The Effect of Corporate Income Tax on Financial Performance of Listed Manufacturing Firms in Ghana

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Abstract
The study used panel data methodology covering ten listed manufacturing firms over seven years to empirically determine the effect of corporate income tax on financial performance. The study revealed that there is a significant negative relation between corporate income tax and financial performance. On the other hand, firms' size, age of the firm and growth of the firm show a significant positive relationship with financial performance.
Keywords: Corporate income tax, Firms' size, growth, Age, financial performance

1. **Introduction**
The manufacturing sector of any economy is considered to be very important as it contribution to the growth of the economy reflects visibly in job creation and improved tax contribution. The liberalization of the Ghanaian economy through various home grown and World Bank policy prescriptions over the past three decades changed the structure of the manufacturing sector in Ghana. In a manner that is concern for current policy makers.
The challenges of the manufacturing sector come in a midst of high corporate tax rates in excess of 35% up till 2006. The puzzle on hand is whether it is the high income tax rates that deter foreign direct investment to the manufacturing sector or low import duties create the incentive for investors to import rather than manufacture locally? Whichever way, taxation, observably, plays a role in the misfortunes of the sector because tax policies, apart from generating revenue for the state, serve several other purposes. It can be used as an avenue to protect infant industries, create incentive for investors to invest in certain areas of the economy or to create disincentive for other activities (Ali-Nakyea, 2008). A tax policy defines the cost structure of firms as it is factored into pricing (Nnadi & Akpomi 2007). Governments, over the years, have made pronouncements and policies that are supposed to create tax incentives for businesses. Fortunately, most of the provisions are to help manufacturing companies to withstand adverse external development.
The government of Ghana over the years has accepted the fact that taxes have serious effect on the ability of manufacturing companies to retain earnings. It is from this backdrop that the corporate income tax rates have evolved from about 45% in the 1980's to 35% in the 1990's and to 25% currently. Aside the reduction in corporate tax rates, tax policies have provided several reliefs and tax rebates that manufacturing companies can take advantage of. For instance, manufacturing companies in the three Northern regions of Ghana enjoy a 100 percent tax rebate, while those situated in other regions (excluding regional capitals), except in Accra-Tema enjoy a 50 percent tax rebates. Concessionary rates are also available for manufacturing companies that export substantial portions of their products (Internal Revenue Act, 2000). These reliefs, rebates, and concessions are expected to influence the investment decisions, growth, and ultimate performance of companies.
Notwithstanding, manufacturing companies raise several issues on the country's tax policies. There is a general perception that the flat corporate tax rate is not vertically equitable. According to the manufacturers, the flat corporate tax rate does not favour small manufacturing companies. In buttressing this argument, the manufacturing companies compare the flat corporate tax rate with the progressive personal income tax rates. Indeed, Adam Smith as cited in Ali-Nakyea (2008) mentioned that, equity as one of the characteristics of a good tax system. According to Ali-Nakyea (2008), a good tax system should exhibit both horizontal and vertical equity. According to the author, vertical equity is achieved if persons with higher income pay higher tax (higher effective tax rate) than persons with lower income.
Another issue raised against tax policies in Ghana relates to other taxes, apart from the statutory corporate taxes. From 2001, companies apart from payment of the corporate tax, pay a national reconstruction levy of 2.5 percent of their profit. This adds to capital gain taxes paid by the company. Put together, companies pay between 35 and 40 percent of their profit as tax. Indeed, there has been the perception that in 2007 that the gains made from the reduction in the corporate tax rate to 25 percent will be derailed by other forms of taxes.

The study on the effect corporate income tax on the financial performance of the manufacturing sector is important for at least two reasons. Firstly, a negative impact on manufacturing defeats governments' commitment to restore the past glory of the manufacturing sector. Secondly, a negative impact of tax on the manufacturing firms has implication for job creation and poverty alleviation.

2. Taxation of the manufacturing companies in Ghana

As discussed earlier, tax can be used as a tool for protecting certain vital aspects of the economy. Over the years, tax policies contain several provisions that seek to advance the interest of local manufacturers. The provisions include location reliefs, timing concessions and activity- specific tax rebates. Table 1 summarizes the incentives offered by the tax laws to ensure the sector re-bounces to its "former glory".

