

Original Research Article

Can Corruption and Organized Crime Affect Economic Growth in the ECOWAS Region?

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This study examined organized crime, and corruption, and determined if they can affect growth in the regional integration known as the Economic Community of West African States (ECOWAS). Organized crime and corruption can have a grossly negative impact on the economic growth process of every system, but the extent of damage they have needs to be measured to determine the policy implications for the region. Paired with a sizeable and well-connected diaspora community, traffickers have established themselves in most parts of the world and provide networks farther afield. Organized criminal groups infiltrate governments, businesses, and political and economic systems. They undermine the effectiveness of these systems, sometimes through corruption and violence. Enough effort must be given to understanding the impact of organized crime on governance in West Africa. The research is a panel study of 11 countries in the ECOWAS region. A number of corruption, organized crimes and, growth theories were reviewed in the process. The study employs the random-effects model with the pooled OLS to control (FGLS) known also as the random-effects model with the pooled OLS as a control on the defined objectives. Results show among others that organized crime and corruption have a significant impact on economic growth, whereas, corruption significantly reduces economic growth. The study concludes that organized crime has significantly impacted economic development. Part of the policy implications and recommendations is that Domestic investment significantly contributes to economic growth and should be greatly encouraged as it increases production, and job creation and reduces dependency ratio and poverty.

Keywords: Corruption, Organized Crime, ECOWAS, Economic Growth

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1 Introduction

Corruption and organized crime sometimes go together. Organized crime dominates illegal businesses, but it may also infiltrate legal businesses to gain monopoly profits and launder illicit profits. Research finds that organized

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crime can have significant economic effects: limiting foreign investment, reducing economic activity, squeezing profits, and increasing the cost and availability of credit. Target-scale illegal businesses or mafia infiltration of legal activities, are both likely to have a corrupting influence. The European Police Office (Europol 2013: 6) has identified approximately 3600 Organized Crime Groups operating in the European Union, many connected via the drug trade and human smuggling to other regions. Due to globalization and the internet, many groups are international in membership, crimes, products, markets, and routes (Europol 2013). Historical, societal, and cultural factors influenced the emergence and persistence of organized crime (McIllwain 1999; Varese 2015). Its prevalence is often traceable to a time when some groups were underrepresented or disenfranchised, such as during foreign occupation, civil war, or mass immigration. In these circumstances, political groups employed criminals to advance their agenda, and OCGs used the political system to advance theirs, or infiltrate or replace weak state institutions (Beare 1997; Gambetta 1993; Schneider and Schneider 2005).

There has been a repeated threat to the lives and properties of the people in the region as a result of gruesome crimes. Africa experiences an annual loss of US\$88.6 billion in illicit financial flows linked to criminal activities. This is equivalent to 3.7% of the continent's GDP, (UNCTAD, 2020). 'The organized crime Index reported widespread organized crime with no region spared the damage inflicted by illicit economies. In 2021, data suggests it is worse, with more criminality and less resilience.' Shaw, (2021).

The Democratic Republic of the Congo has the highest criminality, followed by Nigeria, with Kenya, South Africa, Libya, and Mozambique also in the top 10. Organized criminals took advantage of the pandemic to fill gaps left by state institutions and adapt illicit activities to beat COVID-19 restrictions. Institutional responses to stop the virus caused extensive losses for legitimate businesses and, despite lockdowns and restrictions on movement, organized criminals were able to adapt more effectively than legal entities (UNODC, 2021).

Corruption creates the conditions for criminality to thrive, including illicit mining, arms trading, and narcotics. According to the Global Initiative against Transnational Organised Crime, criminal networks in Mali, use a combination of the threat of violence and networks of corruption to protect the illicit flow of arms, cigarettes, and narcotics (Reitano & Shaw 2015). As stated in a recent report, "the pervasive levels of corruption within the Sahelian states and their security apparatus have permitted criminal markets to emerge in the first place and then enabled their expansion" (Micallef 2019: 90). Proceeds from

criminal activities are channeled to armed or extreme groups and militias, providing them with the financial resources to expand and destabilize the government. Also, some of the funds are used to maintain corruption networks to ensure the smooth operation of criminal businesses. As a result, there is a cycle of corruption, crime, and conflict, threatening peace and stability in the country and the Sahel region (Reitano & Shaw, (2015)).

The African Union's agenda to silence guns by 2020 risks being hamstrung by high levels of corruption on the continent. In South Sudan, one of the most fragile countries on the continent, a recent UN report singled out corruption as a hallmark of conflict in the country, as millions of dollars have been looted from public coffers (UN Commission on Human Rights 2020). In 2019, thousands of people took to the streets protesting against the deepening economic crisis and endemic corruption (Maclean and Boley 2019). Such grievances can easily spill into violence. This suggests a need for effective anti-corruption programming to prevent violent uprisings and reprisals. Leymah Gbowee, a Liberian Nobel Peace Prize winner in 2011, reiterated that silencing the guns in Africa will require tackling corruption as it is a major factor leading to violent conflicts in the region (UN African Renewal 2019: 12).

Human trafficking remained the most pervasive criminal market in Africa, while the cocaine trade saw the biggest increase. Central Africa registered the largest rise in criminality, and East Africa remains the region in which organized crime is most prevalent. Illicit economies, from drug markets to illegal mining and weapons smuggling are drivers of conflict and instability; and conflict zones and fragile states create conditions where organized crime can flourish.

'Criminal economies often intertwine themselves with formal economies and market institutions of countries experiencing violence, terrorism, insurgency, and war. Instability caused by conflict is a significant impediment to an effective government response to organized crime,' (Okunade, et al. , 2021).

