance and effectiveness of these instruments in our model by demonstrating their ability to capture regional dynamics influencing national defense policies.

To this end, we analyze the effect of neighboring military expenditures on domestic military spending (Equation 6), as well as the effect of regional armed forces personnel on domestic personnel levels (Equation 7). This analysis is conducted using Ordinary Least Squares (OLS) regressions.

Les équations se présentent comme suit :

$$\text{SPEND}_{it} = \beta(\text{SPEND.SPILLOVER}_{jt}) + \varepsilon_{it} \quad (6)$$

$$\text{Recrut}_{it} = \beta(\text{Recrut.SPILLOVER}_{jt}) + \varepsilon_{it} \quad (7)$$

Avec, SPEND_{it} représente military spending of country « *i* » at time « *t* » ; SPEND.SPILLOVER_{jt} représente the military spending of neighboring countries « *j* » at time « *t* » ; Recrut.SPILLOVER_{jt} represents armed forces personnel at time *t* in country *j*, Recrut_{it} is the domestic armed forces personnel at time *t* in country *i* ; we include ε_{it} as the error term. We adopt a distance threshold of 1,000 km to define neighboring countries, as this distance represents the minimum threshold ensuring the statistical significance of spatial indicators, particularly Moran's *I* (see Table 1 and 2).

The results presented in Table 3 reveal a positive and significant relationship between neighboring countries' military expenditures and domestic military spending among African countries. Furthermore, we find a positive and significant effect of neighboring armed forces personnel on domestic military personnel levels (Table 4).

These findings confirm the explanatory validity of our instruments, validating their ability to capture the spatial and regional dynamics of defense policies. Additionally, the F-statistic yielded values of 2,837 for Equation 6 and 4,946 for Equation 7—both highly significant and well above the conventional critical threshold of 10.

These results confirm that our instruments—neighboring military expenditures and neighboring armed forces personnel—are strong predictors, suitable for modeling the impact of military spending and personnel size on gold-related customs fraud in Africa. This statistical validation strengthens the credibility of the instruments used and ensures the robustness of the conclusions drawn from our analysis.

From a theoretical standpoint, our instruments satisfy the exclusion restriction, insofar as regional military expenditures and the size of regional armed forces do not exert a direct effect on gold-related customs fraud, aside from their indirect influence via national defense policies namely, domestic military spending and national armed forces personnel. Defense policy decisions such as military recruitment or increases in security-related budgets—are sovereign choices specific to each state, generally approved by national legislative bodies. This institutional autonomy greatly reduces the likelihood that defense decisions in one country would directly affect customs fraud in another.

Moreover, aside from a few multilateral cooperation frameworks or conventions, the management of customs administrations remains largely autonomous and compartmentalized from one country to another, significantly limiting direct interference between national customs systems. As a result, any potential influence of neighboring countries' military expenditures or armed forces personnel on customs fraud must necessarily occur through domestic defense policy channels, rather than via a direct causal relationship.

Hence, our instruments are not only relevant predictors of the explanatory variables (military spending and armed forces personnel), but also meet the theoretical exclusion criterion. This dual validity ensures the robustness and methodological rigor of our analysis, offering a nuanced understanding of the relationship between defense policy and internal security in Africa, as measured by gold-related customs fraud.

To finalize our empirical strategy, we incorporate control variables to enhance the robustness and reliability of the results obtained. The aim is not to establish an exhaustive list, but rather to minimize potential omitted variable bias. The selected control variables include GDP per capita, international trade, mining rents, and institutional quality.

GDP per capita is a key variable, as its relationship with customs fraud has been widely documented in the literature. Chalendar et al. (2019) and De Wulf et al. (2005) empirically demonstrated a positive relationship between GDP per capita and the performance of customs administrations.

Regarding its role in military spending and armed forces personnel, studies such as Collier et al. (2006) and Arias et al. (2003) show a direct correlation, where a stronger economy tends to allocate more resources to defense.