Table 1: Locational incentives for manufacturing businesses

Location	Tax rate
Location within Accra and Tema	25%
Location in regional capitals of Ghana	18.75%
Location in free zone enclave	0%
Location elsewhere in Ghana	12.5%

Source: Ghana Revenue Authority; 2012

Different concessionary rates are granted to manufacturing companies that engage in processing of agricultural products. The incentive is to enhance the development of the rural areas through industrialization. Table 2 provides details of these concessions.

Table 2: Locational incentives for Agro-processing businesses

Location of business	Tax rate
Location within Accra and Tema	20%
Location in regional capitals of Ghana: except the three northern regions	10%
The three northern regions	0%
Outside Regional Capitals	0%

Aside these locational incentives, manufacturing businesses are granted the opportunity to carryover losses from previous years for five years. This is expected to reduce the taxable income of manufacturing businesses.

3. Brief Review of Literature

This section presents the theoretical perspective of tax and empirical evidences from earlier researchers

3.1 Ability-to-pay approach theory

The ability-to-pay approach theory according to Akakpo (2009) is of the assertion that, taxes are based on taxpayers' ability to pay thus there is no *quid pro quo*. The underlying principle of this theory is that, taxes paid are seen as a sacrifice by taxpayers, which raise the issues of what the sacrifice of each taxpayer should be and how it should be measured. Based on this the theory has the following principle.

- *Equal sacrifice:* The implies that the total loss of utility as a result of taxation should be equal for all taxpayers so that those who can afford to pay higher taxes are made to pay higher than those who cannot afford
- *Equal proportional sacrifice:* The proportional loss of utility as a result of taxation should be equal for all taxpayers such that the payment of taxation should not deprive anybody of what he/she would have previously sacrificed.
- *Equal marginal sacrifice:* The instantaneous loss of utility this is measured by the derivative of the utility function as a result of taxation should be equivalent for all taxpayers. This will require the least collective sacrifice.

The current study evaluates the finding to assess whether the principles under the ability to pay theory is fully adhered to in the case of corporate taxation in Ghana.

3.2 Empirical review and development of hypothesis

For simplicity the visible development of the hypothesis, this section is subdivided into the empirical studies on the variables used for the study and financial performance.

3.2.1 Corporate income tax

Jens and Schwellnus (2008) examined the effects of corporate income taxes on two of the main drivers of growth, profitability and investment of firms in European OECD member countries over the time period of 1996-2004, through stratified sampling this is found to be true across firms of different size and age classes, except for young and small firms. The results suggest that corporate income taxes reduce investment through an increase in the user cost of capital. This may be partly explained by the negative profitability effects of corporate income taxes if there is an increase in the corporate tax rate.

Rohaya, Nor'Azem and Bardai, (2010) conducted a study on corporate income taxes and revealed an association between income tax and profitability of corporate institutions. The study related to the impact of corporate income tax liabilities on different variables of a firm as gross profit, cost of sales, expenses etc. A sample of 7,306 companies was taken from the hotels and restaurants sector, includes 6,594 in business services and 1,484 in transport manufacturing sectors, for the accounting periods 1995 to 2000. The conclusion was that corporate income tax adversely affects the profitability of corporate institutions but has a positive relationship with the firm size and age of companies. Apart from these authors, De Mooij et.al, (2001) and Meg (2008) all found a negative relationship between corporate taxation and financial performance therefore it is valid to develop a hypothesis that;

1. There is a negative association between corporate tax and financial performance of firms

3.2.2 Age

Age of the firm has used by researchers (Abor 2008, Amidu, 2007 and Scholes, Wilson & Wolfson, 1992) as a criterion for the measure of corporate income taxes that firms may have because as a firm ages, it institutes itself as a going concern and therefore increases its capacity to take on more debt making age positively related to debt. Based on this, the following hypothesis has been developed for the study.

2. There is positive association between financial performance and age of companies

3.2.3 Growth

Becker and Holmes (2010) analyze effect of taxation on both firms which are profitable and unprofitable. Investment, Tax, EBITDA, liquidity and firm growth were the main variables. They describe the events in which payout taxes has changed by three percentage points and compare the five years past tax change effect with two years following it. Research findings concluded that payout tax adjustment has an economically considerable adverse effect on allocation of the investment, profitability but has no relationship with the firm growth of the firms.

