

# Ownership Structure, Corporate Governance and Agency Cost of Manufacturing Companies in Nigeria

EBOIYEHI OSAZEMEN CHINELO<sup>1\*</sup> WILLI IYIEGBUNIWE<sup>2</sup>

1.Department of Banking and Finance, University of Benin, Benin city

2.Department of Finance, University of Lagos, Lagos

## Abstract

The article investigates the role of ownership structure and corporate governance in mitigating agency cost in manufacturing firms listed on the Nigerian Stock Exchange during the period 2007 to 2017. We used the proxy agency cost index to measure agency cost. This is based on the argument that agency cost can be seen via inefficient asset utilization (because of poor investments), excessive production costs and wasteful managerial behaviour (resulting in higher expenses), and insufficient effort exerted by management (resulting in lower revenues and earnings). Multivariate fixed effect regression is used to analyse the data. Explanatory variables consist of governance and ownership related attributes such as managerial ownership, ownership concentration, board size, director's remuneration and board independence. We also used free cash flow, leverage and operating expenses as control variables. The results show that higher managerial ownership, operating expense and free cash flow had significant influence on agency cost.

**Keywords:** Agency cost, corporate governance, ownership structure, Manufacturing.

## 1. Introduction

Agency problem is gradually becoming indigenous in our present-day corporation. This is due to expansion of businesses and the need for these businesses to be separate from their owners. These agents and the principals have different personal interests, therefore, their business relationship may generate in agency problem. There are various forms of business organisation and each organisation is faced with varying forms of agency problem. In a sole proprietorship, the proprietor performs dual roles, as an owner and as a manager. He is directly involved in the profit maximization activities for his or her interest and may encounter conflict with his/ her suppliers or debtors. However, in other forms of business organisations, the ownership and control are separated and the managers' self-interest may lead to agency problem between managers and owners. Jensen and Meckling (1976); Shleifer and Vishny (1997) state that agency problems arise when the shareholders of a corporate organization (the principal) employs a professional manager (the agent) and thereby separates the business owner(s) from the control of the business. This gives rise to agency cost. Agency costs can manifest in various forms, including greed on the part of managers focused on status or empire-building objectives, excessive fringe benefits, non-optimal investment decision, mismanagement or corporate fraud (Henry, 2004). Tirole (2006) buttressed this suggesting two important manifestations of agency problems: (1) inefficient investment choices, which could include the redirection of resources for personal consumption, and, (2) inefficient or insufficient effort being expended by managers. The costs that arise as a result of these inefficiencies are generally referred to as agency costs. The implications of these actions by managers are seen in the form of shareholders wealth destruction and may impact severely on other stakeholders, such as debt providers, employees and the general public. The shareholders however, have a big challenge in getting the managers to act in their interest because they are most likely going to act in their own interest.

Due to the conflict of interest experienced between the agents and the principals, and to mitigate the agency problem and cost, corporate governance mechanisms are put in place to protect shareholders interests and ensure order in the organisation. When corporate governance is effective, it provides managers with oversight and holds boards and managers accountable in their management of corporate assets. Effective corporate governance, is closely related to efforts to reduce corruption in business dealings and make it difficult for corrupt practices to develop and take root in a company. Corporate governance may not prevent corruption, but may make it more likely that corrupt practices are discovered early and eliminated (Ijeoma & Ezejiofor, 2013). Corporate governance in addition, provides sweeteners for the board and management to pursue business goals which are in the best interest of the shareholders and provide the framework which govern the relationship among them (Coles, Daniel, & Naveen, 2008; Boone, Field, Karpoff, & Raheja, 2007).

Studies have been done examining agency costs, ownership structure and corporate governance mechanisms. Ang, Cole and Lin (2000) examined agency cost and ownership using small businesses in America and found that agency cost are higher when the firm has outsider managers and agency cost varies inversely with the manager's ownership share. Singh and Davidson (2003) went further using Ang, Cole and Lin (2000) approach but extended it to large publicly traded corporations in America. Using slightly different measures of agency costs, and controlling for ownership structure and governance mechanism differences across firms, they also found that higher inside ownership aligns managerial and shareholders' interests and lowers the agency

