

THE ECONOMIC IMPACT OF CRIME RATE ON ECONOMIC PERFORMANCE IN GHANA

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ABSTRACT

The study examined the impact of crime rate on the economic performance in Ghana using vector autoregressive approach. It was found that both the variables nominal GDP per capita and crime rate are integrated at first order. The results of Johansen's cointegration test indicated that short run relationship exist between both variables. It was found out that the correlation coefficient between economic performance and crime rate was negative 0.7826 and significant. The previous record of crime rate had significantly negative impact on the current economic performance and it was elastic. Granger Causality Test also, showed that crime rate Granger caused economic performance to decline. This showed that reducing crime rate in Ghana will improve economic performance. As a result, it was recommended that crime should be discourage through all means and control to the barest minimum for improvement in economic performance.

Keywords: Economic Performance, Cointegration, Crime Rate

INTRODUCTION

Ghana is one of the peaceful countries within sub-Saharan Africa. The serene atmosphere of the country and friendly disposition of Ghanaians offer visitors the necessary motivation to visit Ghana. However, against the backdrop of a steadily improving global recognition, is the emergence of a new trend of crimes which are slowly but surely gaining root in the country: such as serial killings, armed robbery, drug trafficking, fraud and other forms of crime. In addition to these menaces are other minor incidents such as rape, child abuse and prostitution. These social vices have created a negative impact on the good name of Ghana. With increasing rate of serial killings, armed robbery, cybercrime, human and drug trafficking, arms trafficking and manufacturing and others may deter potential investors and other economic activities in Ghana.

Crime may be defined as a deviant behaviour that violates prevailing norms—cultural standards that prescribed how humans ought to behave normally in society. To consider something as a crime, the activity must, however, be found in the statute books as prohibited act, thus, crime is an illegal activity or activities. Nowadays, crime is no longer viewed as only a problem to given society but rather it is an integral part of understanding a nation's socio-cultural, political and economic situation. Until the mid-twentieth century, Ghana's crime rate was lower than those in other developing countries as well as most Western nations. Having been an agrarian society, a majority of the Ghanaian population were farmers and primary relationships tended to be strong. Ghana's crime rate back then was lower than in a society characterized by secondary relationships. In addition, Ghana has long been under the influence of Confucian Moral Codes that emphasize conforming to authority and the natural order and avoiding friction with others (Chang and Janeksela, 1996). The “shadow economy” consists of criminal activity, such as drug sales, smuggling, prostitution,

bookmaking, gambling and other unlawful enterprises, as well as other illegal transactions that are mainly conducted in cash and unreported to fiscal or other competent authorities.

Crime is the breaking of rules or laws for which some governing authority (via mechanisms such as legal systems) can ultimately prescribe a conviction. Individual human societies may each define crime differently, in different localities (local, state, international), at different time stages of the so-called "crime", from planning, disclosure, supposedly intended, supposedly prepared, incomplete, complete or future proclaimed after the "crime". Sometimes various social problems stem from 'uncoordinated and unsystematic' social changes, particularly among those who are unable to adapt to ever-changing new environments. Rapid social change always tends to produce social disorganization, which includes crime. Although every society experiences various degrees of social change and consequent increases in crime and crime rates, differ from one society to another. If this is indeed the case, then it is possible to understand a society by examining changes in crime and crime rates where they are used as an index for measuring societal changes and their characteristics.

Research has examined the implications of a globally diverge view on crimes and how the laws as it relates to the apprehension and prosecution of cyber criminals are been used specially in Africa. Nations have different perspectives on the issue and existing statutes enacted over the past decades in various countries show varying and diverging jurisdiction clauses. The law of jurisdiction must address whether a particular event in cyberspace is controlled by the laws of the state or country where the website is located, by the laws of the state or country where the internet Service Provider is located, by the laws of the state or country where the user is located, or perhaps by all of these laws (Brenner et al, 2007). However, in some countries, a number of cyber crimes are yet to be captured by national laws.

The existence of profitable criminal activities in some countries means that the expected loot from crime is larger in those countries than in others. The most important example of profitable criminal activities is the illicit drug trade; other examples are contraband, gambling, and prostitution. Countries where the raw materials for illicit drugs are easily obtained or countries that are located close to high drug consumption centres have frequent and highly profitable opportunities for criminal activities. These activities not only consist of drug production and trade themselves, but also involve elements of violence and corruption. The strength of the police and the judicial system increases the probability of apprehension and the punishment for criminal actions, thus reducing the incentives for an individual to commit a crime.