The assessment shows that countries scoring highest for organized crime often experience conflict or some form of violence, insurrection, terrorist activity, or civil unrest. Conflict also diverts important resources, thereby undermining institutions responsible for taking steps to contain organized crime. (Okunade, et al, 2021).

Drawing from experiences in Africa, globalization has facilitated the preponderance and prevalence of terrorist groups such as Boko Haram and Jama'atu Ansarul Musilimina Fi Biladis Sudan (JAMBS) or Ansaru in

Nigeria; the Islamist Ansar Dine, MUJAO, and Jama'a al Tawhid wa al-Jihad fi Gharb Afriqiyah (The Movement for Unity and Jihad in West Africa, MUJWA) in Mali; AQIM in Algeria; and Somalia's Islamic militia, al-Shabaab, amongst others. This is evident in the collaboration and ties among these terrorist groups in terms of exchange of ideas and operational tactics, training, funding the supply of logistics and weapons system, exchange of information irrespective of geographical bases and locations of operation William, (2004). For instance, Boko Haram members have received and continue to receive training from al-Qaeda in Afghanistan, Mauritania and Sudan, while its operations and activities are coordinated from Mali with funding from several sources, including a United Kingdom-based Al-Muntada Trust Fund. Its membership has spread to other West African countries such as Niger, Mauritania, northern Cameroon, and Chad, which also provide sanctuary for the group members (Salihu, (2020)). This is made possible because the process of globalization facilitates easy movement of persons through a supposed 'borderless society', and easy communication and exchange of information and ideas through the use of information and communication technology, such as the Internet and Global System for Mobile Communications (GSM), social networks, and so on. This may well explain why the Nigerian government cut off all GSM communication network services and access to the Internet in Adamawa, Borno, and the Yobe States earlier and Katsina, Zamfara, Kaduna and some parts of Sokoto states in the ongoing efforts to contend with terrorist insurgencies in the northern part of the country. AQIM, an Algerian-based Islamist militant organization, has its membership is drawn mostly from the Algerian Kabyle and local Saharan communities, as well as Moroccans from the city suburbs of the north-African country, (Salihu, (2020)). In the last two years, AQIM appears to have begun to move beyond its narrowly Algerian historical roots, developing a more truly regional recruiting pool and training system distributed across the Sahel and is beginning to develop new operational fronts around the Sahelian periphery. Thus, there have been suggestions that AQIM may be looking to serve as a training base for operations for Nigerian terrorists. (Salihu, (2020)) This collaboration and expansion of terrorist groups within the West African sub-region and beyond is facilitated by the drivers and instruments of globalization. The Economic Community of West African States, ECOWAS was established on 28 May 1975, by fifteen member countries comprising Nigeria, Ghana, Sierra Leone, The Gambia, Liberia, Benin, Burkina Faso, Cote d' Ivoire, Guinea, Guinea-Bissau, Mali, Togo, Niger and, Senegal, with Cape Verde joining as the fifteenth member country

in 1977. The core objectives are to “eliminate trade barriers among member countries through the harmonization of custom duties and the abolition of quantitative and administrative restrictions on trade among member states; elimination of obstacles to free movement of people, goods, services, and capital; harmonization of the agricultural policies and the promotion of common projects in the Member States, notably in the fields of marketing, research and agro-industrial enterprises; and the implementation of schemes for the joint development of transport, communication, energy, and other infrastructural facilities as well as the evolution of common policy in these fields” (Article 2 of the 1975 ECOWAS Treaty).

Organized crime increased across Africa during the COVID-19 pandemic and showed no signs of slowing, according to the Organized Crime Index (2021). It is one of the world’s biggest security challenges, and Africa is no exception, as more than two-thirds of Africans living in countries with high criminality, and nearly 80% in states with acute vulnerability and low resilience. Organized crime got worse in 42 countries on the continent and improved in just 12 between 2019 and 2021. Africa has the second-highest levels of criminality globally, after Asia. Organized crime causes vast social, economic, political, and environmental damage; from human trafficking for sexual exploitation to corruption, fraud and money laundering, and poaching of endangered wildlife (OCI, 2021).

1-1 Statement of Problem

The Organized Crime Index is published by the European Union-funded ENACT program (Enhancing Africa’s Response to Transnational Organized Crime) – run by the Institute for Security Studies (ISS), INTERPOL and the Global Initiative Against Transnational Organized Crime (GI-TOC). ‘The wheels of the criminal ecosystem kept turning during COVID-19,’ Shaw and Moodie (2021). The ECOWAS is meant to foster interstate economic and political cooperation. History is on its side in this regard. Dating back to pre-colonial times, West Africans have been among the world’s most mobile populations although much of the migration had been intra-regional. About 7.5 million West African migrants (3 percent of the regional population) are living in ECOWAS countries other than their own. The 1.2 million other migrants are dispersed mainly in North America and Europe. Estimated at 149 million in 2013, women constitute over 50 percent of the region’s population. The cross-border migration of women as traders and business persons places them as potential champions for promoting integration. This reality needs to be fully exploited (Ecowas, 2008).

However, the West African countries share some of the lowest levels of living in the world, varying in their racial mixtures, cultural backgrounds, and natural resource endowments. In the 2019 Human Development Index, 14 out of the 15 members of the Economic Group of West African States (ECOWAS) were among the bottom 30 nations as Compiled by the UN Programme for Development. (UNDP, 2019). This study seeks to find answers to these research questions;

- 1) How much have economic growth in the ECOWAS region jointly damaged the relationship between organized crime and corruption?
- 2) What is the relationship in the ECOWAS region between organized crime, corruption, and economic growth?