costs in large corporations. Fleming, Heaney and McCosker (2005) studied small businesses in Australia following Ang, Cole and Lin (2000) approach, they found a positive relationship between equity agency costs and the separation of ownership and control. Florackis and Ozkan (2004) studied large sample UK listed firms using Ang, Cole and Lin (2000) approach as well as Signh & Davidson (2003) measure of agency costs and found that managerial ownership, managerial compensation and ownership concentration are strongly associated with agency costs and the impact exerted by specific internal governance mechanisms on agency costs varies with firms' growth opportunities. Gogineni, Linn & Yadav (2013) using a different approach measured agency costs as an index. They found that agency costs due to inefficiencies emerged from the vertical (ownership versus control) and horizontal (majority versus minority) relationships. They added that agency costs increases as firms move from a single owner/single manager ownership structure to more complicated ownership structures. Within each ownership structure, agency costs are significantly higher when firms are not managed by owners and that agency costs are lower in firms with shared ownership control. As a developing economy, Nigeria's corporate governance practices are likely to be different from those of developed economies.

The purpose of this article is to evaluate the effectiveness of mechanisms related to governance and structure of ownership in minimizing or controlling the costs that arise from agency problem within a sample of manufacturing companies listed on the Nigerian Stock Exchange, during 2007 to 2015.

## **2. Literature Review**

### **2.1. Agency Theory and Agency Cost**

Berle and Means (1932) laid the foundation for the agency theory (Cheffins & Bank (2009). They suggested the separation of ownership and control from the owners. Various scholars (Jensen & Meckling, 1976; Fama, 1980) have contributed to the agency theory, Jensen and Meckling (1976) are regarded proponents of the agency theory. Jensen and Meckling, (1976) defined agency relationship as a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent. The cornerstone of the agency theory is based on the assumption that principals' and agents' interest are divergent. However, Mitnick (2015) states that the agency theory seeks to understand the problems created when one party, the agent, is acting for another, the principal. In order for the principal to control the agent, agency costs are incurred. Jensen and Meckling (1976) defined agency costs as the sum of the monitoring expenditures by the principal, the bonding expenditures by the agent and the residual loss.

Monitoring costs are expenditures incurred when the principals attempt to oversee or restrict the action of agents. For example, the board of directors of a company acts on behalf of shareholders to monitor and restrict the activities of management to ensure behaviour that maximizes shareholder value. The cost of having a board of directors is therefore, at least to some extent, considered an agency monitoring cost (Wilkinson, 2013). Bonding costs refer to the structures that management ultimately sets up to compel them to act in shareholders' best interests and includes compensating shareholders in the event of failure to act as such. While residual loss refers to residual agency losses that arise from conflicts of interest after both monitoring and bonding measures have been effected (Baker & Anderson, 2010). According to Baker and Powell (2005) there are two types of agency costs, direct and indirect agency cost. Shareholder incur direct costs in order to reduce potential conflicts with managers (bonus, stock option plan, audit fees, managerial incentives and infrastructure) put in place to control the behaviour of managers. Indirect agency cost is as a result of manager's failure to make profitable investment. The significance of agency cost is that it helps mitigate the effects of the agency problem.

The adverse effects of these actions are felt in the form of the destruction of shareholder wealth and have a wider impact on other corporate stakeholders. The realization of the consequences flowing from the incidence of agency problems have led to emphasis being placed on the importance of competitive remuneration for managerial labour, corporate control as monitoring mechanisms designed to limit the degree of agency divergence.

### **2.2. Agency Problem in Private or Public businesses**

A private limited liability business is a legal entity that is separate from those who own it. As a shareholder of a private limited company, the shareholders personal possessions remain separate (unless they are secured against the business for borrowing), and the shareholders risk is reduced to only the money they have invested in the company and any shares the shareholder holds which has not been paid for. A public limited company differs from the private version in that it is able to sell its shares to the public and may be quoted in the stock exchange. Studies show that publicly traded firms are different from private firms in several aspects, including ownership structure, and governance mechanism (Ball & Shivakumar, 2005; Chen, Hope, Li & Wang, 2011). In public firms, ownership and control must be separated as outside investors, who are not interested in management of the firms, hold majority of the company's shares. In this case, an agency problem can arise due to information asymmetry between the outside investors and managers (Jensen & Meckling, 1976). On the contrary, private

firms are more likely to resolve the agency problem because the major investors, who often manage their own firms, have access to internal corporate information (Ball & Shivakumar, 2005; Burgstahler, Hail & Leuz, 2006; Chen, Hope, Li & Wang, 2011) and have concentrated ownership, leading to higher monitoring of the top management by the owners, compared to public firms (Ball & Shivakumar, 2005; Chen et al., 2011).

