CEERAC Working Papers

No. 005

May 2012

Socioeconomics of crime and discretionary punishment: the Case of Ghana

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Abstract

This paper empirically verifies whether "unlimited" judicial discretion in developing countries breeds corruption or not as judges could favor elites who have access to more money to steal or punish the poor who are petty-thieves rather harshly. Suits index and regression analysis were employed to investigate the relationship between the amount stolen and jail time. The index which is based on Lorenz curve is used to verify whether punishment for theft cases prosecuted in Ghana is anti-petty theft, neutral, or anti-serious theft. Regression analysis is employed to explore the determinants of punishment per unit of crime (i.e., amount stolen). The results strongly support the claim that disproportionate penalty is assigned to petty thefts committed mostly by the poor and non-elites. Moreover, the regression line which is almost a perfect fit indicates penalty per unit of the amount stolen decreases by 0.8 percent if the total amount stolen increases by 1 percent. Thus granting enormous discretionary powers to judges in developing countries may not guarantee retributive justice. Indeed the judiciary is likely to grant favors to elites who steal more and punish the poor who normally engage in petty theft disproportionately. Consequently high discretionary powers to judges could potentially result in high blue and white color crimes.

1. Introduction

The notion that "the punishment must fit the crime" which derives from the theory of retributive justice is common to most cultures throughout the world. It purports that penalty for a crime should be reasonable and proportionate to the severity of the crime, where proportionality implies the penalty be scaled according to the magnitude of the crime. However, the appropriateness of a penalty for a given crime may vary greatly between cultures and individuals. It is noteworthy that although retributive philosophy supports scaling of punishment according to the severity of a crime, it does not indicate how harsh or soft the punishment should be for any given level of crime. In addition, a recent extension of the philosophy by Davis (1993) indicates the amount of punishment must be proportionate to the amount of unfair advantage gained by the miscreant but not the harm caused by the offence which was hitherto used.

In most parts of the developed world where the retributive philosophy is employed, penalties are graduated or follow a set tariff limiting the discretionary powers of the judiciary. It has been argued that limiting the discretionary powers could lead to unjust punishment under certain circumstances, such as cases that required imposition of fines which do not regard the financial position of an offender. Thus an equal amount of fine for the same infraction e.g. littering could hurt a poor farmer more than a millionaire banker. In contrast, however, a number of former British colonies of sub-Sahara Africa including Ghana have adopted the common law which grants enormous discretion to a judge in criminal cases. In the absence of sentencing guidelines, when assigning penalty for a crime, judges may rely on factors such as the facts of the case including the nature of victimization, subjective principles of sentencing, relative weights of aggravation and

mitigation factors, views on crime and punishment, public opinion, as well as demographics like social class of the offender (Ashworth, 2010). Since these covariates are generally subjective and discretionary, the obvious question is whether the latter system guarantees fairness in redistributive justice or breeds legal or illegal corruption. Specifically, does the severity of punishment per unit of a crime depend on the extent of the crime or not? We investigate this phenomenon by using natural experimental data on prosecuted theft cases in Ghana, a typical sub-Sahara African country, where socio-economic forces are believed to influence assignment of penalties.

According to reports by transparency international the judicial system of sub-Sahara African (SSA) countries is generally perceived to be corrupt with a perceived average corruption index of 3.5 on a scale of 1-5, where 1 is not at all corrupt and 5 implies extremely corrupt (Riaño, et al., 2010). The respective scores for Ghana, Nigeria and South Africa are 3.7, 3.2 and 2.9. The corresponding rates for the USA and UK are 3.1 and 2.1 respectively. This not-so-good performance of Ghana is partly attributed to the wide range of discretion that judges have over penalty assignment at conviction, which makes it possible for them to favor individuals who steal more. In addition, it is perceived that judges accept bribes to subvert justice by freeing wealthy wrongdoers.

In November 2007, the Chief Justice reacting to a research report on Corruption Monitoring Exercise in Ghana prepared by Ghana Integrity Initiative (GII) conceded that the phenomenon of judicial corruption was not a perception but real (Ghana News Agency, 2007). In October 2010, the Vice President of the Ghana Bar Association called on the Chief Justice and the Council to eliminate inconsistency, corruption and misconduct by judges (Ghana News Agency, 2007). Shortly after that, in April 2011, a judge came under attack as corrupt after acquitting fourteen defendants in a high profile murder trial. In July 2011, four lawyers, including the Executive

Secretary of the Constitutional Review Commission, made allegations of widespread corruption among judges; and another lawyer openly confessed to having bribed a judge (Ghana Business News, 2011). Furthermore, in September 2011, two magistrates were sacked for demanding bribes.