Although the identification and the estimation of crime costs have received wide attention in economic literature, the detrimental effect of crime to the (legal) economic activity is still neglected. Crime acts like a tax on the entire economy: it discourages domestic and foreign direct investments, reduces the competitiveness of firms, and reallocates resources, creating uncertainty and inefficiency. In this paper the economic performance will be regress on crime rate to estimate the effect of the crime on economic performance and this will contribute knowledge on effect of crime on economic performance.

THE OBJECTIVE

The main objective of this paper is to estimate the effects of crime rate on economic performances in Ghana.

HYPOTHESIS

To guide the study the hypothesis below will be tested;

H₀: Crime rate has positive impact on economic performance

H₁: Crime rate has negative impact on economic performance.

SIGNIFICANCE OF THE STUDY

This study will help the policy makers to know how the crime impact on the economic performance and formulate good policy in relation to crime prevention and management in Ghana.

LIMITATION OF THE STUDY

Crimes recorded by the police are in many ways a problematic measure for criminality, and in particular for region to region, rural to rural and city to city comparisons, because all crimes are not reported to the police, especially violent crimes are very sensitive by nature, and for instance rapes are often not reported to authorities in fear of secondary victimisation. Moreover, the costs of the pain and suffering borne by the victims of violent crimes is several times greater than the more direct costs of those crimes. As a result, successful efforts to reduce violent crime can produce substantial economic benefits for individuals, communities and taxpayers. In addition to economic variables, changes in a large number of other factors, including the availability and degree of protection of potential crime targets, presence of youth gangs, drugs and weapons availability, drug and alcohol consumption, willingness to report crime, as well as methods and capacities for recording crime, may all significantly affect police-recorded crime trends. Therefore, the data used in this paper may not capture every incidence of crime committed in Ghana.

METHODOLOGY

This study will use vector autoregressive model on secondary data from the Ghana Statistical Service to explore the dynamics between crime rate and economic performance.

Organization of the Study

This study is organised as follows: the introduction, literature review, methodology, results and conclusion.

LITERATURE REVIEW

Crime Opportunity theory is a theory that suggests that offenders make rational choices and thus choose targets that offer a high reward with little effort and risk. The occurrence of a crime depends on two things: the presence of at least one motivated offender who is ready or willing to engage in a crime, and the conditions of the environment in which that offender is situated, to wit, opportunities for crime. All crimes require opportunity but not every opportunity is followed by crime. Similarly a motivated offender is necessary for the commission of a crime but not sufficient. A large part of this theory focuses on how variations in life-style or routine activities affect the opportunities for crime (Cohen and Felson, 1979; Cohen et al, 1980). Opportunity thus becomes the limiting factor that determines the outcome in environments prone to crime because the offender generally has little or no control over the conditions of the environment, and the conditions that permit particular crimes are often rare, unlikely or preventable.

Rational choice theory is developed by (Clarke and Cornish, 1985). The theory basically argues that crime is a result of rational choices based on analyses of anticipated costs and benefits. Individuals choose to commit crime to somehow maximize their benefits and minimize their costs. Both benefits and costs have subjective and objective dimensions. There are two stages of criminal decision making and criminologists explain these two stages with two different models: initial involvement model and criminal event model. They also developed a third continuing involvement model to explain continuance in crime. (Clarke and Cornish, 1985) initial involvement model looks at the individual's willingness or readiness to become involved in crime to satisfy his/her individual needs. Individuals can have different options to satisfy their needs; while some of these may be legal, others may not. Preference of criminal options depends on several variables; individual factors, especially background, including individual temperament, upbringing, and social and demographic characteristics such as gender, social class, and neighbourhood. All these variables contribute to initial criminal involvement decision (Clarke and Cornish, 1985).