1-2 Objectives of the Study

This study is designed to achieve these objectives;

- 1) To determine the extent Corruption has jointly influenced economic development in the ECOWAS region and the degree to which organized crime coexists with corruption.
- 2) Estimating the trajectory of organized crime, corruption, and economic relationships

2 Review of Related Literature

Two theories describe how corruption is expected to influence economic growth. The “grease the wheels” hypothesis holds that corruption increases economic growth because corruption circumvents inefficient regulations. When regulations on starting businesses are tight, bribing politicians and bureaucrats is likely to give rise to vibrant economic activity. The “sand the wheels” hypothesis maintains, by contrast, that corruption decreases economic growth because corruption prevents efficient production and innovation. The empirical evidence tends to suggest that corruption decreases economic growth, especially in countries with low investment rates and low-quality governance (e.g., Mauro 1995, Mo 2001, Aidt et al. 2008, Méon and Sekkat 2005, Hodge et al. 2011, Swaleheen 2011, d’Agostino et al. 2016a and 2016b, Huang 2016, Tsanana et al. 2016, Chang and Hao 2017, Cieřlik and Goczek 2018a and 2018b – see Campos et al. 2010 and Ugur 2014 for surveys).

The relationship between organized crime and corruption is a simple one – criminal networks make extensive use of corruption, in its various forms, to carry out criminal activity, avoid investigation and escape prosecution. Conversely, corruption within society propagates and becomes much more

entrenched when routinely instrumentalized by organized crime. A type of continuum exists, ranging from co-optation of junior level officials, that is, effectively placing them on the crime group's payroll, through the infiltration of managerial, and senior spheres, to influencing heads of law enforcement agencies and finally ending in the capture of state policies and structures, (CSD, 2007).

Until independence, the opportunities for self-enrichment were limited; the principal beneficiaries of colonial rule were the European elite, officials, and businessmen, enjoying a lifestyle that the African elite aspired to emulate but was largely prevented from reaching. Independence unlocked the floodgate [of corruption]. Politicians used their public offices to extract 'commissions' at every available opportunity. The common cut on government contracts in West Africa was 10 percent. In numerous cases, prominent politicians simply looted the state treasury, transferring money to their private accounts. Meredith, (2004) Writing about West Africa in 1961, Franz Fanon stated: "Scandals are numerous, ministers grow rich, their wives doll themselves up, the members of parliament feather their nests and there is not a soul down to the simple policemen or the customs officer who does not join in the great procession of corruption." Meredith, (2004). Thus the culture of corruption was consolidated in West Africa immediately after independence.

The practice of bribery and embezzlement spread from top to bottom, from politicians to tax collectors, customs officers, policemen, postal clerks, and dispensary assistants. It affected everything from job applications to licenses, scholarships, foreign exchange, and allocations. Meredith, (2004). A common form of public sector corruption in West Africa is the appearance of 'ghost names' on the civil service payroll. For instance, in Ghana, the deputy Auditor-General disclosed in March 2002 that more than US million had been paid to about 2,000 ghost names in the previous two years. (GCR, 2003). About 92.3% of respondents found bribery to be the most corrupt practice, according to a survey study on national perceptions and attitudes towards corruption carried out in 2000 by the National Reform Strategy of Sierra Leone. 94 percent of respondents in the survey found corruption in government agencies to be the most prevalent. (T, I, 2004). A corruption survey in Burkina Faso described the police as the most corrupt agency. A survey conducted by 'Forum Civil' in Senegal described the traffic police, customs officials, and police as the most corrupt organizations. A similar survey conducted in Ghana by the Centre for Democratic Development-Ghana with the World Bank in 2000 revealed that most Ghanaians found the Motor Traffic and Transport Unit (MTTU) of the Police Services, the Customs

Excise and Preventive Service (CEPS), the Regular Police and the Immigration Service as the most corrupt public institutions. The majority of the respondents said they have had to pay bribes to officials in these institutions on some occasions. (C.D.D, 2000) Most Ghanaian businesses said they felt reluctant to use the law courts to address conflict because of the prevalence of corruption in the judiciary. The outcome of the survey blamed low wages, gift-giving tradition, absence or inadequate reporting system for corruption, and poor internal management practices for high levels of corruption in Ghana (2000, CD.D). Likewise, political corruption is rampant.

Since the 2000s, many empirical studies examining the determinants and the economic and political consequences of corruption in the public sector used Transparency International's Corruption Perception Index (CPI). Examples include Paldam (2002 and 2019), Aidt (2009), Goel and Nelson (2010), Lessmann and Markwardt (2010), Méon and Weill (2010), Bjørnskov (2012), Potrafke (2012a and 2019), Cooray and Schneider (2018), Debski et al. (2018), and Vadlamannati and Cooray (2016). The studies on corruption and economic growth by Méon and Sekkat (2005), Swaleheen (2011), d'Agostino et al. (2016a and 2016b), Huang (2016), Tsanana et al. (2016), and Cieřlik and Goczek (2018a) also employed the CPI. Studies using the CPI in panel data models ignored that the CPI was not comparable across countries and over time before 2012. In particular, including fixed period effects in panel data models does not solve the incomparability problem because the CPI in individual years before the year 2012 included data for different components and time periods perceived corruption across continents. We believe that measuring corruption in the public sector by the CPI is suitable. However, one cannot conclude from previous studies that corruption decreases growth because the earlier version of the CPI is not comparable across time. Another important issue that many previous studies ignored is that economic growth may also influence corruption because increasing living standards and incomes are often accompanied by an increasing quality of political institutions (Lipset hypothesis). We use jack-knifed regional averages of corruption for each country-year observation as instrumental variables for national corruption. Empirical evidence shows that corruption in an individual country or region is positively correlated with corruption in neighboring countries or regions (e. g., Becker, et al. 2009, Faber and Gerritse 2012, Jetter and Parmeter 2018, Borsky and Kalkschmied 2019). Spatial dependence is a vigorous instrumental variable for corruption.