We hypothesize that if judges indeed grant such favors at conviction, then the punishment per unit of the crime must decrease with total amount stolen. Two techniques are employed to achieve our objectives: First, an index, similar to Suits index, is employed to verify the extent to which the cumulated punishment increases with cumulated amount stolen; and secondly, a regression analysis is employed to verify the determinants of penalty assigned per unit of the crime or amount stolen (i.e., the price per unit of the crime). We used data meticulously collected on theft and robbery cases convicted in Ghana over a period of six years (2005 to 2010). Interestingly, the data strongly suggests among other things that penalties assigned for theft cases are extremely anti-petty theft (i.e., judges punish petty thieves disproportionately). Moreover individuals who stole more were found to belong to the higher echelon of the social strata and the petty thieves belonged to the extreme lower end of the social scale.

The remainder of the paper is organized as follows. Section 2 presents the Penalty Index followed by the regression analysis in section 3. The last section, i.e., Section 4, concludes the paper.

2. The Penalty Index

To verify whether punishments assigned for varying levels of stealing is anti-serious crime, crime neutral, or anti-petty crime, a variant of the Suits Index (Suits, 1977) is employed. The index, which

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was originally developed to determine whether a given tax structure is progressive or not, is a summary measure and comes handy in addressing this problem. The index is based on Lorenz Curve which plots cumulative percent of total family income on the vertical axis against the cumulative percent of families on the horizontal axis. Fig. 1 depicts the Lorenz curve.
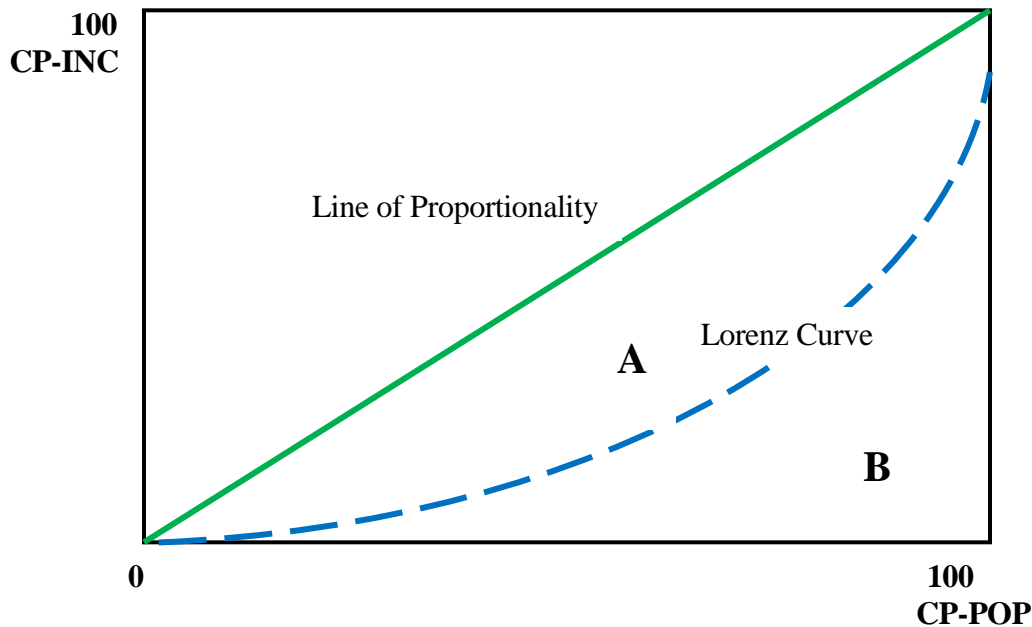
Fig.1. Cumulative Proportion of Income (**CP-INC**) and Cumulative Proportion of the Population (**CP-POP**)

The 45 degree line from bottom left corner of the diagram to top right corner represents the line of perfect equality since income distribution is perfectly proportionate to the population along the line. For example the first 10 percent of the population earns exactly 10 percent of the income, etc. If the Lorenz curve sags below the line of perfect equality, a higher proportion of the family has a lower cumulated proportion of the income hence income distribution is less equitable. A coefficient known as, Gini Coefficient, is computed as the ratio of the area A to

$A + B$ (i.e., $Gini = \dfrac{A}{A+B}$). If there is perfect equality (i.e., $A = 0$) the Lorenz curve coincides with the 45 degrees line and the Gini Coefficient is zero. Conversely, the coefficient will approach one if there is perfect inequality (i.e., if $B \approx 0$).