### **2.3. Corporate Governance**

Corporate governance deals precisely with conflict of interests, designs ways to prevent corporate misconduct and aligns the interests of stakeholders using incentives and monitoring mechanisms (Kung & Munyua, 2016). It is also a key factor in determining the health of any organization. The corporate governance structure specifies the distribution of rights and responsibilities among different participants in the corporation, such as, the board, the managers, shareholders and other stakeholders and spells out the rules and procedures for making decisions on corporate affairs (Rezaee, 2009). Good corporate governance can occur in the organizations by putting the balance between the ownership and control and also among the interests of stakeholders of the firm. The efficiency of corporate governance mechanisms associated with publicly listed companies is the subject of extensive ongoing research in the literature (McKnight & Weir 2009; Singh & Davidson 2001).

### **2.4. Agency Cost and Board Independence**

Board of directors are considered essential in any organisation because of the role they play in monitoring management and is perceived as to also play an important role in limiting or controlling agency problem (Fama & Jensen, 1983; Jensen, 1993). The effectiveness of a board as a corporate governance mechanism depends on its size and composition. Large boards are usually more powerful than small boards and, hence, considered necessary for organizational effectiveness (Gul, Sajid, Razzaq, & Afzal (2012). Henry (2004) concluded that agency costs is lower in boards that have a larger number of independent directors than a small board. On the contrary however, McKnight and Weir (2009) argued that board independence have had little or no effect on agency costs in the UK. While Hermalin and Weisbach (1991), Agrawal and Knoeber (1996) suggested that board independence does not mitigate agency costs. Furthermore, Ang et al. (2000), Singh and Davidson (2003) also support their argument stating that independence has no significant influence on agency costs.

### **2.5. Agency Costs and Board Size**

Board size plays an essential role in every organisation. The board of directors helps in disciplining and controlling the activities of the CEO and the management. It also create linkage between the external parties and the firm, gain access to resources in terms of materials, human power, networking and so on (Nguyen, 2016). A larger board comprise of a wide range of expertise who contribute to make better decisions for a firm as the CEO cannot dominate a bigger board. The collective strength of its members is higher and can resist the irrational decisions of a CEO (Pfeffer, 1972; Zahra & Pearce, 1989). This however, results in agency cost amongst the members. On the other hand, small boards are more efficient in decision-making because there is less agency cost among the board members (Yermack, 1996). Kamyabi, Majbouri and Ashae (2014) in a study on the impact of corporate governance and ownership structure on agency cost in listed companies of Tehran stock exchange revealed that there is a negative and significant relationship between agency cost and board size. Gill, et al. (2012) in their study of public listed companies in Malaysia found that larger board size has a significant effect as a device in mitigating agency cost and has a positive impact on the investment decisions of the firm. Ang et al. (2000), Singh and Davidson (2003) also affirmed the claim. However, Siregar, Sembel, and Maulana (2015) argued that a larger board reduces the level of agency cost and their presence effectively reduced agency cost incurred in agro-industrial firms in Indonesia.

### **2.6. Agency costs and Director's Remuneration**

A major component of corporate governance is the remuneration that is provided to managers of a firm. Studies by Core & Guay (2001); Murphy (1999) conclude that, given the information asymmetry between managers and shareholders, compensation contracts can motivate managers to take actions that maximize shareholders' wealth. However, director's remuneration is considered to be a debated component of corporate governance. The literature generally suggests that better remuneration may mitigate agency's problem (Jensen and Meckling, 1976; Andreas, Rapp, & Wolff, 2012) and achieve better performance (Cheng and Firth, 2006). The existence of problems in an agency is often because of dissimilar interests between the board of directors, which has the intention of increasing their personal wealth, and the shareholders, whose objective is to maximize shareholder wealth (Jensen and Meckling, 1976, Fama and Jensen, 1983, Fama, 1980). A manager who is satisfied with his compensation package will be less likely, *ceteris paribus*, to utilize insufficient effort or perform expropriation behaviour and, hence, risk the loss of his job. However, agency theory suggests that an optimal contract drives the motivation and willingness of the board of directors to work for the shareholders' interests (Bebchuk and Fried, 2003). In contrast, (Henry, 2010) documented that remuneration structure mechanism has a negative

influence on agency cost. Monitoring through an engaged and freewheeling boards of directors notify that managers enact in the shareholders best interest (Fama & Jensen, 1983).