According to (Clarke and Cornish, 1985), once the individual feels ready to commit a type of crime; the second stage is to decide committing a particular crime. (Clarke and Cornish, 1985), event model of the theory explains this stage of criminal decision making. Immediate situation of the offender, characteristics of the selected target, and characteristics of other available targets influence whether or not committing a particular type of crime. A third model of rational choice theory explains continuance decision of crime (Clarke and Cornish, 1985). Increased professionalism, changes in lifestyle and values, and changes in peer groups influence the decision whether to continue crime or not. Individual offender becomes proud of skills and knowledge about crime; becomes financially more dependent on crime, enjoys "life in the fast lane" (Gibbs and Shelly, 1982), devaluates legal work; his/her close friends change, his/her self conception changes (he/she sees himself/herself as criminal), and loses contacts with his/her friends (Clarke and Cornish, 1985).

Routine activities theory is developed by (Cohen and Felson, 1979). According to this theory, predatory crime is a product of a likely offender's, a suitable target's convergence in time and space with the absence of a capable guardianship. That is, crime can occur only if a likely offender (a thief) meets a suitable target (something valuable) when a capable guardian is absent. In the theory, capable guardianship is somebody or something close to the target, and this guardianship capacity of the person or animal deters the offender. Capable guardianship is not provided by only police officer or a security guard, it is rather provided by somebody or something close to the target (Felson and Clarke, 1998). Criminologists first applied the routine activities theory to predatory crime. Predatory (or exploitative) crime is defined as illegal acts in which "someone definitely and intentionally takes or damages of the person or property of another" (Cohen and Felson, 1979). Routine activities theory improved over time and included a fourth element: intimate handler. Intimate handler is somebody who can impose social control (such as family members, close friends) to offenders who have some social bond (Felson, 1987).

Crime occurrence depends on absence of a capable guardianship and an intimate handler. There are four main attributes that influence a target's risk of attack: value, inertia, visibility, and access. These attributes are considered from the offender's viewpoint. Offenders are interested in the targets that they value. Inertia is the size or weight of the item; the smaller or lighter the item, the more it has the risk of theft. Visibility is the exposure of the target to the offender; it becomes a target once seen by the offender. Access is street patterns, doors, or placement of the target which makes target accessible (Felson and Clarke, 1998). How do likely offenders and suitable targets meet in absence of capable guardianship? How do they

appear in same place at same time? According to the theory, lifestyle routine activity patterns influence them converge in time and space. Firstly, all routine activities have rhythm and tempo. Rhythm is the period of a type of activity and tempo is its frequency. Timing (rhythm and tempo) of people's activities is more or less interdependent to other people's activities (Hawley, 1950) as cited in (Felson and Cohen, 1979). This interdependence explains convergence in time. Secondly, according to (Zipf, 1950) 'Principle of Least Effort', people tend to find the shortest route, spend the least time, and seek the easiest means to accomplish something. Offenders and non offenders both behave in accordance with this principle, and convergence in space is explained with it.

Crime degrades quality of life and can force skilled workers overseas; the costs of victimisation, as well as fear of crime, interfere with the development of those who remain. Crime impedes access to possible employment and educational opportunities, and it discourages the accumulation of assets. Investors see crime as sign of social instability, and crime drives up the cost of doing business. Corruption is even more damaging, perhaps the single greatest obstacle to development. Tourism, a key industry in Central America, is especially sensitive to crime. Crime and corruption destroy the trust relationship between the people and the state, undermining democracy. Aside from direct losses of national funds due to corruption, crime can erode the tax base as the rich bribe tax officials and the poor recede into the shadow economy. Corruption diverts resources into graft-rich public works projects, at a cost to education and health services. This series of impacts are key in explaining the troubles experienced in the region in terms of economic growth and confidence in democracy.

Violent crime can have a disproportionately large impact in developing countries. Death and disability can rob households of their only breadwinners, and government supports are necessarily limited. In 2004, the World Health Organisation released a report on the economic effects of interpersonal violence which sought to document and quantify the economic impact that exposure to violence has on individuals as well as the impact of violence on the rest of the economy. Based on an extensive review of the literature dealing with the costs of violence, the report argued that there were a number of ways in which the experience of violent crime resulted in a victim's incurring direct and indirect financial losses. These costs include the loss of productivity associated with death or injury, the costs of medical care and legal services, as well as the non-monetary losses such as the lost investment in human capital, and the impact of the psychological harm inflicted on the victim. Placing a dollar value on the cost of violent crime is extremely problematic, not the least because any attempt to do will have to factor in lost earnings, and this will have the unfortunate consequence of placing a lower value on life in the developing world. On the contrary, loss or disablement of a breadwinner can have far greater impact in developing countries than in the developed world. For one thing, more people are affected: given the shape of the age curve and the level of unemployment, dependency ratios are substantially higher. The impact of physical injury is obviously greater for those who rely on physical labour to make a living. In all these incidences crime had negative effect on economic activities a particular Geographical area.