Next, mining rents are included due to their significant impact on customs fraud. Kpognon (2022) showed that increased mining production incentivizes customs fraud as a way to avoid taxation. Moreover, mining rents also have a positive effect on defense policy, as increased resource revenues improve public finances, which can lead to higher military expenditures and increased recruitment of armed forces personnel (Do, 2021).

Also, we use the international trade as variable, measured by the sum of a country's exports and imports, is another key factor influencing customs fraud. International trade is recognized as a major determinant in the development of customs fraud (Cagé et al., 2018). It also has a positive effect on military expenditures, by facilitating the acquisition of modern equipment and technologies necessary for enhancing security (Yakovlev, 2007).

Finally, we include a variable capturing institutional quality, specifically political stability. Institutional quality plays a critical role in improving customs performance (Cantens et al., 2021). While some studies have shown that increased military spending may have negative effects on institutions, strong institutions can, conversely, improve the efficiency of military spending (Albalade et al., 2012).

These control variables therefore allow us to capture the economic, trade, and institutional dimensions likely to influence the relationship between defense policies and customs fraud, while ensuring a more comprehensive and robust analysis of the dynamics under study.

IV. Data analysis and Empirical Results

4.1 Data analysis

The empirical study is based on a sample of 50 African countries. Table 5 presents the descriptive statistics of the variables used in our analysis. We have 879 observations for gold-related customs fraud, 930 observations for military expenditures, and 960 for armed forces personnel. Gold-related customs fraud displays substantial variation, ranging from -24.3 billion to 11.1 billion. Military expenditures range from 0.14% to 32.66% of GDP. Finally, armed forces personnel vary from 0 to 20.27 units, reflecting significant disparities across the countries in the sample.

These figures highlight the diversity of national contexts in terms of defense and security, which is a key element in understanding the dynamics of defense policies and their impact on customs fraud.

Table 5: Statistic Descriptives

Variable	Obs.	Mean	Std. Dev.	Min	Max
Gold customs fraud	879	-1.14e+08	1.30e+09	-2.43e+10	1.11e+10
Armed forces personnel	930	1.4287	2.5078	0.0000	20.2664
Military expenditures (% GDP)	926	2.0674	2.2901	0.1423	32.6557
Resource rents (% GDP)	943	1.1942	2.7978	0.0000	24.8342
GDP per capita (USD)	964	2,449.041	3,083.653	258.629	16,989.96
International trade (% GDP)	879	70.8419	39.1034	1.2188	347.9965
Political stability index	1,080	-0.5887	0.9089	-3.3149	1.2821
Regional armed forces personnel	811	857.551	1.7167	843.921	858.610
Neighbors' military spending	1,125	115.4327	43.7793	4.0960	218.0518

Source: Author

4.2 Résultats Empiriques

The empirical results on the effect of defense policy (military expenditures and armed forces personnel) on cross-border crime are presented in Table 6, which reports regressions using Ordinary Least Squares (OLS) and Two-Stage Least Squares (2SLS) estimators for Equations 1 and 2.

The regressions show that both military recruitment and military expenditures are negatively and significantly associated with gold-related customs fraud in Africa. A 1% increase in military expenditures leads to a 1.1% reduction in gold customs fraud. Similarly, a 1% increase in armed forces personnel results in a 2.5% decrease in gold-related customs fraud.

These findings underscore the important role of national defense policies in curbing illicit activities associated with strategic resources such as gold.

With regard to the control variables, we observe a positive and significant relationship between mining rents and gold customs fraud (in both OLS and 2SLS models). This suggests that a higher dependence on mineral resources is associated with an increased risk of customs fraud, likely due to the opportunities for illicit activity within the mining sector.

Conversely, international trade shows a negative and significant effect in the 2SLS models, indicating that more developed trade—often accompanied by better customs infrastructure—contributes to reducing fraudulent practices.

As for GDP per capita, the results in Column 4 reveal a negative and significant relationship, suggesting that higher levels of economic development are associated with lower levels of customs fraud. However, this effect appears to be modest, indicating that other structural factors may influence this dynamic.

In summary, these findings highlight the beneficial effect of defense and security policies in combating customs fraud, while also emphasizing the role of economic and structural variables in shaping the dynamics of illicit cross-border activities.