3 Theoretical Framework

Two recent points of view, social censorship and social development realists consider corruption to be radically different from functionalists. The proponents of the theory of social censure argue that understanding corruption should take into account the power of the state to create a particular form of social relations and shift the theoretical attention to the interplay of law, ideology, and political economy. On the other hand, Social Construction realists view corruption as problematic and the actors involved can be studied by relating them to contextual information on their social positions, interests, and stakes in the system as well as on the political, economic, and social conditions within which they function (UNODC, 2017).

Another fairly new concept that has been introduced to enhance the understanding of the nature of corruption in different societies is the “Corruption Syndromes”. A corruption syndrome is defined by the political and economic dynamics that a country has experienced and, within these dynamics, how people participate in them and how institutions have been established to define their rules and boundaries. For instance, the nature and level of corruption in advanced democracies with solid political and economic institutions are likely to be different from those countries in the transitional stage of democratization and economic reforms. (USDEA, 2017). Equally fragile states or countries emerging from conflict with weak political and economic institutions will experience different dynamics of corruption. Corruption syndromes perhaps better explain the high level of corruption in most West African countries, which are principally made up of countries undergoing democratic transition, economic reform, or emerging from conflict.

Finally, we look at the evolutionary approach to growth, which draws attention to three aspects that are neglected in both neoclassical and endogenous growth models. First, technological advancement ought to be conceptualized as a disequilibrium process involving high ex-ante uncertainty, path depending on-long lasting adjustment processes. Secondly, growth theory should be based on a more realistic theory of the firm that stresses (strategic) firm capabilities in a broad sense, rather than just investment in human capital and R&D. Thirdly, it must take into account the institutional framework that presumably contributes strongly to an explanation of cross-country differences in economic growth. Nelson, (1998).

3-1 ECOWAS Export Composition and Trends

ECOWAS' total exports show very little product diversity, with a heavy reliance on extractive products (petroleum, natural gas, gold) and a few agricultural commodities (cocoa, rubber, cotton), as can be seen in Table 1. There is in particular a strong reliance on petroleum, which is by far the top ECOWAS export (61%). Cocoa is by far the top exported agricultural product, accounting for 44% of total agricultural exports and 59% of total food exports. ECOWAS food exports represent only 10% of total exports, and almost 60% of this 10% is represented by cocoa. The weight of extractive products in exports affects political calculations within and between countries in the region, while reliance on extractive revenues is often associated with complicated governance relations between governments and citizens. The European Union is an important trading partner of ECOWAS, as Table 1 also shows. EU Member States absorb 32% of ECOWAS total exports. As such, it is the most important export destination for the region. The European Union covers 43% of ECOWAS' agricultural export and 48% of its food exports.

Table 1
ECOWAS total, Agricultural and Food Exports (in value, average 2010-2018)

Total exports	143.360 million USD	Total agricultural exports	19.594 million USD (14% of total exports)	Total food exports	14.777 million USD (10% of total exports)
Percentage exported to EU28	32%	Percentage exported to EU28	43%	Percentage exported to EU28	48%
Top 10 exports	Percentage of total exports	Top 10 agricultural exports	Percentage of total agricultural exports	Top 10 food exports	Percentage of total food exports
Petroleum crude	61%	Cocoa	44%	Cocoa	59%
Natural gas	7%	Natural rubber and gums	11%	Fruits and nuts	12%
Cocoa	6%	Cotton	11%	Oilseeds and oleaginous fruits	4%
Petroleum 70% oil	6%	Fruits and nuts	9%	Live animals	4%
Gold	3%	Oilseeds and oleaginous fruits	3%	Fixed vegetable fats and oils	3%
Natural rubber and gums	2%	Live animals	3%	Fish	3%
Cotton	1%	Fixed vegetable fats and oils	2%	Tobacco	2%
Fruits and nuts	1%	Fish	2%	Coffee	2%
Propane and butane (liquefied)	1%	Tobacco	2%	Crustaceans	2%
Ships and floating structures	1%	Coffee	1%	Edible products and preparations	2%

Source: <http://unctadstat.unctad.org/>

Note; Official UNCTAD names of merchandise shortened for clarity purposes. The figures include extra-regional and intra-regional exports

As these figures suggest, there has been only very limited economic transformation away from historically important export products. The overview also gives further evidence that ECOWAS countries' exports rely

on raw materials that are processed elsewhere, and often come back to the region as processed and high-value-added products. The Netherlands, for instance, is among the top 5 Nigerian commercial partners, as it imports crude petroleum mainly from Nigeria, and 24% of the refined petroleum imported by Nigeria comes from the Netherlands. Indeed, ECOWAS' main trading partners are highly industrialized countries such as China, India, the USA, EU countries, and Brazil, which buy from the region raw materials and sell back industrialized products (cars, ships, trucks, motorcycles, medicaments, etc.)