Following this logic, Suits presented a figure similar to Lorenz curve, but plotted cumulative percent of tax burden on the vertical axis and cumulative percent of income on the horizontal axis. Like Suits, this research employs the logic of the Lorenz Curve by plotting the cumulative proportion of total jail time received from stealing on the vertical axis and the cumulative percentage of value of the theft on the horizontal axis. Fig. 2 depicts the plot. Note that the 45 degrees line signifies neutral punishment, i.e., the punishment per unit of the crime does not depend on the amount stolen; the sagging curve, akin to the Lorenz curve, indicates anti-serious theft (i.e., the severity of punishment increases with the total amount stolen); and the concave function indicates anti-petty theft which also implies petty thieves receive harsher penalty than their counterparts who steal more.
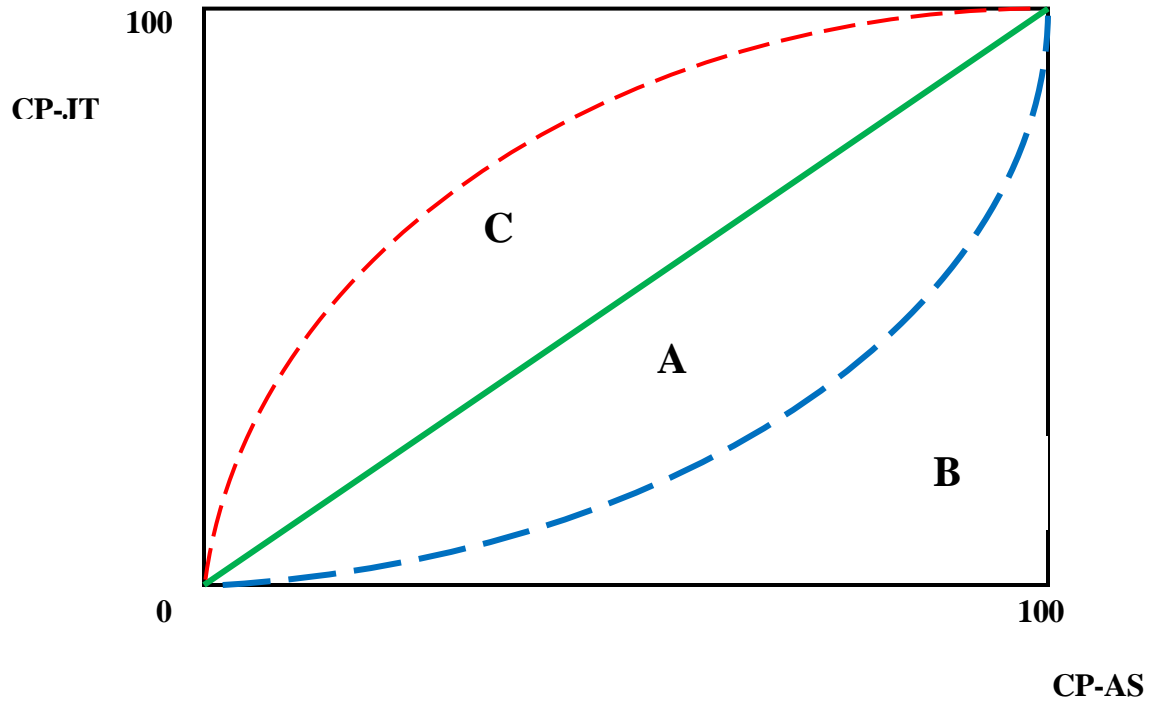
Fig. 2. The plot of the relationship between Cumulative Proportion of Total Jail Time (**CP-JT**) and Cumulative Proportion of Amount Stolen (**CP-AS**)

The crime index is calculated as $W = 1 - \dfrac{B}{A+B}$ if the penalty is neutral or anti-serious theft.