Tableau 6 : Impact of Military Expenditures and Armed Forces Personnel on Gold-Related Customs Fraud.

Variables	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Armed forces personnel (Ln)	-2.5053*** (0.9335)		-2.5053*** (0.5792)	
Military expenditures (Ln)		-1.1004** (0.5492)		-1.1004** (0.4760)
GDP per capita	0.0001 (0.0002)	-0.0003 (0.0002)	0.0001 (0.0001)	-0.0003** (0.0001)
Mining rents	0.1224** (0.0481)	0.0912** (0.0403)	0.1224*** (0.0370)	0.0912** (0.0457)
International trade	-0.0166 (0.0171)	-0.0203 (0.0166)	-0.0166** (0.0071)	-0.0203*** (0.0068)
Political stability	0.0238 (0.3061)	-0.1779 (0.3084)	0.0238 (0.2034)	-0.1779 (0.2143)
Constant	8.6836*** (2.1687)	9.6902*** (2.2529)	8.6836*** (1.5687)	9.6902*** (1.6122)
Observations	739	772	739	772

Variables	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
R²	0.24	0.24	0.48	0.47
Fixed Effects (Country + Year)	Yes	Yes	Yes	Yes
Instruments	Regional armed forces	Regional military expenditures	Regional armed forces	Regional military expenditures

Note: *** indicates statistical significance at the 1% level ($p < 0.01$), ** at the 5% level ($p < 0.05$), and * at the 10% level ($p < 0.10$).

V. Robustness Tests.

5.1. Jackknife resampling test.

As part of our robustness checks, we use a Jackknife resampling test. This method evaluates the sensitivity of the results by successively excluding one observation or a group of observations from the sample.

By recalculating the estimates after each exclusion, this approach helps identify the potential influence of individual observations on the overall results, thereby strengthening the reliability and stability of the conclusions. This estimation strategy is particularly relevant for assessing the robustness of estimated coefficients, especially in empirical analyses based on large samples.

Accordingly, we use the baseline models described in Equations (1) and (2). This combined strategy provides a robust assessment of the effects of military expenditures and armed forces personnel on gold-related customs fraud.

The empirical results presented in Table 7 confirm our baseline findings by demonstrating that military expenditures and armed forces personnel have a significant and negative effect on gold-related customs fraud.

These results emphasize the effectiveness of defense policies in combating cross-border illicit activities and reinforce the relevance of targeted security interventions.

Tableau 7: Impact of Military Expenditures and Armed Forces Personnel on Gold-Related Customs Fraud (Jackknife Test).

Variables	(1) 2SLS	(2) 2SLS
Military expenditures (Ln)	-1.1004** (0.5312)	
Armed forces personnel (Ln)		-2.505*** (0.6732)
GDP per capita	-0.0003** (0.0001)	0.0001 (0.0001)
Mining rents	0.0912* (0.0511)	0.1224*** (0.0410)
International trade	-0.0203*** (0.0075)	-0.0166** (0.0079)
Political stability	-0.1779 (0.2361)	0.0238 (0.2246)
Constant	9.6902*** (1.7787)	8.6836*** (1.7450)
Observations	772	739
R²	0.58	0.47
Fixed Effects (Country + Year)	Yes	Yes
Instruments	Regional military expenditures	Regional armed forces personnel

Note: *** indicates statistical significance at the 1% level ($p < 0.01$), ** at the 5% level ($p < 0.05$), and * at the 10% level ($p < 0.10$).

5.2. Blundell and Bond (1998) System GMM Estimator Robustness Test.

In the second part of our robustness assessment, we employ the System Generalized Method of Moments (GMM) estimator developed by Blundell and Bond (1998).

This estimator offers several advantages, particularly its suitability for analyzing large panel datasets and its ability to correct for endogeneity bias through the use of both internal and external instruments.

In our baseline model, we adopted an instrumental variable (IV) strategy to address the potential endogeneity between customs fraud, military expenditures, and armed forces personnel. Using the GMM approach enhances the reliability of our estimates by exploiting the properties of conditional moments to obtain robust and unbiased coefficients.