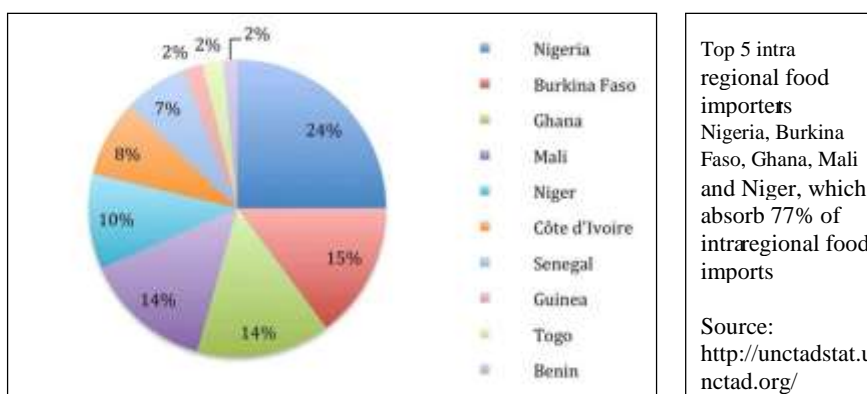


Figure 1. Top ECOWAS intra-regional food importers (% of total intra-regional food imports in value, average 2010-2018).

Source: <http://unctadstat.unctad.org/>

As can be seen in the above diagram, informal intra-regional trade in the region suggests that coastal countries (Côte d'Ivoire, Senegal, Ghana, and Benin) mainly export cereals, tubers, fruits, and vegetables to land-locked countries (Burkina Faso, Mali, and Niger), who in turn export mainly livestock to coastal countries. Even if these north-south trade flows are the most important ones, other east-west and more complex intra-regional trade flows also exist in the region. As these trade flows are mainly informal, they are not completely captured by official data.

3-2 The Nexus between Corruption and State Instability in West Africa

Does corruption contribute to state instability? Or, is there a relationship between corruption and state fragility, in the case of West Africa? The general

notion has been that fragile states provide the breeding ground for corruption. Valings & Morenzo (2005). The missing link then is the part played by corruption as one of the “drivers” of state fragility, and the subsequent outbreak of violent conflict. The onset of corruption in any state is not a sudden onslaught but begins as a gradual challenge to institutional norms and the rule of law. If it remains unchecked, it becomes endemic in which case private interest (individual and group) compete with the national interest. Where private interest dominates the state is then weakened and is unable to perform its core functions – the state will then be exhibiting signs of fragility, with violent conflict as one of the possible symptoms. A state is unstable if it is unable to address the grievances of the citizens or sections of it. The sources of grievance could be domestic or international, political, economic, and social, or a combination of all these factors. Pherson (2000) argues that discontent alone does not generate instability but the availability of individuals and mechanisms to articulate the grievances and mobilize the aggrieved to demand redress from the government. The state’s capacity to alleviate the problems associated with grievances and/or stifle the discontent is determined by four key factors: • The legitimacy of the regime and the quality of its leadership; • Resource availability; • The strength of civil institutions; and • The government’s monopoly over coercive force. The main task in this section of the study is to argue that in West Africa corruption threatens the stability and security of societies, undermining the institutions and values of democracy, ethical values, and justice and jeopardizing sustainable development. The second point to be made is that once a state is ushered into a ‘fragile’ state, as a result of corruption, the stage is then set for its eventual collapse which is normally manifested in the outbreak of conflict. In trying to establish a link between corruption, state fragility, and state instability the focus is on pervasive corruption – corruption that affects the smooth running of state institutions and hinders the state’s capacity to provide public goods – health, education, security, etc.

4 Research Methodology, Model and Estimation Results

The research is a panel study of 11 countries in the ECOWAS region. The study employs the Fixed Effects Model (FEM) and Granger Causality Analysis to ascertain the objective and investigates the causal relation between corruption, organized crime, and economic growth.

Due to the ambiguous description in the Blackburn et al, (2017) model that requires, first, specifying an economic growth performance in the absence of both organized crime and corruption, and then simultaneously introducing

each of these factors in turn until both are represented in the equation. By doing this, one could examine the economic growth effect of organized crime both in isolation and in conjunction with corruption. But this may be ambiguous in an ideal scenario, thus, the present study employed a mathematical specification of a growth equation that controls for organized crime and corruption amongst other growth factors in one model and then an interactive variable between organized crime and corruption in another equation to address the objectives. This separation was in order to avoid the problem of multicollinearity which will arise because the interactive variable shares information with the independent corruption and organized crime variables. The econometric specification for the equation addressing objectives 1 & 2 is given as:

$$Y_{it} = \delta + \lambda_1 ORC_{it} + \lambda_2 COR_{it} + \sum_{i=1}^p \rho_i X_{it} + \mu_{it} \quad (1)$$

And the econometric specification for objective three is given as:

$$Y_{it} = \delta + \lambda_3 ORCCOR_{it} + \sum_{i=1}^p \rho_i X_{it} + \mu_{it} \quad (2)$$

Where Y represents real GDP per capita, indexed by time, t; and cross-sectional units i; ORC represents organized crime; COR represents corruption perception index; ORCCOR it represents the interaction term between organized crime and corruption perception index, and summation of X represents a set of standard growth control variables.

X represents a set of standard control variables, comprising a set of implicated variables included in growth regression (e.g. Sachs & Warner, 1997). These are; domestic investment proxied by gross fixed capital formation (INV), inflation rate (INF) – measured by the Implicit Price Deflator, gross Secondary School enrollment (SE); population growth rate (PGR), the ratio of Trade to GDP (TRD), the share of government expenditure (GXP), foreign direct investment (FDI); α represents the intercept; μ represent a time-varying idiosyncratic error term that varies with the model as explained in equation 3.2, 3.3 and 3.4; and ρ represents the parameters associated to the standard control variables of the model, λ_1 to λ_3 are the parameters that associate with the core variables of the model (ORC, COR and their interactions); All variables are indexed by time t and cross-sectional units i.

The major element of the above growth regression equations is an interaction term between ORC and COR, which represents the conditional effects of organized crime and corruption on the economic growth process. A positive (negative) coefficient of λ_3 would support the argument that

organized crime has a less (more) severe effect on the growth process when it is accompanied by corruption (Blackburn et al, 2017).

