EFFECTS OF CORPORATE INCOME TAX ON THE PROFITABILITY OF MINING COMPANIES: EVIDENCE FROM GHANA STOCK EXCHANGE

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Abstract:

The tax rate of the mining sector in Ghana is viewed to be too high and has adverse effects on the profitability of mining firms in the country. There has been an outcry for the government to find ways to help curb this problem as mining companies in the country might become uncompetitive or even fold up if not checked.
This study investigates the impact that corporate income tax has on profitability of mining companies in Ghana using ten years data from the year 2005 to 2014 with a sample of the only two listed mining firms on the Stock Exchange as at the time of the study.

Return on assets was used as proxy for profitability as against corporate income tax which is the independent variable whereas company size, liquidity, leverage and growth were considered as control variables. The regression results showed that corporate income tax negatively influences profitability; whereas company size positively associates with profitability and liquidity, leverage and growth negatively impacted profitability. It was therefore recommended that government introduces the sliding scale method of taxation in the mining sector in order to make mining firms remain profitable whiles minor mining firms seek to increase their size of operations to be more competitive and profitable.

Key Words: (corporate income, profitability, stock exchange, Ghana)

1.0 Introduction:

Taxation as an economic tool serves as the backbone of the fiscal budget that drives the economy in Ghana. Taxation was first introduced as the income tax ordinance (No. 27) in 1943 and like any law, has had its fair share of amendments over the years with the current income tax law being the Income Tax Act 2015 (Act 896). For the purpose of this study, the Internal Revenue

Act, 2000 (Act 592) was considered due to data that was to be used so as to present a true reflection of the existing situation in the Mining industry of Ghana.

Abdallah (2008), described 'taxation' as the levying of compulsory contributions by public authorities having tax jurisdiction, to defray the cost of their activities in which no specific reward is gained by the taxpayer. Implementation of taxation therefore has implications for improving the welfare of taxpayers. The levying of huge taxes however may have implications that could either positively or adversely affect profits of businesses especially that of mining companies. The tax system of Ghana indicates, unless specifically exempted in the law, that resident companies are required to pay tax on income relating to business and investment derived from, accrued in, brought into or received in Ghana after the necessary adjustments are made and the rate of tax generally is 25% (Abdallah, 2008).

On Monday May 19 2014, AngloGold Ashanti released a statement about the Company's performance. The release which revealed a general positive financial performance for the mining giant also highlighted problems at the Obuasi Mine that resulted in a planned retrenchment of over 5,000 employees, including Contractors (Boateng, 2014).

1.1 Statement of the problem

High tax rates imposed on the Mining Sector dwindled the profits of Mining Companies in Ghana and consequently reduced their global competitiveness (Koranteng, 2014). Furthermore, Boateng (2014) asserted that there are worries that Ghana's mining industry could become uncompetitive internationally, and stop attracting direly needed new investment into the sector. Mining companies in Ghana have been riddled with heavy losses over the years and this is partly attributable to the high taxes paid as well as the countries unstable economic conditions. Since 2005, AngloGold Ashanti has made over $600 million dollars in losses with record losses almost every year since its inception in 2004. This has caused some concerns especially with the increases of tax rates levied on mining companies over the year which is currently at 35% and its accompanying insinuations that these losses are partly due to the hefty tax rates imposed on them.

1.2 Objective of the Study

The objective for this study was to examine the impact of corporate income tax on profitability of mining companies in Ghana.

1.3 Research Question

The research question seeks to locate the pertinent issues underlining the real and quantifiable effects that corporate income tax has on profits of mining companies in the country. The question posed is: What is the significant impact of corporate income tax on profitability of mining companies in Ghana?