We present our models as follows:

$$\text{Security}_{it} = \alpha + \theta_1 \text{Security}_{it-1} + \beta_1 \text{SPEND}_{it} + \theta Z_{it} + \varepsilon_{it} \quad (8)$$

$$\text{Security}_{it} = \alpha + \theta_1 \text{Security}_{it-1} + \beta_1 \text{Recrut}_{it} + \theta Z_{it} + \varepsilon_{it} \quad (9)$$

Security_{it} , Security_{it-1} , r represent internal security, measured by gold-related customs fraud in country i at time t and $t-1$, respectively; Depense_{it} denotes military expenditures of country i at time t qui représente les dépenses militaires du pays « i » au temps « t ». Recrut_{it} refers to the number of armed forces personnel in country i at time t .

In light of the results presented in Table 8, we observe that the AR(2) tests show no second-order autocorrelation of the residuals (p-values of 0.1658 and 0.9414), confirming that the model is correctly specified. Moreover, the Hansen tests (p-values of 0.6993 and 0.8136) indicate that the instruments used are valid and exogenous, further reinforcing the robustness of the GMM estimates.

The results obtained are consistent with our previous findings, confirming the negative impact of armed forces personnel and military expenditures on gold-related customs fraud in Africa.

Therefore, we confirm the robustness of our estimations and the relevance of our methodological approach.

Tableau 8: Impact of Military Expenditures and Armed Forces Personnel on Gold-Related Customs Fraud (GMM Test).

Variables	(1) GMM	(2) GMM
Gold customs fraud (Ln), lagged	0.3632*** (0.0826)	0.0231 (0.2892)
Armed forces personnel (Ln)		-13.3095* (7.2883)
Military expenditures (Ln)	-2.2448** (0.9179)	
GDP per capita	0.0008*** (0.0002)	0.0083 (0.0054)
Mining rents	0.3629*** (0.1237)	1.1061 (3.1184)
International trade	-0.0330*** (0.0101)	-0.0865 (0.0739)
Political stability	-3.7477*** (0.5412)	-5.1537 (5.5300)
Constant	9.8395*** (1.5397)	4.3317 (10.4572)
Observations	717	701
AR(2) p-value	0.1658	0.9414
Hansen test p-value	0.6993	0.8136

Note: *** indicates statistical significance at the 1% level ($p < 0.01$), ** at the 5% level ($p < 0.05$), and * at the 10% level ($p < 0.10$).

VI. Sample Test: Analysis of Defense Policy on Gold Customs fraud in the Sahel.

Representing the region of Africa most affected by terrorism in 2021 (International Crisis Group, 2022³), the Sahel is particularly vulnerable on the continent. This area is marked by severely fragile borders, exacerbated by a high level of terrorist activity and an intensification of gold smuggling. For instance, between 2017 and 2018, gold shipments from smuggling operations in the Sahel—estimated at a value of \$15.1 billion—were exported to the United Arab Emirates and integrated into the formal sector (Fortin, 2024).

In this context, analyzing the effect of military expenditures and armed forces personnel on gold-related customs fraud in this African region takes on major strategic importance.

We use Equations (1) and (2) from our baseline models and apply the same empirical strategy—based on Two-Stage Least Squares (2SLS) and our instruments (regional military expenditures and regional armed forces personnel)—to assess the impact of military spending and troop deployment on gold-related customs fraud in Sahel countries. The sample includes five countries in the region: Mali, Burkina Faso, Niger, Mauritania, and Chad.

The results, presented in Table 9, indicate that a 1% increase in military expenditures leads to a 2% decrease in customs fraud, while a 1% increase in armed forces personnel results in a 10.9% reduction.

These findings reveal a marked contrast with the overall African sample, where the estimated effect of armed forces personnel is 2.5%, compared to 10.9% in Sahel countries. The evidence confirms that increasing the size of the armed forces has a particularly strong effect in curbing gold-related customs fraud in the Sahel.

These results highlight the importance of targeted and context-sensitive defense policies in this region, where security and economic challenges are exacerbated by the prevalence of illicit trafficking networks.