Conversely, if the penalty is anti-petty theft, the corresponding index is $W = -\dfrac{C}{A+B}$. Thus, $W = 0$ signifies neutrality of punishment; $W \in (0,1)$ indicates anti-serious theft, while anti-petty theft is $W \in (-1,0)$. The general formulation of the index is

$$W = 1 - \frac{1}{5000} \int_{0}^{100} V(z) \, dz \tag{1}$$

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Where $V(z)$ is cumulative percentage jail time (or punishment) (**CP-JT**) and z is the cumulative percentage of the value of item stolen (**CP-AS**) from a given data set. The (1/5000) term comes from the area of the triangle below the line of proportionality. In reality, however, the cumulative distribution $V(z)$ is often available for only a few discrete values of z making it difficult to directly implement equation 1. As a result, a discrete approximation, i.e., equation 2, is often used.

$$W \approx 1 - \frac{1}{10000}\left(\sum_{i=1}^{n} \left\langle \left(V(z_i) + V(z_{i-1}) \right) \left(z_i - z_{i-1} \right) \right\rangle \right) \tag{2}$$

Note that n is the number of observations and i is individual identifier. The use of this method requires ranking of the data based on values of z.

Implementing the Crime Index

Ghana's Criminal Court procedure is guided by the Criminal Procedure Code (Act 30) of 1960, which is based on the British law. The legal system of the country does not use grand juries, but the constitution guarantees that defendants charged with a criminal offense are entitled to a trial by jury. Offenses in Ghana are categorized into the following degrees: Capital offenses, first-degree felonies, second-degree felonies, and misdemeanors. Capital offenses include murder, treason, and piracy and carry a maximum penalty of death by hanging. First-degree felonies involve manslaughter, rape, and mutiny, and carry a maximum sentence of life imprisonment. Furthermore, second-degree felonies are punishable by ten years' imprisonment,

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and include intentional and unlawful harm to persons, perjury, and robbery. Misdemeanors, which include assault, theft, unlawful assembly, official corruption, and public nuisances, are punishable by various terms of imprisonment. The penalty increases with recidivism. According to the criminal code, a person convicted of a criminal offence for offences such as stealing, fraud, among other offences, is liable to a term of imprisonment not exceeding twenty-five years and any person who commits robbery may be imprisoned for life or a lesser term. A summary of the criminal code on theft cases in Ghana is presented in Table 1.

Table 1: Offences relating to fraud and stealing under the Ghana Criminal Code, Act 29/1960

Offence	Section	Provision creating offence	Punishment prescribed
Stealing	124	A person who steals commits a second degree felony	a term of imprisonment **not exceeding twenty-five years**
Defrauding by false pretence	131	A person who defrauds any other person by a false pretence commits a second degree felony	a term of imprisonment **not exceeding twenty-five years**
Falsification of accounts	140	A clerk, a servant or a public officer, or an officer of a partnership, company or corporation commits a second degree felony who: (a) conceals, injures, alters or falsifies a book, or an account kept by or belonging or entrusted to the employers or to the partnership, company or corporation; or entrusted to the officer, or to which the officer has access, as an officer or omits to make a full and true entry in an account of anything which the officer is bound to enter in the account; or (b) publishes an account, a statement or prospectus, relating to the affairs of the partnership, company or corporation, which the officer knows to be false in a material particular	a term of imprisonment **not exceeding twenty-five years**
Dishonestly receiving property	146	A person who dishonestly receives property which that person knows has been obtained or appropriated by a criminal offence punishable under this Chapter, commits a criminal offence and is liable to the same punishment as if that person had committed that criminal offence.	a term of imprisonment **not exceeding twenty-five years**
Robbery	149	A person who commits robbery commits a first degree felony	**life or any lesser term**
Unlawful entry	152	A person who unlawfully enters a building with the intention of committing a criminal offence in the building commits a second degree felony.	a term of imprisonment **not exceeding twenty-five years**

From the Table, the prescribed penalties for the various theft cases clearly indicate judges could exercise enormous amounts of discretion.