2.0 Materials and Methods

The methods and materials used by the researchers to investigate the quantum effect of taxes on profits of mining companies and includes the following: Study area, research design, population and sample size, source of data, definition and measurement of variables, model specification, data analysis and conclusion

2.1 Study Area: AngloGold Ashanti Limited

AngloGold Ashanti Limited, the subject of study for this research currently has two wholly owned and managed operations in Ghana–Obuasi and Iduapriem. The Iduapriem mine, wholly owned by AngloGold Ashanti since September 2007, comprises the Iduapriem and Teberebie properties in a 110km2 concession. Iduapriem is located in the Western Region of Ghana, some 70km north of the coastal city of Takoradi and 10km southwest of the Tarkwa mine. Iduapriem is an open-pit mine and its processing facilities include a carbon-in-pulp (CIP) plant.
The Obuasi Mine is located in the Ashanti Region of Ghana, approximately 60km south of Kumasi. The Mine, currently under the management of AngloGold Ashanti, the world's third largest gold producer, employs about 6,500 people and is the main backbone of the economy of the Obuasi Municipality and a key foreign exchange earner for Ghana.

2.2 Research Design

The objective is to establish the relationship between corporate income tax and profitability; the research adopted the explanatory (casual) research method to identify the relationship between the two variables. A panel data study design which combines cross-sectional and time series data of selected variables of the firms was used.

2.3 Population and Sample Size

The population for this study is comprises all mining companies in Ghana as at the time of this study and are currently three.
The sample size is usually a compromise between what is desirable and what is feasible. The researchers used the only two Ghanaian mining companies that are listed as the other one is non Ghanaian (South African) and would serve as a good representative of the mining sector.
The data for this study would be gathered from secondary sources. The secondary data was sourced from published annual reports of the listed mining companies retrieved from the Ghana stock exchange (GSE, 2014).
Annual reports spanning from 2005 to 2014 only of the mining companies under study were used. For the purposes of this study, the researchers used purposive sampling technique as the aforementioned companies are the only two Ghanaian mining companies in the country that are listed and would serve as a good representative of the mining sector.

2.4 Model specification

The Regression model was used to examine the relationship between the independent variable, corporate income tax and the dependent variable, profitability. In order to establish empirical investigation, there was the need for model specification; a functional model is specified as follows:

$$\gamma_{it} = \alpha + \beta\chi_{it} + \varepsilon_{it} \quad \text{(Eq. 1)}$$

Where:
γ =the dependent variable
α = the intercept of the equation
β = coefficients of independent variables
χ = set of independent variables
i = cross-sectional dimension of firms (2)
t = time series dimension $t = 1, 2, 3, 4 \ldots T$
ε = the error term

From equation (1) the reduced form of the model to be estimated takes the following form:
$Y = f(CIT_{it}, SIZ_{it}, LEV_{it}, LIQ_{it}, G_{it})$ ……(Eq.2)
Equation (2) above can be rewritten and transformed to become the operational model which would be used for estimating the impact of corporate income tax on profitability. The model can thus be written as follows:

$$P_{it} = \alpha_0 + \beta_1 CIT_{it} + \beta_2 SIZ_{it} + \beta_3 LEV_{it} + \beta_4 LIQ_{it} + \beta_5 G_{it} + \varepsilon_{it} \quad \text{……(Eq. 3)}$$

Where:

P_{it} = profitability

$\beta_1 CIT_{it}$ = corporate income tax of the firms

$\beta_2 SIZ_{it}$ = size of the firms

$\beta_3 LEV_{it}$ = leverage of the firms

$\beta_4 LIQ_{it}$ = liquidity of the firms

$\beta_5 G_{it}$ = Growth of the firms

The expected relationships of the independent variables are as follows:

- Corporate income tax is expected to have a negative relationship with profitability as it purports to rational thinking that any increases in CIT will adversely affect profits. Therefore, its coefficient β_1 is expected to be negative ($\beta_1 < 0$).
- Size of a firm is relevant to its quantum of operations therefore it is expected to have a positive relationship with profitability. Its coefficient β_2 is expected to be positive ($\beta_2 > 0$).
- The leverage is expected to have a negative association with profitability. Thus its coefficient β_3 is expected to be negative ($\beta_3 < 0$).
- Liquidity is also expected to have a positive relationship with profitability. Its coefficient β_4 is thus expected to be positive ($\beta_4 > 0$)
- Growth is expected to reveal a positive relationship with profitability.
  Thus, ($\beta_5 > 0$).