³ « L'Afrique de l'Ouest face au risque de contagion Jihadist » International Crisis Group, 2022.

Tableau 9: Impact of Military Expenditures and Armed Forces Personnel on Gold-Related Customs Fraud in the Sahel.

Variables	(1) 2SLS	(2) 2SLS
Military expenditures (Ln)	-2.0289** (0.8215)	
Armed forces personnel (Ln)		-10.9739** (5.5909)
GDP per capita	0.0000 (0.0042)	-0.0064 (0.0040)
Mining rents	0.2108*** (0.0768)	0.2816*** (0.0592)
International trade	-0.0707*** (0.0212)	-0.0722*** (0.0194)
Political stability	0.6770 (0.4603)	0.6712 (0.4874)
Constant	17.3016*** (2.0037)	21.8288*** (2.6509)
Observations	93	93
R²	0.57	0.58
Fixed Effects (Country + Year)	Yes	Yes
Instruments	Regional military expenditures	Regional armed forces personnel

Note: *** indicates statistical significance at the 1% level ($p < 0.01$), ** at the 5% level ($p < 0.05$), and * at the 10% level ($p < 0.10$).

VII. Conclusion and Policy Recommendations

Internal security is a fundamental concern for African countries in achieving sovereignty and protecting their territories.

In this context, this study set out to evaluate the effect of defense policy—through military expenditures and armed forces personnel—on cross-border crime, measured by gold-related customs fraud, using a sample of 50 African countries over the period 2000–2019.

To conduct this analysis, we employed several robust empirical methods, including Ordinary Least Squares (OLS), Two-Stage Least Squares (2SLS), the System GMM estimator by Blundell and Bond (1998), and the Jackknife resampling test, to ensure the validity and reliability of our results.

Our findings show that increased military spending and armed forces personnel have a statistically significant and negative effect on gold-related customs fraud in Africa.

More specifically, we find that these effects are even more pronounced in Sahel countries, where security and economic challenges are particularly severe due to regional instability and illicit gold trafficking. These conclusions underscore the importance of defense and security policies tailored to the most affected regions, such as the Sahel.

Finally, our findings support the strategic orientations of the African Union’s Agenda 2063, particularly in terms of border security and the fight against cross-border illicit activities.

Based on this study, we propose strategic policy recommendations aimed at strengthening defense capabilities and the fight against cross-border crime in African countries, with a particular focus on the Sahel region.

First, our results indicate that increasing military expenditures significantly contributes to reducing illicit gold trafficking, emphasizing the importance of budgetary resources in enhancing internal security.

It is therefore essential to adopt a strategic allocation of defense and security resources, directing military investments toward expenditures specifically dedicated to border protection.

This includes the acquisition of modern military equipment and geo-localized technologies, which can improve border surveillance and control capacity.

In addition, given the scarcity of budgetary resources, it is critical to implement rigorous monitoring and evaluation mechanisms for military spending. Such systems would ensure the efficient and targeted use of resources, making sure they are directed exclusively toward initiatives that have a direct impact on combating illicit trafficking and strengthening internal security.

Second, our study confirms that strengthening human resources in the armed forces is a key priority in the fight against cross-border crime. This recommendation involves both a quantitative increase in military personnel and a qualitative enhancement of national armed forces.

Countries most affected by cross-border crime—particularly those in the Sahel—should orient their defense policies toward border safeguarding, focusing on mass recruitment and specialized training for military personnel. Therefore training should target strategic competencies, such as border surveillance and customs fraud detection. By equipping the armed forces with well-trained and adequately staffed personnel, states will be better positioned to secure their borders and significantly reduce customs fraud.

Furthermore, our spatial data analysis has revealed transnational linkages between countries, underscoring the need to strengthen regional cooperation to effectively dismantle illicit trafficking networks. Establishing coordination mechanisms and information-sharing systems between neighboring countries—particularly among military and customs services—is essential for disrupting cross-border criminal networks.