In order to compute the crime index, data was collected on all convicted theft cases that were prosecuted within the period of 2005-2010 and reported on Ghanaweb.com[1]. From the data, the average amount stolen is GHS 35,811.85 (i.e., US$23,705.00), with a very high standard deviation which is 6 times the mean. The mean jail term is 57 months, also with a high standard deviation of 78. The mean jail time per GHS stolen is 1.15 months. Fig. 3 presents the plot of the relationship between total amount stolen and the jail time assigned.
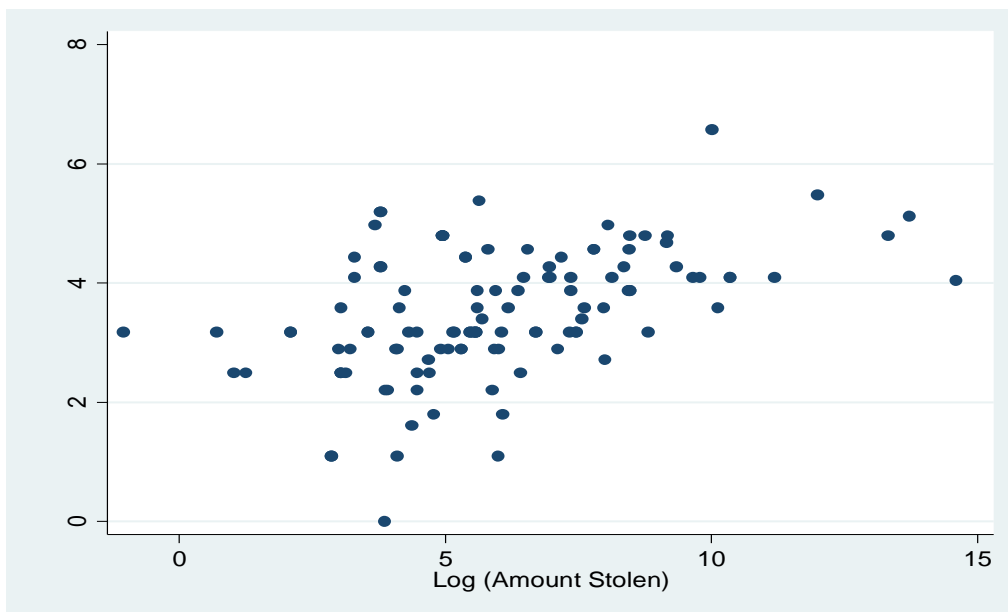

Fig. 3. The *relationship between Total Amount Stolen* and *Jail Time*

From the scatter plot presented in Fig. 3, the total jail time appears to be generally increasing in the amount stolen. Based on equation 2, the crime index is calculated to be

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[1] The page is accessible at http://www.ghanaweb.com/GhanaHomePage/crime/ .

$$W \approx 1 - \frac{1}{10000}(9670.81) = -0.93 \qquad (3)$$

The negative value (close to -1) indicates severe anti-petty theft. Consequently, for theft cases in Ghana, the judiciary assign heavier penalty to petty theft relative to serious theft. According to the data, the least amount stolen was GHS 0.35 (US$0.23) and this attracted a jail term of 24 months; while the maximum amount of GHS 2,202,111.00 received a total jail term of 57 months. From the data, five individuals who received the lowest penalties included a businessman, a former minister of state, a pastor, a banker and a branch manager of a bank. These are elites in the Ghanaian society. It is noteworthy that pastors in Ghana do not disclose their wealth and are perceived to be rich with some having net worth in millions of US dollars[2]. The average penalty these elites received is 0.0007 of a month (i.e., 30 minutes) for each GHS1.00 stolen. Their four counterparts (made up of 2 farmers, a laborer and a teacher) who stole the least amounts received 16.5 months per GHS1.00 stolen. To further investigate factors influencing punishment per unit of the theft cases a regression analysis was done.

3. Empirical estimation of conviction

To empirically investigate the relationship between non-monetary penalties (i.e., jail time) per unit of Ghana Cedi (GHS) equivalent stolen and total amount stolen, two important variables are controlled for. First, we hypothesize that spatial differences exist in the assignment of penalties. Second, following the statutory classification of theft cases in Ghana, we treat robbery as a different (more serious) form of stealing. The empirical model is specified as

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[2] See e.g., http://www.dailyguideghana.com/?p=28929 Daily Guide News, October 5, 2011. Retrieved 2012-04-28.

$$\ln\left(\frac{Jail\ Time}{GHc\_stolen}\right) = a_0 + a_1 \ln\left(GHc\_stolen\right) + a_3 D\_Robbery + a_4 D\_AR + \mu_i \qquad (4)$$

where μ_i is a normally distributed error term (i.e., $\mu_i \sim N(0, \sigma_\mu^2)$; $D\_Robbery$ =1 if the stealing involves robbery and zero otherwise; $D\_AR = 1$ if the region is Ashanti region (where most theft cases were prosecuted) and zero otherwise. Note that $a_1 < 0$ ($a_1 > 0$) if judges favor those who steal more (less).