2.5 Description and Measurement of Variables

The independent and dependent variables of the study were identified to ascertain the impact of corporate income tax on the profits of mining companies.
Profitability is the dependent variable and can be measured using various profitability ratios such as return on assets (ROA), return on equity (ROE), net profit margin (NPM), gross profit margin (GPM) and return on capital employed.
Profitability was measured using the return on assets ratio to ascertain how profitable the companies are relative to their total assets**.** This is represented as: Profitability= net profit (after tax) / Total assets
The independent variable for this study is the corporate income tax (CIT) paid by the identified firms for the years of assessment. This was sourced from the annual reports of the corporations under study. The researcher used size (SIZ), leverage (LEV), liquidity (LIQ) and growth (G) of the firms as control variables as corporate income tax is not the only variable that affects profitability.

3.0 RESULTS AND DISCUSSION

3.1 Descriptive Characteristics

Table 4.1: Summary Characteristics of the variables

Variable	Minimum	Mean	Maximum	Std. Deviation
P	-.9164096	-.0822962	.1479356	.2243751
CIT	-7.23e+08	-7.64e+07	3.33e+08	2.17e+08
SIZ	8.411709	9.378125	10.10513	.6317858
LIQ	-.3365023	.1006579	.5123423	.2508661
LEV	-.5336592	-.2805998	.082788	.1785236
G	-2.341671	-.4549393	-.1572843	.4733358

Table 4.1 defines the descriptive statistics which reveals how the variables used in the study behave in the study. The mean is a simple measure of the central tendency of the data average, standard deviation is the square root of the variance and therefore reflects both the deviation from the mean and the frequency of the deviation and the minimum and the maximum sample are the values of the least and greatest elements of the sample respectively.

Profitability, as observed from the above has a minimum of -.9164096 with an average of -.0822962 and a maximum of .1479356 for the period under study. Corporate income tax measured as the tax on net profit/loss has a minimum of -7.23e+08, an average -7.64e+07 and a maximum of 3.33e+08. Size of the firms measured as the total assets of the firm has a minimum of 8.411709, an average of 9.378125, and a maximum of 10.10513. Liquidity of the firms under study which was measured as the ratio of current assets to current liabilities has a minimum of -.3365023, an average of .1006579 and a maximum of .5123423. Leverage, measured as the ratio of total liabilities to total assets presents a minimum of -.5336592, an average of -.2805998 and a maximum of .082788. Growth was also measured as the ratio of total equity to total assets of the firms and as depicted in the table above, has a minimum of -2.341671, an average of -.4549393 and a maximum of -.1572843.

3.2 Analysis of Variation (ANOVA)

Table 4.3: Source of Variation of the Model

Source	SS	DF	MS	R-squared	Adj. R-squared	Prob.
Model	.873691218	5	.174738244			
Residual	.082848436	14	.005917745			

Total	.956539654	19	.050344192	0.9134	0.8825	0.0000

From Table 4.3 two sources of variation are seen: regression and residual. The regression sources of variation are the portion of the variation in the dependent variable **(**profitability) that is explained by regression model while the residual variation is what the model could explain. A model which is reliable should have a higher regression sum of squares than the residual sum of square.

The source of variation of the model yields R square figure of 0.9134 indicating that, dependence on the model will account for 91.34% of the changes in the dependent variable (profitability). The Adjusted R-squared of 0.8825 in the model explains the variables that ought to be added to the model but was not added.

3.3 Regression Results

Table 4.4: Regression Table

P	Coefficient	Standard Error	t-value	Prob.
CIT	-1.18e-10	9.25e-11	-2.14	0.051*
SIZ	.3714375	.0432712	8.58	0.000*
LIQ	-.1908766	.0917872	-2.08	0.056*
LEV	-2.208914	.2309807	-9.56	0.000*
G	-.4702913	.0762229	-6.17	0.000*
CONSTANT	-4.395351	.4730244	-9.29	0.000*

Corporate income tax: From table 4.4 above, there is a negative relationship between corporate income tax and profitability of corporations listed on Ghana's stock exchange. Therefore an increase in corporate income tax of 1% will cause profitability to decrease by 118%. The P value of 0.051 is significant.