Based on the studies reviewed three hypothesis can be deduced these are

3. There is no relationship between the growth of the firms and their financial performance

3.2.4 Firm size

Jiang (2003) measured the effect of firm size on financial performance in the area of Information Technology (IT) evidenced from U.S.A based on firms listed on New York Stock Exchange. The secondary focuses of the study are first, the Measurement of firm size in terms of employees Ability to Adopt Technology. Secondly, Measure the firm Size in terms of employees Pace of learning new technology have also observed in this Paper. Seventeen North American Industry Classification System (NAICS) Based Industries have taken as Sample including Agriculture, Constructions, Manufacturing, Transportation and Wear housing, real estate and rental leasing, finance and insurance etc. Least Square Regression has been used to test the relationship among variables. The Result indicates that Firm Size has a significant positive correlation with firm performance. Salinger and Lawrence (1981), Fazzari et al (1987) and Kadapakkam (1998) all found a similar outcome in their respective studies. Based on this the hypothesis developed is

4. There is a positive relationship between firm size and financial performance corporate institutions

3.2.5 Liquidity

Kadapakkam (1998) examined the extent to which liquidity and Firm Size influence firm performance in 6 OECD (Organization for economic Cooperation and development) Countries. In particular, their paper aimed at analyzing the primary effect of Firm Size on reliance return on asset. Since there is general agreement that small firms have limited return on asset. Therefore, they should be more emphasized on internal investment. All the firms have been examined, regardless of size in Each Country. Multiple regression analysis has been used to test the relationship of Subject variables. The result findings show that Firm Size and liquidity has positive effects and highly sensitive relation with internal investments in all the countries. Again based on this literatures reviewed, an additional hypothesis can be developed which is

5. There is a positive relationship between liquidity and financial performance of corporate institutions

This study is supported by few researchers, which suggest that identification of successful source of funding for investment is necessary. Furthermore firm size can increase the size of return on asset but increase in corporate income tax ratio in an industry's specific sector usually but not infrequently reveals decline in return on asset which might affect the return on asset in various listed Manufacturing and service industries.

4. Methodology

The descriptive –causal research design was used for this study. To define the descriptive-causal type of research, Cooper and Schindler (2001) stated that the descriptive method of research is to gather information about the present existing condition while causal describes the causes and effect between two or more variables. The purposive sampling technique was used to purposely select 10 manufacturing firms listed on the Ghana stock exchange from the periods 2005 to 2012. The data was collected primarily from the financial statement of

the 10 listed manufacturing firms on the GSE between 2005 and 2012.With regards to the data analysis the panel data model was used with the Ordinary least square (OLS) been the method of regression. The use of the panel data methodology stems from the fact that the data involves cross section of 10 companies and time series of about 7 year.

In view of this the model is estimated as;

PERF =$^\beta$ α$_{i,t}$ +$^\beta$1(CIT)$_{i,t}$ +$^\beta$2(FS)$_{i,t}$ +$^\beta$3(AGE)$_{i,t}$+$^\beta$4(LIQ)$_{i,t}$ +$^\beta$5(GROWTH)$_{i,t}$+ε

Whereas;

α = (alpha) shows the constant effecting net profit margin on corporate tax

PERF = return on total asset which is measured as the ratio of net profit to total asset

CIT (Corporate income tax) = Income tax ÷ operating income x 100

FS (Firm Size)   = Natural log of firm's total sales revenue

AGE (Age of firms) = the difference between the year of establishment and years of observation

Liquidity = current asset / current liabilities × 100

GROWTH = (Previous Total asset – Current Total asset) ÷ Previous Total asset × 100

ε = Error Term

5. Results and Discussion

Table 3 provides the descriptive statistics of the variables used for the study and from the table the financial performance of the manufacturing companies had a average of 25.02% indicating that the performance of the companies are high and can be said the corporate tax principle in Ghana is in line with the ability to pay principle because after the payment of taxes the companies retain about 25% of their earning. The low standard deviation for all the variables also highlights the point that the variables are less risky in their application in he current study.