The Granger causality estimation panel is carried out to investigate the trajectory of causal relationships in the ECOWAS region between organized crime, the perception of corruption index, and economic development. According to Engle and Granger (1987), the causality approach helps to determine if the historical values of one variable can forecast or predict the relationships among other variables. For example, if there are two variables X and Y, and the variable X granger causes variable Y, then the past value of X should contain information that is useful in predicting Y over and above the information contained in the past value of Y alone. Its mathematical formulation is based on linear regression modeling of the stochastic process. In the case of a causality test for three variables in a panel model with a k-variate of order p, the panel fixed effect as specified by Holtz-Eakin, et al. (1988) and Abrigo and Love (2016) is presented thus:

$$\begin{aligned}
 Y_{it} &= \alpha_0 + \alpha_1 Y_{it-1} + \alpha_2 Y_{it-2} + \dots + \alpha_{p-1} Y_{it-p+1} + \alpha_p Y_{it-p} + \beta X_{it} + \\
 &\mu_i + \varepsilon_{it} \tag{3} \\
 i &\in \{1, 2, \dots, N\}, \quad t \in \{1, 2, \dots, T_i\}
 \end{aligned}$$

where Y_{it} is a (1×k) vector of dependent variables, X_{it} is a (1×l) vector of exogenous covariates, and μ_i and ε_{it} are (1 × k) vectors of dependent variable-specific panel fixed effects and idiosyncratic errors, respectively. The (k×k) matrices $\alpha_1, \alpha_2, \dots, \alpha_{p-1}, \alpha_p$ and the (l×k) matrix β are parameters to be estimated. In this study k is 3, comprising corruption, organized crime, and economic growth. We assume that the innovations have the following characteristics: $E(\varepsilon_{it}) = 0$, $E(\varepsilon'_{it} \varepsilon_{it}) = \Sigma$, and $E(\varepsilon'_{it} \varepsilon_{is}) = 0$ for all $t > s$

It is assumed that the cross-sectional units share the same underlying data generating process, with the reduced-form parameters $\alpha_1, \alpha_2, \dots, \alpha_{p-1}, \alpha_p$ and β to be common among them. Systematic cross-sectional heterogeneity is modeled as panel-specific fixed effects. This setup contrasts with time-series VAR, whereby construction, the parameters are specific to the unit being studied, or with random-coefficient panel VAR, where the parameters are estimated as a distribution.

There exists unidirectional causality if the direction of causality is not reciprocal and there exists bi-directional if the causality is reciprocal. For example, if a variable, say X granger causes Y but Y does not granger Causes X, or the reverse exists, then there exists unidirectional causality. But if Y

granger causes X and X granger causes Y, then there exists bi-directional causality.

4-1 Effect of the interaction between organized crime and corruption on economic growth in the ECOWAS region

This section addresses the third objective which estimates the effect of the interaction between corruption and organized crime as it affects economic growth in the ECOWAS region. The probability chi-square of the Hausman specification here is 0.0000 implying that we reject the null hypothesis and employ the fixed effect estimation technique for this model. As explained above, the study employs a pooled regression estimation as a control estimation technique. This is done for the full model as specified in equation 3.6 and for a reduced model of key variables only.

The variance inflation factor results show that none of the variables have a VIF above 2 and the mean VIF is 1.50 hence there exists no multicollinearity amongst the variables. Also, robust standard errors were employed to automatically addresses inherent problems of heteroscedasticity in the pooled regression. It is also worth noting that the F probability of the random effect specifications and pooled estimations are all less than 0.01 hence significant at 1% and shows that the overall models are significant. The models also have relatively low R square and this is expected as explained above. The results are therefore presented in Table 2 below:

Table 2
Fixed Effect and Pooled Estimates of the interactive Effect of Organized Crime and Corruption on Economic Growth in the ECOWAS

	Fixed_Full	Fixed_notfull	Pooled_full	Pooled_notfull
Corruption cum Organized crime index	-0.000916*** (0.001)	-0.00154*** (0.000)	- 0.00316*** (0.000)	-0.00260*** (0.000)
Domestic investment	0.0471*** (0.001)		0.0441*** (0.001)	
Foreign direct investment	0.0311*** (0.000)		0.0981*** (0.000)	
Gross secondary school enrol't	0.102*** (0.000)		-0.110*** (0.000)	
Population growth rate (%)	-0.0579** (0.017)		-0.0565 (0.148)	
Ratio of trade to gdp (%)	-0.000855 (0.126)		0.0103*** (0.000)	
Inflation rate (%)	-0.00312* (0.080)		-0.0261*** (0.000)	
% of government expenditure	0.00286** (0.020)		- 0.00207*** (0.001)	
_cons	4.238*** (0.000)	7.185*** (0.000)	4.698*** (0.000)	6.543*** (0.000)
Within R ²	0.6029	0.0665		
Between R ²	0.1943	0.1082		
Overall R ²	0.1106	0.0675		
F Prob	0.0000	0.0002	0.0000	0.0003
adj. R ²	0.567	0.017	0.648	0.063
Root MSE	0.0958	0.144	0.339	0.553
N	220	220	220	220
Hausman Prob		0.3324		
Mean VIF		1.50		

Stars (* 0.10, ** 0.05, *** 0.01)

Source: Research Findings

The interaction variable between corruption and organized crime significantly and negatively affects economic growth in the ECOWAS region. A unit increase in the interactive variable reduces per capita GDP by 0.000916 and it is significant at 1% significant level because the probability of 0.001 is less than 0.01. This result is confirmed by the control pooled estimation as the coefficient is equally negative and significant. This is an expected a priori, given that both corruption and organized crime have evident damaging effects on the economy.