The specific variables considered were the cash value of items stolen or amount stolen, the penalty (i.e., the length of jail time), the nature of the theft (i.e., whether it is robbery or otherwise), the age of the criminal and the region within which the prosecution took place. Due to poor record on criminals, there was very limited information on recidivism. Also the data on age and occupation of the criminal was scanty and therefore could not be used in the empirical analysis. In order to compare the monetary values across the three years, all values were adjusted using the consumer price index. The descriptive statistics of the data is presented in Table 2.

Table 2. Descriptive statistics of variables

	Observations	**Mean**	**Standard Deviation**
Jail Time (in months)	118	56.97	77.72
Amount Stolen (in GHS)	118	35,811.85	225,424.1
Jail time per GHS stolen	118	1.15	6.45
Robbery (=1, 0 otherwise)	118	0.08	0.27
Prosecuted in Ashanti Region (= 1, 0 otherwise)	118	0.28	0.45

Source: Data extracted from Ghanaweb.com (http://www.ghanaweb.com/GhanaHomePage/crime/)

From Table 2, the total number of usable cases obtained was 118. Although the sample size is quite small, the cases reported on the website were purely random. Moreover, in Ghana, less than

5% of criminal cases receive conviction (Ghana Police Service, 2008). Of the 118 cases, only 8 percent of the theft cases are robbery. Out of the 10 regions in Ghana, 28 percent of the cases prosecuted were in the Ashanti Region, which has 17.3 percent of the nation's population. Fig. 4 presents the plot of the relationship between jail time per unit of the amount stolen and total amount stolen.
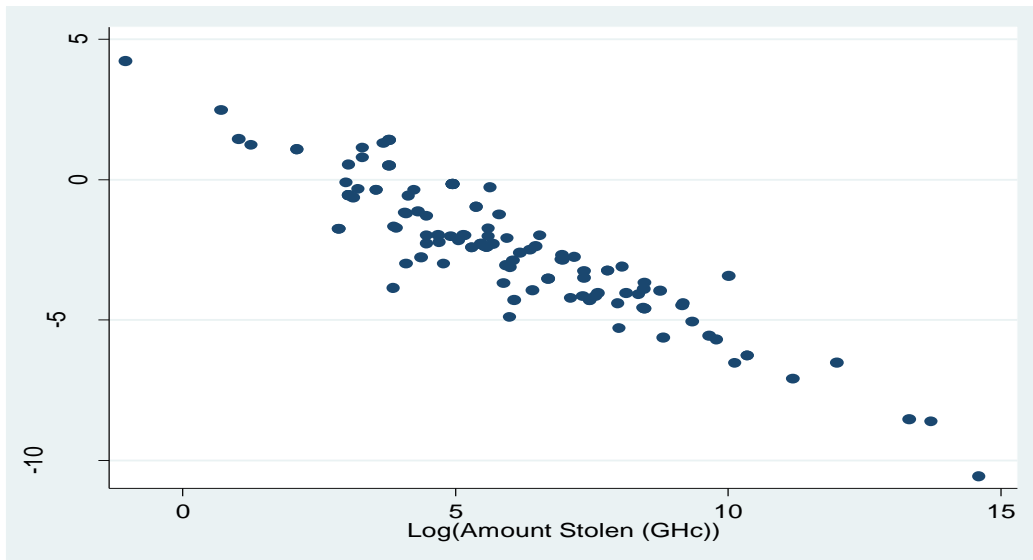

Fig. 4. The *relationship between Jail Time per GHS Stolen and the Total Amount Stolen*

Fig. 4 depicts a log-linear and inverse relationship between total amount stolen and time served in jail for each GHS stolen. Thus, the total jail time assigned increases nonlinearly and falls as the total amount stolen exceeds a threshold. Indeed the criminal who suffered most was the one who stole the least amount and the one who gained most was the one who stole the highest amount. The results of the estimated empirical model are presented in Table 3.