Regional collaboration would ensure a collective and coherent response to shared security threats, while optimizing the effectiveness of anti-trafficking interventions and enhancing state resilience to transnational risks.

Finally, it is imperative to integrate defense policy with economic policy—or vice versa—through the adoption of a comprehensive legislative framework for the security and economic management of borders. This holistic approach, combining security and development, would reinforce internal security while promoting inclusive economic policies. Such an initiative would not only curb customs fraud but also contribute to increased public revenue from customs, thereby strengthening fiscal capacity.

In this regard, a development-oriented programming law would facilitate the implementation of targeted anti-poverty programs in peripheral border areas, reducing the appeal of smuggling networks and armed groups among youth. By improving living conditions in cross-border communities, this strategy would stimulate the economic development of African countries, while reinforcing their sovereignty and resilience in the face of transnational challenges.

BIBLIOGRAPHIE

Albalade, D., Bel, G., & Elias, F. (2012). Institutional determinants of military spending. *Journal of comparative economics*, 40(2), 279-290.

Anselin, L. (1988). A test for spatial autocorrelation in seemingly unrelated regressions. *Economics Letters* 28, 335–341.

Arias, A. F., & Ardila, L. (2003). Military expenditure and economic activity: The colombian case. *Desarrollo y Sociedad*, (52), 39-65.

Banao, F., & Laporte, B. (2022). Terrorism, Customs and fraudulent Gold exports in Africa.

Bekale, L. N. (2022). L'Union Africaine et la gouvernance de la sécurité: Une contribution de la société civile à la prévention des conflits. *Paix et sécurité européenne et internationale*.

Bellais, R. (2024). L'économie russe face à l'« opération militaire spéciale » De guerre lasse?. *DSI (Défense et Sécurité Internationale)*, (172), 26-29.

Blundell R., and Bond S., 1998. Initial Conditions and Moment Restrictions in Dynamic Panel Data Models. *Journal of Econometrics* 87: 115–143.

Cantens, T., & Raballand, G. (2017). Cross-border trade, insecurity and the role of customs: Some lessons from six field studies in (post-) conflict regions. *International Center For Tax and Development (ICTD), Working Paper No. 67*.

Cantens, T. (2019). Fragile borders in Sub-Saharan Africa: The nexus between economy and security at borders. *AntiAtlas Journal*, 3.

Cantens, T., & Raballand, G. (2021). Taxation and Customs Reforms in Fragile States: Between Bargaining and Enforcement. International Center for Tax and Development (ICTD), Working Paper No. 120.

Centre pour la gouvernance du secteur de la sécurité (DCAF). (2022). Les politiques de sécurité nationale. Série Réforme du Secteur de la Sécurité (RSS).

Chatterji, M. (1992). Regional conflict and military spending in the developing countries. In *Economics of arms reduction and the peace process* (pp. 235-248). North-Holland.

Collier, P., & Hoeffler, A. (2002). Regional Military Spillovers. Mimeo. World Bank, Washington, DC.

Collier, P. (2006). War and military spending in developing countries and their consequences for development. *The Economics of Peace and Security Journal*, 1(1).

Do, T. K. (2021). Resource curse or rentier peace? The impact of natural resource rents on military expenditure. *Resources Policy*, 71, 101989.

Dunne, J. P., Nikolaidou, E., & Chiminya, A. (2019). Military spending, conflict and external debt in Sub-Saharan Africa. *Defence and Peace Economics*, 30(4), 462-473.

Fortin, M. D. (2024). Europe in the Sahel: An Analysis of the European Counter-Terrorism Structure Between Past and Present to Understand its Actions.

Foucher, M. (2014). *Frontières d'Afrique: Pour en finir avec un mythe.* (pp. 9-57). CNRS Éditions.

Hanson, V. D. (1990). Le modèle occidental de la guerre. La bataille d'infanterie dans la Grèce classique. Paris, Les Belles Lettres. (1re éd. : 1989).

Muhanji, S., & Ojah, K. (2014). External debt and military spending: The case of Africa's conflict countries.

North Atlantic Treaty Organisation – Organisation du Traité de l'Atlantique Nord Press & Media. (2023). Defence Expenditure of NATO Countries (2014-2023). Presse & Médias.