Only the ratio of trade to GDP is not a significant determinant of per capita GDP in the fixed-effect model. Domestic investment, foreign direct

investment, gross secondary school, enrolment, and share of government expenditure all show a positive and significant relationship with per capita GDP, while Population growth rate and Inflation rate have a negative and significant relationship with per capita GDP in ECOWAS. The results are very similar to that explained in section 4.3 wherein corruption and organized crime are placed in the model as separate variables, and justifies the fact that the model is robust as variables are changed but the coefficients of the remaining variables show the same signs and significance.

A unit increase in domestic investment increases per capita GDP significantly by \$US0.0471. This follows a priori expectation and is evident in the literature. Also, a unit increase in foreign direct investment, causes per capita GDP to increase significantly by \$US0.0331 and this is equally expected a priori as discussed above. Furthermore, a unit increase in gross secondary school enrolment increases per capita GDP by \$US 0.102 and is significant at 1% significant level given that the probability value is 0.000 which is less than 0.01. And, a unit increase in the percentage of government expenditure to GDP increases per capita GDP by \$US 0.00286, and this is significant at 5% significant level, given that the probability chi-square of 0.020 is less than 0.05.

Meanwhile, a unit increase in population growth rate reduces per capita GDP by 0.0579 and this is significant at 5% significant level given its probability value of 0.017 which is less than 0.05. As previously explained, it is not expected to be negative, but could be justified by the fact that, for growth to be affected by population growth, the increasing population needs to be equally equipped with human capital development. Moreover, there also exists a negative and significant relationship between inflation and per capita GDP such that, a unit increase in inflation reduces per capita GDP by 0.00312 and this is significant at 10% level because the probability value of 0.080 is less than 0.1.

4-2 Causality Relationships among Organized Crime, Corruption, and Economic Growth in the ECOWAS Region

To ascertain the direction of causality among organized crime, corruption, and economic growth in the ECOWAS region, the study employed a panel Granger causality estimation technique. To estimate the panel granger causality, we first estimated a panel var model and then estimated the panel granger causality model. The results of the panel Granger causality are presented in Table 3 below:

Table 3
Panel Granger Causality Tests of corruption, organized crime, and GDP per capita

Equation	Excluded	chi2	df	Prob chi2	>
Corruption Perception index	Organized crime index	0.281	1	0.596	
	GDP per capita	3.838	1	0.056*	
	ALL	4.024	2	0.134	
Organized crime index	Corruption Perception index	4.200	1	0.040**	
	GDP per capita	0.157	1	0.692	
	ALL	4.261	2	0.119	
GDP per capita	Corruption Perception index	1.295	1	0.255	
	Organized crime index	0.795	1	0.373	
	ALL	1.327	2	0.515	

Stars (* 0.10, ** 0.05, *** 0.01)

Source: Research Findings

The first row shows that lagged values of the organized crime index do not cause corruption perception index because the probability value is 0.596 which is greater than 0.05 hence not significant at 5% significant level. The same trend is seen on the 7th row as the organized crime index does not also cause GDP per capita, given the probability value is 0.255 which is greater than 0.05 and hence not significant at 5% significant level. This means that the organized crime index does not granger cause corruption perception index or per capita GDP.

On the other hand, the lagged values of corruption perception index granger cause than the organized crime index given its probability value of 0.05 hence significant at 5% significant level. Meanwhile, the corruption perception index does not granger cause GDP per capita because its probability value is 0.255 which is greater than 0.05 and hence not significant at 5% significant value.

Lastly, the lagged values of GDP per capita do not cause the organized crime index given a probability value of 0.692 that is greater than 0.05 hence not significant at 5% significant level. However, lagged values of GDP per capita granger cause the organized crime index at 10% because its probability value of 0.056 is less than 0.1 but greater than 0.05. This is a little strange but the significance is only registered at 10%.

However, the results have revealed that the region’s instability in both politics and its economy is largely due to the high poverty rate caused by

wanton corruption. Banditry has displaced several families thereby rendering them economically inactive. With the continuous mass deaths as a result of the activities of the kidnappers and bandits, the economy of the region is at risk of total collapse. This is in line with Alemika's (2009) assertion that "the economic context of the region reflects the cause and effect of underdevelopment and bad governance. Some countries are very well endowed with natural resources, such as oil and diamond, though the majority of the population are engaged in the progressively unproductive traditional agricultural production system. The industrial and manufacturing sector is small and shrinking in many countries due to conflicts, the importation of foreign goods in the absence of appropriate local industrialization policy, resulting to the dependency on foreign capital and consumer goods. There is a large informal sector in production and commercial transactions. Investment in the real sector and infrastructure is low. Corruption in the form of mismanagement and theft of public funds and nepotism is widespread in the public sector while fraud is prevalent in the private sector".

5 Conclusion

This study is motivated by the litany of literature that points to the fact that economic growth in Africa in general and the ECOWAS region, in particular, has been largely set back by corruption and organized crime. There are several ways by which corruption and organized crime, directly and indirectly, limit growth. It is however not clear to what extent corruption and organized crime affect growth in the ECOWAS region. It is on this premise that this study seeks to investigate the impact of organized crime, corruption, and their interactions on the economic growth of the ECOWAS region. The study employs random and fixed effect models as well as the panel granger causality model to show that corruption significantly reduces economic growth in the ECOWAS region while the organized crime index also reduces economic growth but not significantly.