Table 3: Descriptive Statistics

	Mean	Std. Deviation	
PERF	.2502	.07484	
CIT	.2504	.04141	
AGE	1.4550	.30838	
GROWTH	.1219	.04883	
Firm size	.0939	.05231	
Liquidity	1.120	.02344	

Source: Financial statement of companies

The Table 4 highlights correlation that existence among each of the independent variable, which are corporate income tax, firms size, age of the firm, liquidity and the firm growth with the regressors that is return on asset. The table sought to determine whether there is the existence of multicolinearity among the variables before regression is conducted so that variable any with issues of multicolinearity is deducted from the regression equation.

Table 4. Persons Correlation Coefficient

		PERF	CIT	FS	AGE	LQ	GROWTH
PERF	Pearson Correlation	1					
	Sig. (2-tailed)						
CIT	Pearson Correlation	-.315**	1				
	Sig. (2-tailed)	.000					
FS	Pearson Correlation	.001	.204**	1			
	Sig. (2-tailed)	.985	.002				
AGE	Pearson Correlation	.233**	-.286**	-.567**	1		
	Sig. (2-tailed)	.001	.000	.000			
LIQ	Pearson Correlation	-.043	-.002	-.103	-.058	1	
	Sig. (2-tailed)	.521	.980	.127	.416		
GROWTH	Pearson Correlation	.220**	-.485**	-.226**	.188**	.421**	1
	Sig. (2-tailed)	.001	.000	.001	.008	.000	
**. Correlation is significant at the 0.01 level (2-tailed).							

The result establishes that return on asset has an inverse relationship with corporate income tax with a co-efficient of -0.315. This means that whenever tax burden on an entity increase it reduces the level of financial performance of the companies. Among the other variables liquidity indicated a negative relationship with firm performance. It implies that whenever the manufacturing companies increase their current asset (with the aim of improving on their liquidity), their performance reduces. This is especially the case where the increase in current asset is as a result of increasing trade receivables. Sales revenue is increased, tax obligation increases and this ultimately puts pressure on the entity's cash flow. In relation to the firm size the positive coefficient is in consonance with the studies of Rohaya et al (2010), and Becker et al (2010) but because it is not statistically significant much cannot be said about it.

Growth and age of the firms showed a positive association with coefficients of 0.233 and 0.220 respectively implying that an increase in the asset a size leads to an increment in profit simply because an addition of an efficient asset has the possible effect of increasing the volume of production hence increases the turnover of the company which will finally reflect in the earnings after corporate taxation. For the age of the firm as the company ages, the rule of thumb is that it becomes more acquainted to the regulations of the industry as well as the competition therefore develops strategic plans to halt the negative effect of those thing hence the results reflects positively in their financial performance. Therefore it is expected that, the age of the manufacturing companies could have a positive impact on their financial performance as depicted by table 4.

Table 5, explains that positive autocorrelation exists up to 5 lags as P-value is less than 5% significance level but it can be observed that at 6 lag there is no existence of Positive autocorrelation in the model.

Table 5; Durbin-Watson (Autocorrelation Test)

	1	2	3	4	5	6
DW **Pr<DW** **Pr>DW**	0.7932* (<.0001) (1.0000)	1.2726* (<.0001) (1.0000)	1.5719* (<.0001) (0.9999)	1.7027* (0.0060) (0.9940)	1.7903* (0.0480) (0.9520)	1.8507* (0.1432) (0.8568)

*Significance level at 5%

Further, consistent value accuracy correction of positive autocorrelation in the model has been done through "Cochrane- Orcutt" method and the corrected results up to 48 lags are shown in Table 6 which reveals that value of P>0.05 indicating removal of serial autocorrelation error from the model. Therefore, null hypothesis has been accepted as there is no positive autocorrelation exists in the Residuals.

Table 6: Cochrane-Orcutt Method (Corrected Auto correlation)

Modal-A				Up to Lags 6			
χ2	**12**	**18**	**24**	**30**	**36**	**42**	**48**
p-value df	0.85 (0.9736) 5	11.57 (0.3968) 11	15.56 (0.5555) 17	18.41 (0.7347) 23	25.41 (0.6566) 29	40.61 (0.2369) 35	46.69 (0.25) 41	63.6 (0.05) 47

5.1 Regression Result

Table 7 indicates the regression results of the study; the dependent variable was financial performance which was measured as the return on asset and the independent variables are corporate income tax (CIT), firm size, age of the companies, liquidity and the growth of the manufacturing companies. From Table 7, CIT has a negative relation with financial performance with coefficient of -0.417. This implies that as the manufacturing companies pay more tax their financial performance decrease and the reason could be that tax reduced the earnings levels of the companies. This is in consonance with results of Jens and Schwellnus (2008); Rohaya et al (2010) and Becker et al (2010)