METHODOLOGY

The relationship between economic performance and crime rate is specified as economic, Y, performance as a function of crime rate, X,. The vector autoregressive (VAR) model is

$$\text{specified as } \Delta Y_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta Y_{t-1} + \sum_{j=1}^p \beta_2 \Delta X_{t-1} + \varepsilon_t$$

where, Y_t is economic performance measure as nominal GDP per capita in a given time, t ; X_t is the crime rate is measured as crime level divided by population size in a given time, t ;

$$\varepsilon_t = \text{Error term}$$

It is expected that crime will have negative impact on the economic performance as crime level increases productive activities are constrained leading to contraction in the economic performance of the economy. A higher crime rate implies a lower productive level in the country. Higher crime rate may reduce the level of both domestic and foreign investment in country. Investors see crime as sign of social instability and crime drive up the cost of doing business. Therefore, it is expected that economic performance and crime rate will be inversely related.

RESULTS AND DISCUSSION

The relationship between nominal GDP per capita and crime rate for Ghana is represented by scatter diagram with line of fit as shown in figure 1 below. From the scatter diagram it is clear that nominal GDP per capita and crime rate are negatively related. The correlation coefficient, r , between nominal GDP per capita and crime rate was negative 0.7826. At 5 percent level of significant, t -critical ($t_{0.025,19} = 2.09$) and t -cal ($t_{cal} = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} = \frac{0.7826\sqrt{21-2}}{\sqrt{1-0.7826^2}} = 5.4797$), since the t -calculated is greater than t -critical, the correlation between nominal GDP per capita and crime rate is statistically significant. This showed that crime rate and economic performance are inversely related.

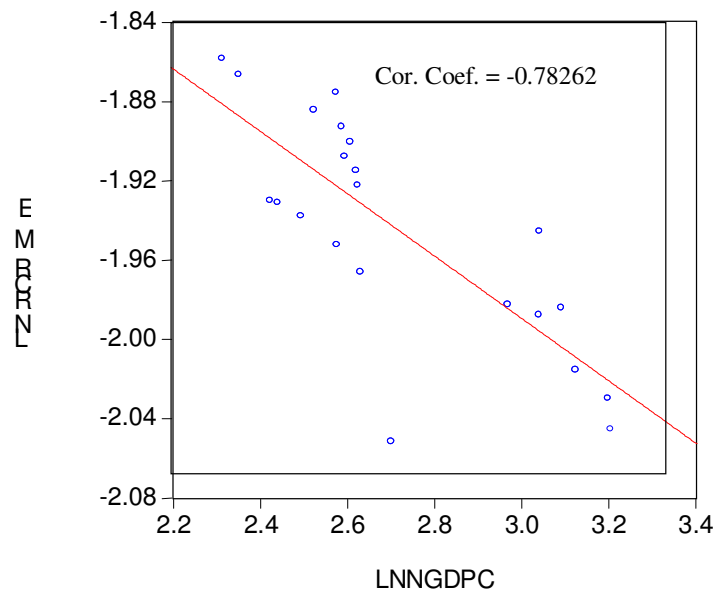


Figure 1. Scatter Plot of Nominal GDP per Capita and Crime Rate

The result of the Augmented Dickey-Fuller (ADF) test for the variables under consideration is shown in table 1 below. From the table, all the variables are stationary in their first differences at 5 percent level of significance with constant and trend. Therefore, both the variables nominal GDP per capita and crime rate are integrated at first order, $I(1)$. As a result, the Johansen's cointegration approach can be used to determine whether there exist long run relationship between nominal GDP per capita and crime rate or not.