Further results show that the interaction variable between corruption and organized crime significantly reduces economic growth in the ECOWAS region. And finally, the panel causality results show that GDP per capita granger causes the corruption perception index and the corruption perception index granger cause the organized crime index, while the remaining relationships are not significant. The study recommends that ECOWAS member countries adopt comprehensive and, institutionally based approaches to address the problem of public sector corruption and organized crime to reduce its detrimental effects on growth.

6 Recommendations

The research has identified the following, as some of the causes of corruption and organized crime in the west African sub-region and recommends that the various governments of each of the states solve them in order to curtail the spread of crime;

Socio-economic factors- In many cases, poverty and unemployment do not just provide a greater supply of potential illegal labor for organized criminal activities, but they also create a favorable environment for criminals to exploit the social fabric of countries as a foundation for organized crime. In some cases, (in the south of Italy, for example), organized crime forces legal businesses to generate employment for a fee paid to criminal syndicates in the area. Thus organized crime is playing a positive social role, as a dispenser of services. Moreover, organized crime also grows as a result of the failure of the State to provide dispute resolution mechanisms on labor matters or when the State fails to assure access to legal services or financial markets.

Based on a statistical analysis of the sample of countries covered in the present study, organized crime can take advantage of poor economic and social conditions within a country. The degree of openness of an economy, is expressed by the scale and scope of regulations applied to foreign trade, and openness to imports and foreign direct investment were all considered. All those features are inversely related to the organized crime index. This suggests that openness to foreign trade or investment is important in permitting new economic forces to challenge incumbents within domestic markets and to undermine the old economic capture of territory by organized crime.

A lack of clear definition and enforcement of property rights is associated with higher levels of organized crime. This confirms the findings of Milhaupt and West, (2000) applied to Italy, Japan, and the Russian Federation.

In the present much larger sample of countries, when there is no clear definition of property rights, organized crime then plays its key "authority" role, setting its own rules in areas such as credit allocation, labor disputes, or in "protecting" property for a fee.

The tax system is an important economic dimension that has a major impact on organized criminal activities. An environment where tax evasion is prevalent is often accompanied by higher levels of organized crime associated with the nature and scale of money laundering. The financial and monetary structure of a country also affects a country's risk rating: analysis.

Political Sphere-Organized crime and democracy work according to guiding principles that are in direct conflict with one another. A democratic State upholds the sovereignty of the nation and ensures the protection of the

rights of all individuals, regardless of wealth, social status, age, or gender. Organized crime as traditionally defined, on the other hand, is built around patronage, carrying on a tradition of feudalism, and does not hesitate to commit human rights abuses.

However, even in a democratic political framework where institutionalized mechanisms for governing and distributing public goods, including justice, do exist, there is still a danger of penetration of those state institutions by organized crime, a phenomenon that is described as “state capture”. How organized crime usually “captures” the State is by co-opting public institutions. In contrast to the standard forms of corruption, high-level corruption represents a more sophisticated, more pernicious form, which frequently leads to the enactment of “suitable” state decisions creating a bias in the design and implementation of public policies.

Criminal justice system- The criminal justice system of a country is a key factor in any analysis of how effective the State is in responding to serious crimes, particularly organized crime. What surfaced from initial analyses here was that the number of personnel employed in police and prosecution services was positively correlated with levels of organized crime. The immediate explanation is that, in countries with high crime rates, the first response of the State is to increase the number of police personnel, therefore the higher the crime rate, the more personnel the country will need to come to terms with the problem. More generally, that trend is also confirmed, if the financial resources invested in a criminal justice system are considered.

On the other hand, when a criminal justice system works properly, in terms, for example, of more arrests and convictions for drug trafficking, that institutional effectiveness helps to control organized crime better. In many countries with less than effective law enforcement institutions, victims lack confidence in state institutions and so citizens rarely report crimes or request police intervention. In such environments, citizens often find support in illegal organizations, such as mafia-type groups, to deal with minor crimes. Ironically, then, low levels of recorded crimes and drug arrests in a country may point to the low effectiveness of the police and a relatively high prevalence of organized crime.

The largest return for expenditure invested in criminal justice systems may lie in the training of specialized personnel. When countries introduce training and organizational control of decision-making processes through special anti-organized crime units (i.e. higher levels of training allocated to their anti-organized crime officers and prosecutors), significant reductions in organized crime can be observed (Samuel, et al, (2002)) .

Private sector governance- The lack of private sector governance provides a breeding ground for the growth of organized crime. The study reported here approaches private sector governance from two perspectives. The first perspective refers to the question of how transparent and effective the banking system is and how feasible it is for a business to access financial services within a formal regulatory framework to conduct its normal activities. If small or large businesses find it difficult to obtain loans, they will rely on illegal sources for the provision of financial services at higher interest rates (usury).

The second perspective concerns the governance of the financial sector and corporations, focusing in particular on the anti-money-laundering legislation coupled with a regulatory framework and banking supervision practices.

Following the Euroshore study, (2000), it is possible to rank countries in terms of the enactment and implementation of their anti-money laundering legislation coupled with their regulatory practices and banking supervision. The present study indicates that in countries with low regulatory standards applied to banks, the organized crime index doubles compared with countries with higher standards of enforcement of anti-money laundering legislation. This analysis is supplemented by the indicators of perception of transparency of financial institutions, coupled with the level of financial disclosure required.

Independence and integrity of the judiciary- Analysis shows that judicial independence is strongly related to levels of organized crime. Results also show a strong correlation between the perceived independence of the judiciary and the perceived extent of judicial corruption. In that context, for example, corrupt judges were found to abuse their substantive and procedural discretion through rulings that slowed down or obstructed law enforcement in organized crime cases. Among the factors making it possible for organized crime to capture the court system, the most significant are procedural complexity and abuses of substantive judicial discretion.

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