### **2.7. Agency Cost and Ownership concentration**

Shareholders have the capacity to actively monitor the managers. However, they are limited to their individual stake in the company (Grossman & Hart, 1988), shareholders with low proportion of ownership has little or no incentives to exert monitoring function. However, shareholders with higher amounts of ownership have a stronger incentive to monitor and protect their investment (Shleifer & Vishny, 1997; Friend & Lang, 1988). Large shareholders may also prevent the possibility of a takeover bid, make managers to feel safer about their positions, hence corporate governance may help in the reduction of agency problems associated with managers (Shleifer & Vishny, 1986; Bukart, 1995).

Florackis (2008) in a study of UK companies concluded stating that ownership concentration is also positively related to asset turnover and that ownership concentration seem to play an important role in mitigating agency costs in the UK. However, the existence of concentrated holdings may decrease diversification, market liquidation and stock's ability to grow and, therefore, may increase the incentives of large shareholders to expropriate firm's resources (Beiner, Drobetz, Schmid, & Zimmermann, 2006).

### **2.8. Agency cost and Managerial Ownership**

Managers play an important role in improving the value of a firm. They reduce agency cost by decreasing the information asymmetry, which results in improving the value of a firm (Monks & Minow, 2001). Managers in some developed markets create agency cost by under or over investment of the free cash flow (Guariglia, & Yang, 2016). Rashid (2008) states that appreciation and bonuses for managers motivate them to produce value for shareholders. Kamyabi, Majbouri and Ashae (2014) in a study on the impact of corporate governance and ownership structure on agency cost in listed companies of Tehran stock exchange revealed that there is a negative and significant relationship between agency cost and managerial ownership. On the other hand, Ang, Cole and Lin's (2000) study of small corporations found that agency costs are significantly higher when an outsider rather than an insider manager manages the firm, are inversely related to the managers' ownership share and increase with the number of non-managers shareholders. Gul et al. (2012); Locke and Fauzi (2012), and Mcknight and Weir (2009) also found that managerial ownership reduces agency costs. On the contrary Wang, Lu, & He (2010) they find that managerial ownership has no effect on agency cost.

### **2.9. Agency Cost and debt financing**

Jensen (1986) argued that debt servicing helps discipline managers by reducing the amount of free cash flow they have at their disposal. Managers with excess cash flow have the option to either pay out cash as dividend or retain the cash for investments in low-return projects. This situation creates conflict between the managers and the shareholders. According to Jensen (1986) this conflict can be managed by issuing debt. Ang, Cole and Lin (2000) using small business firms in America demonstrated that agency cost decreases with external monitoring by institutional investors (banks). This in turn puts pressure on the managers to run the business efficiently and profitably and report the real picture of business to such financial institution investors. Hua, Yun-zhe and Dong-ping (2010) examined the effect of level of debt financing on agency cost, they find a significant relation between leverage ratio and administrative expense ratio and total asset ratio. However, they also find a negative relationship between debt-to-asset ratio and administrative expense ratio. Li and Cui (2003) tested the impact of capital structure on agency costs. They argued that debt decreases agency cost as the creditors of the firm are more concerned about principal and interest payments. These creditors more often monitor the activities of the manager to protect firms from becoming bankrupt. Nazir, Saita and Nawaz (2012) examined the effect of financial leverage on agency cost of non-financial Pakistani companies over the period of 2004 to 2009. Their results showed that debt reduces agency cost and total debt and short term debt were positively related to asset utilization. Javid, and Javid (2017) supported this stating that leverage can also be considered as appliance and mechanism geared at reducing the effect of agency cost and Stock-holders interests are protected in the firms.

However, Zhang and Li (2008) explored the impact of leverage on agency cost for 323 UK firms. Their results confirmed that agency cost is negatively related to leverage. However, when the capital structure comprised sufficient high level of leverage, the results of univariate analysis showed opposite (positive) but non-significant relationship between leverage and agency cost. As debt increases, the monitoring cost of organization decreases because managers are more vigilant due to close monitoring by banks (Mustapha & Ahmad, 2011).