Table 3. Determinants of Logarithm of Jail Time Served Per Ghana Cedi (GHS) Stolen (2005-2010)

	Coefficients	Elasticities
Log (Amount Stolen)	**-0.80**	**-0.80**
	(0.027)***	
Robbery (=1, 0 otherwise)	**1.94**	**0.16**
	(0.124)***	
Prosecuted in Ashanti Region (= 1, 0 otherwise)	**0.63**	**0.18**
	(0.14)***	
Constant	**1.99**	
	(0.21)***	
Observations	**118**	
R-squared	**0.90**	

Robust standard errors are in parentheses.*** significant at 1% level

The R-squared indicates over 90 percent of the variation in the dependent variable is explained by the explanatory variables. The near perfect fit of the regression line supports the finding that members of the same bench determining a sentence at separate location without consulting colleagues were likely to assign similar penalties than would have been expected by chance (Hood, 1972). However, a given level of theft may have been committed under different aggravating and mitigating circumstances indicating if the judges consider all the ingredients of cases, penalties for a given level of theft could have varied significantly generating a relatively lower R-squared than obtained. Thus, the extremely high R-squared reflects the fact that sentencing were not based on the traditional view of retributive justice, i.e., the harm caused by the crime.

Further diagnostic tests show the estimated error term from the regression is not heteroskedastic. All the explanatory variables are statistically significant at 99 percent confidence level. The coefficient of amount stolen is negative with elasticity coefficient of -0.8 indicating that, on the average, the jail term per GHS decreases e.g. by 8% if the amount stolen increases by 10%, all else being equal. Clearly, this indicates that criminals who stole more are significantly favored by judges in Ghana. A possible reason for the favorable sentencing received by those who steal more is

their ability to afford a better counsel at trial. However, looking at the fit of the regression line, this is possible only if the quality of the legal counsel representing the thief perfectly correlates with the amount stolen, which is doubtful.

Furthermore, robbery cases receive 16 percent more jail time per GHS, on the average, relative to other forms of stealing and criminals convicted in Ashanti region receive 18 percent higher jail time than other regions. This finding stems from the fact that the criminal code considers robbery a much more serious crime than other types of stealing.

Finally, from the regression results, the total jail time increases asymptotically as the amount stolen increases. It can easily be shown that for non-robbery cases prosecuted in other regions besides Ashanti, $\text{Jail Time} = \left(\text{GHS\_stolen}\right)^{0.2}\exp(1.99)$. This implies an individual could only receive the maximum jail term of 25 years if he/she steals more than GHS116Million (US$77Million), which is equivalent to per capita income of over 53,000 individuals within the country. The implication is that, high discretionary powers to judges could potentially result in high blue and white color crimes. It is paramount the legislature and the judiciary set sentencing guidelines that provide outer limits of penalties to be followed by judges (see e.g., Ashworth, 2010, for details on setting sentencing guidelines). A judge should be required to provide reasons if he/she assigns penalties that deviate significantly from the guideline.

4. Conclusion

It is argued that limiting the powers of judges may result in injustice to the poor relative to the rich if the punishment involves a fixed cash payment for a given level of crime. On the other hand, granting unlimited discretion powers to the judiciary such as the case in Ghana could result in

corruption. Data on theft cases prosecuted in Ghana within the period of 2005-2010 was used to verify the hypothesis that discretions could result in corruption.

The result from a Suits-type index indicates a severely regressive punishment structure. Thus petty thieves are harshly punished while their counterparts who steal more are highly favored. Furthermore investigations reveal that the petty thieves are made up of the unemployed, farmers, and teachers who belong to the lower strata of the social scale. On the other hand, those who had more money to steal are a politician, a banker, and a businessman who are elites in society. In addition, from a regression analysis, it has been found that convicts who engaged in robbery received more jail time on the average than their counterparts who engage in other forms of theft. These results are indicative of the fact that the current judicial system in Ghana favors blue and white color crimes. To address this problem, sentencing guidelines are needed.

Moreover, it has also been found that criminals convicted in the Ashanti region (where most cases where convicted) received lengthier jail time than those convicted in other regions.

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