That is, the results will not be true at 5% but will be correct at 95%. The t-value is -2.14. Impliedly, corporations with higher corporate income tax would therefore see a huge reduction in profits as predicted. Subsequently this provides grounds for accepting the assumption that corporate income tax has a negative relationship with profitability. The findings from the study is confirmed by Beigi et al (2013) who found out that tax had a negative significant effect on the

profitability in listed companies of Tehran stock exchange. The result of this study sharply contradicts that of Ezugwu and Akubo (2014), Chude and Chude (2015) both of which depicted a positive relationship between corporate income tax and profitability.

Taxation is the most important means of the state's financial policy of which accelerate the process of economic growth. Likewise, it is one of the most stable and general sources of revenue to a government. The government revenue includes tax revenues, revenues gained from selling the oil, cocoa, gold and other revenues. The tax system of Ghana needs to be equitably and economically structured to deter evasion or even unethical avoidance if the government is to secure revenues for national development as corporations remain profitable.

Firm size: Inferring from the table above, there is a significant positive relationship between size and profitability of listed mining firms. Thus, the coefficient of .3714375 with a P value of 0.000 which is statistically significant. This shows that a 1% increase in size will invariably cause a quantum increase of 36.54% in profitability. Thus, the result will not be true at 1% but highly correct at 99%.The t-value is 8.58. Realistically, the larger the size of a firm, the higher its level of profitability and as confirmed by the results, the acceptance of the assumption that size would have a positive relationship with profitability is inevitable. This is confirmed by Kinka et al. (2005), despite a conflicting opinion by Karkrah and Ameyaw (2010) who believe that risk diversification in banks can lead to a negative relationship.

Liquidity: There is a negative correlation between liquidity and profitability from the resultant table above. As indicated, the coefficient of liquidity is -.1908766 whiles its P value is 0.056 which is significant. The implication is that, 1% increase in liquidity will result in a decrease of 19.09% in profitability. The initial preposition that liquidity is expected to produce a positive relationship with profitability can therefore be rejected. This empirical result is vehemently concurred by Devinaga Rasiah (2010).

4.0 Findings

4.0.1 The study reveals a negative relationship between corporate income tax and profitability of mining corporations listed on Ghana's stock exchange which is statistically significant. As profitability determines the performance of a firm and shareholders dividend, it is imperative that stringent but legal measures are taken by management to reduce tax liabilities

4.0.2 The study also reveals a significant positive relationship between firm size and profitability. This result provides evidence that; the size of a firm is paramount in determining its profitability thus smaller mining firms should endeavor to increase the size of their operations in order to increase their profits.

4.0.3 Moreover, the study discovered a negative relationship between liquidity and profitability of the firms for the period considered. The results are statistically significant. This provides insight into the adverse effect high liquidity may have on profitability.

4.0.4 It can be drawn from the findings that leverage is negatively associated with profitability and statistically significant. This shows that leverage of a firm is a significant factor in ascertaining profits thus the use of debt to finance the purchase of assets should be critically analyzed.

4.0.5 Growth of the listed mining firms was found to have a negative relationship with profitability which is statistically significant. This may be due to the consistent losses incurred by the firms under study.

Conclusion

The study examines the impact of corporate income tax on profitability of mining companies in Ghana using evidence from mining firms listed on the stock exchange. The researchers used the only two Ghanaian listed mining firms as at the time of the study; AngloGold Ashanti and Golden star Resources, with panel data covering a period of ten years (2005- 2014). The profitability of the mining sector in Ghana is of utmost importance considering the level of revenues accumulated from the sector through taxes for development. There are in fact many factors that affect profitability but corporate income tax was identified as the key determinant. Four control variables were considered as independent variables.

Based on the results of the descriptive statistics, correlation matrix, analysis of variation and regression analysis, the researcher came out with the following conclusions:

The study concludes that, corporate income tax has a negative relationship with profitability of listed mining firms in Ghana.

Also the control variables, size of the firms, has a positive impact on profitability whereas liquidity, leverage and growth all have a negative relationship with the profitability of mining firms listed on Ghana stock exchange.

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