Table 1. The results of Augmented Dickey-Fuller test (ADF) for unit root

Variable	None			Constant			Constant and Trend		
	Level t-obs	1st difference t-obs	Conclu sion	Level t-obs	1st difference t-obs	Conclu sion	Level t-obs	1st difference t-obs	Conclu sion
lnngdp	2.0288	-3.5098	I(1)	-0.3950	-4.0333	I(1)	-1.3834	-3.9441	I(1)
p-value	0.9867	0.0014		0.8932	0.0062		0.8357	0.0293	
crate	1.4376	-4.8558	I(1)	-0.9407	-4.690	I(1)	-3.7928	-4.5586	I(1)
p-value	0.9575	0		0.7543	0.0017		0.039	0.0095	

Table 2. The Result of Error Correction Model for Short Run Dynamics

Vector Auto regression Estimates		
Sample (adjusted): 1992 2012		
Included observations: 21 after adjustments		
Standard errors in () & t-statistics in []		
	<i>LNNGDPC</i>	<i>LNRCRIME</i>
	0.784348	-0.042816
LNNGDPC(-1)	(0.10652)	(0.03407)
	[7.36342]	[-1.25675]
	-1.239117	0.732108
LNRCRIME(-1)	(0.53245)	(0.17030)
	[-2.32720]	[4.29902]
	-1.780675	-0.413309
C	(0.84181)	(0.26924)
	[-2.11530]	[-1.53510]
R-squared	0.913762	0.777648
Adj. R-squared	0.904180	0.752942
Sum sq. resids	0.132734	0.013578
S.E. equation	0.085873	0.027465
F-statistic	95.36260	31.47636
Log likelihood	23.37358	47.31253
Akaike AIC	-1.940341	-4.220241
Schwarz SC	-1.791124	-4.071023
Mean dependent	2.733686	-1.948621
S.D. dependent	0.277413	0.055256
Determinant resid covariance (dof adj.)		5.47E-06
Determinant resid covariance		4.02E-06
Log likelihood		70.86998
Akaike information criterion		-6.178093
Schwarz criterion		-5.879658

VAR is used to determine the optimal lag length for the Johansen cointegration test which is based on the AIC is one. Using the selected optimal lag length of one, the likelihood ratio test which depends on the maximum Eigen values of the stochastic matrix of the (Johansen, 1991) procedure, the Maximum Eigen value statistics show that there is no cointegrating vectors at 5 percent level of significance. The null hypothesis of zero cointegrating vectors is not rejected. Therefore, it is concluded that there is no long run relationship between nominal GDP per capita and crime rate; as a result the VAR model is estimated to determine the short run dynamics between nominal GDP per capita and crime rate in Ghana.

The VAR model for examining the effect of crime rate on nominal GDP per capita or economic performance in Ghana is shown in table 2 above. The crime rate explains about 91 percent of the total variation in nominal GDP per capita in Ghana. The previous record of crime rate had negative effect on the current nominal GDP per capita and it is elastic with t-statistics equal to -2.327 and by the rule of the thumb this is greater than two in absolute terms. Therefore, at 5 percent level of significant effect of crime rate on nominal GDP per capita is statistically significant. This showed that one percentage increase in the previous record crime rate will lead to more than a percentage increase in the current nominal GDP per capita. This confirmed the alternative hypothesis that the crime rate has negative impact on economic performance in Ghana.

Table 3. The Results of Granger Causality Test

Pairwise Granger Causality Tests			
Sample: 1991 2012			
Lags: 1			
<i>Null Hypothesis:</i>	<i>Obs</i>	<i>F-Statistic</i>	<i>Prob.</i>
LNRCRIME does not Granger Cause LNNGDPC	21	5.41585	0.0318
LNNGDPC does not Granger Cause LNRCRIME		1.57942	0.2249

The table 3 showed the result of the results of Granger Causality Test. From the table, there is unilateral directional causality between nominal GDP per capita and crime rate. From the table, the result shows that crime rate Granger caused nominal GDP per capita. This showed that reducing crime rate in Ghana will improve nominal GDP per capita. However, economic performance does not Granger caused the crime rate. This showed that increase in economic performance does not cause crime rate to reduce.

CONCLUSION

The study examined the effect of crime rate on the economic performance in Ghana using VAR approach. It was found out that both the variables nominal GDP per capita and crime rate are integrated at first order. The results of Johansen’s cointegration test indicate that there exists only short run relationship between both variables. Then it was found out the correlation coefficient between nominal GDP per capita and crime rate was negative 0.7826 and significant. The previous record of crime rate had negative effect on the current nominal GDP per capita and it is elastic. Granger Causality Test showed that crime rate Granger caused economic performance as a result reducing crime rate in Ghana will improve nominal GDP per capita. Finally, it is recommended that crime rate should be discourage through all means and control to the barest minimum for improvement in economic performance.

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