Phillips, B. J. (2015). Civil war, spillover and neighbors' military spending. *Conflict Management and Peace Science*, 32(4), 425-442.

Union Africaine. (2017). Stratégie de l'Union Africaine pour la gouvernance des frontières. Addis-Abeba, CUA.

Yakovlev, P. (2007). Arms trade, military spending, and economic growth. *Defence and peace economics*, 18(4), 317-338.

ANNEX

Tableau 1 : Military Spending Moran's I test.

Variable	Moran's I	E(I)	SE(I)	Z(I)	p-value
Military Expenditures	0.35406	-0.00122	0.00682	52.06132	0.00000

Tableau 2 : Armed Forces (Personnel) Moran's I test pour la variable des effectifs des forces armées

Variable	Moran's I	E(I)	SE(I)	Z(I)	p-value
Armed Forces (Personnel)	0.38798	-0.00123	0.00664	58.58708	0.00000

Tableau 3 : Impact of Neighboring military spending on domestic Military Spending.

Variables	(I)
Neighboring Military Spending	-0.2217*** (0.0246)
Constant	16.6152*** (1.6685)
Observations	823
Fisher Test	2837.6
Fixed Effect (country+year)	Yes

Note: *** indicates statistical significance at the 1% level ($p < 0.01$), ** at the 5% level ($p < 0.05$), and * at the 10% level ($p < 0.10$).

Tableau 4 :Impact of neighboring armed forces (personnel) on domestic armed forces (personnal).

Variables	(I)
Neighboring armed forces (personnel)	-328.72*** (8.4755)
Constante	2221.3*** (57.251)
Observations	739
Fixed Effect (country+year)	Yes
Fisher Test	4946.2

Note: *** indicates statistical significance at the 1% level ($p < 0.01$), ** at the 5% level ($p < 0.05$), and * at the 10% level ($p < 0.10$).

Table 10: Impact of Regional Armed Forces Personnel on Domestic Armed Forces Personnel (First-Stage 2SLS Results from Table 6).

Variables	(1) OLS	(2) OLS
Regional armed forces personnel	-0.3748*** (0.0113)	
Regional military expenditures		-0.2147*** (0.0273)
GDP per capita	0.0000*** (0.0000)	0.0000 (0.0000)
Mining rents	-0.0004 (0.0008)	0.0025** (0.0013)
International trade	0.0000 (0.0002)	-0.0006* (0.0003)
Political stability	-0.0080 (0.0054)	-0.0193 (0.0146)
Constant	322.1032*** (9.6674)	16.1484*** (1.8681)
Observations	739	772
R²	0.90	0.85
Fixed Effects (Country + Year)	Yes	Yes

Note: *** indicates statistical significance at the 1% level ($p < 0.01$), ** at the 5% level ($p < 0.05$), and * at the 10% level ($p < 0.10$).

Tableau 11 : Description of Variables and Data Sources

Variable	Definition	Source
Military Expenditures	Annual expenditures allocated to national armed forces.	SIPRI (Stockholm International Peace Research Institute) and World Bank (World Governance Indicators - WGI)
Armed Forces Personnel	Number of active military personnel, including paramilitary forces.	SIPRI and World Bank
Gold Customs Fraud	Comparison between a country X's import/export declarations and the corresponding declarations reported by its trading partners.	COMTRADE Database
Mining Rents	Total mining rent as a percentage of GDP.	World Bank (WGI)
Political Stability	Measure of the likelihood of political instability and/or politically-motivated violence, including terrorism.	World Bank (WGI)
GDP per Capita	GDP per capita (constant 2015 US dollars).	World Bank (WGI)
International Trade	Sum of exports and imports as a percentage of GDP.	World Bank (WGI)

Tableau 12. List of Countries in the Sample.

Algeria, Angola, Botswana, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Egypt, Gabon, Gambia, Guinea, Ghana, Kenya, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Senegal, Seychelles, Rwanda, Sierra Leone, Somalia, South Africa, South Sudan, Eswatini, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.