Table 7: Regression analysis: Dependent Variable: ROA

Variable	Coefficient	P- Value	T-test
Constant	0.183	0.003	3.042
(CIT)	-0.419	0.025	-2.263
Firm Size	0.050	0.013	2.508
Age	0.424	0.001	3.331
Liquidity	-0.056	0.699	-0.388
Growth	0.167	0.011	2.678
R^2	0.6537		
Adjusted R^2	0.5623		
P – Value	0.0000		

Source: Financial statement, 2013

To effect a change in the reduction of GHS 0.419 in every GHS 1 made, manufacturing companies should engage in tax planning so that, the net effect of their tax contributions to government would not impact so much on their revenue generating activities. This can be done by taking full advantage of the manufacturing industry concessions which has been displayed in tables 1 and 2. From this back drop, the hypothesis that there is a negative relation between financial performance and corporate income tax is accepted because the p-value of 0.025 is far below the benchmark alpha of 0.05.

Firm size showed a positive relationship with financial performance having recorded a coefficient of 0.050 implying that the size of the manufacturing companies contributes about 5 percent to every GH 1 financial performance achieved by the companies. This because as the size of the companies increases they turn to implement strategies which leads to an increment in the markets share meaning that they sell to a wide spectrum. If this is the case then their financial performance would have to increase in the same proportion as their size. Again the relationship recorded a p-vale of 0.013 meaning that the relationship is statistically significant at 1percent meaning that the hypothesis that there is a positive relationship between firm size and financial performance is accepted.

With a coefficient of 0.424 and a significance level of 1 percent, and increase in the age of the manufacturing companies positively reflect on their financial performance such that the companies' increases their customer based and improve on their operational efficiencies to improve production as well sale which has its bearing on financial performance. From this back drop, the hypothesis that, the ages of the manufacturing companies have a positive impact on financial performance is accepted as it in line with the outcome of Rohaya et al (2010) and Beker et al (2010) and the ability to pay theory.

In relation to liquidity because the results showed an insignificant relation with financial performance, the hypothesis of a positive relation between liquidity and financial performance is rejected because the alpha of 0.699 is far above benchmark alpha of 0.05. This signals inconsistency with the studies of Kadapkkam (1998). The growth of the manufacturing companies shows a positive relationship meaning that the growth of companies reflects in their financial performance. With a coefficient of 0.167 and a p-value of 0.011, the hypothesis which states a positive relationship with financial performance is accepted. From the foregoing discussions, the final model estimation from the regression analysis is stated as;

PERF = 0.183–0.419 (CIT) + 0.050 (FS)+0.424(AGE)+ 0.167(GROWTH) + e

The above regression model showing the value of constant is 0.183, indicating that when corporate income tax and firm size values become zero the value of performance will be remain 18.3 percent. The constant value does lies between its upper and lower confidence intervals revealing its significance. Here, p-value 3 percent associated with constant is significant which is witnessed by its P-value is less than 5% significance level.

The value of R^2 for the predictors (corporate income tax, firm size, age, liquidity and growth of the firms) is 65.37. Corporate income tax, firm size, age, liquidity and growth are predicting return on asset by 65%, which reflects the overall strength of association in the Regression model. Adjusted R^2 suggests an additional predictor for the model. Here its value occurs 56% and $P<0.05$. It reveals that there is no immediate need of an additional independent variable as corporate income tax, firm size, age; liquidity and growth are good enough for explaining the variation in financial performance.

6. Conclusion

The current study focused on exploring the relationship between corporate tax and financial performance. The study covered 10 manufacturing companies for a period of 7 years spanning from 2005 to 2012. The descriptive - causal research design was employed with the panel data methodology as the analysis method. The study has found that, there is a significant negative relation exist between corporate income tax and financial performance on the other hand firms' size, age of the firm, growth of the firm shows a significant positive relationship with financial performance. From this backdrop it is recommended that manufacturing companies should employ the services of tax experts to aid them in tax planning in other to reduce the net tax payment so as to increase their financial performance. Again they should increase their asset size and ensure efficient use of those assets to reflect in the production turnover of the companies.

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