## **3. Research Methods**

The target population for this study is manufacturing companies listed on the Nigerian Stock Exchange over the period 2007 to 2015. The choice of the period was informed by the prominent corporate governance issues, the persistent decline in share value, economic boom, financial crisis and destabilization of the economy. The

manufacturing sector was chosen because they use a lot of long term capital and need a lot resources compared to other sectors.

### 3.1. Sample filtering

Total number of listed companies on the NSE as at 31 December 2015	175
Less Financial firms (Banks, Insurance and others)	(58)
Less companies that are not manufacturing	(53)
Less manufacturing companies with incomplete records	(7)
Total number of companies to be used	<u>57</u>

### 3.2. Data and Data Collection Method

Secondary annual data of manufacturing firms listed from 2007 to 2015 was used in this study. Data was collected from the financial statements of these companies as at 31st December 2015. Ownership, corporate governance, agency costs data were be obtained from the annual reports and accounts of these firms. To estimate the effects of the explanatory variables on agency costs, three estimation models were be used, pooled ordinary least squares (OLS), the random effects, and the fixed effects. We used the Hausman (1978) to determine if the random effect would be included to the results of the fixed effect.

### 3.3. Operationalization of Variables

#### Dependent (Explained) Variable (Agency costs).

To measure agency cost, we used Tirole (1986) and Gogineni, Linn & Yadav (2013) definitions of agency costs. They argued that agency cost measures should consider; inefficient asset utilization (because of poor investments), excessive production costs and wasteful managerial behaviour (resulting in higher expenses), and insufficient effort exerted by management (resulting in lower revenues and earnings). The agency cost measures used in this paper reflect these deficiencies as noted by them. We measured efficiency using the asset turnover ratio defined as the ratio of sales to assets, which reflects how management uses the assets under its control for revenue generation (Ang, Cole and Lin 2000; Singh and Davidson III 2003; Gogineni, Linn & Yadav, 2013). We measured production cost efficiency using operating expenses divided by sales (Ang, Cole and Lin 2000; Nagar, Petroni and Wolfenzon 2010, Gogineni, Linn & Yadav, 2013). The ratio of earnings before interest, taxes and depreciation to total assets was used to capture aggregate efficiency of managerial efforts (Gogineni, Linn & Yadav, 2013). To obtain an absolute value, we calculated an index of agency costs using principal component analysis (PCA). Principal component analysis (PCA) is a multivariate technique that analyses a data set in which observations are described by several inter-correlated quantitative dependent variables. Its goal is to extract the important information from the data set, to represent it as a set of new orthogonal variables called principal components. These measures serve as our index of agency costs (ACI), a high score suggest high agency cost while a lower score suggest low agency cost (Gogineni, Linn & Yadav, 2013).

#### Explanatory Variables

The explanatory variables are separated into three groups, relating to corporate governance, ownership structure variables and control variables

#### Board Independence

Board Independence is the number of independent directors serving on the board of a firm. Following Henry (2010); Gul, Sajid, Razzaq & Afzal (2012), we measure board independence as the number of non-executive directors divided by total board members.

#### Board Size

Board size is the total number of individuals on the board. Following (Gill, et al. 2012; Siregar, Sembel & Maulana, 2015) we measure board size by total number of directors on the board.

#### Director's Remuneration

Director's remuneration is defined as the total benefit accrued to all executives. Similar to Gul, Sajid, Razzaq & Afzal (2012) we measure director's remuneration using the natural log of the sum of total annual benefits paid to all members of the board.

#### Managerial Ownership

Managerial ownership consist of executive shareholding in the company. Locke and Fauzi (2012); Javaid, & Javid (2017) measured managerial ownership as ratio of shares held by management to total number shares issued. However, we measure managerial ownership as board of director's shares /outstanding shares.

#### Ownership concentration

Ownership concentration consist of shares held by a large group of shareholders usually above 5%. Mir & Nishat, (2004) and measured ownership concentration as the percentage of total stock held by majority shareholders. We measure ownership concentration as 5% or more held by shareholders.

## Control variables

### Debt financing

Leverage may be related to agency costs in large firms. Javid, & Javid (2017) measured leverage as total liabilities divided by total assets. We measured it as Non-Current Liabilities/Equity. Leverage is used as a bonding device and the fixed committed debt repayments constrain management's access to cash (Grossman & Hart, 1982; Jensen, 1986).

### Free Cash flow

Free cash flow represents the cash that a company is able to generate after spending the money required to maintain or expand its asset base. That is, the excess of funds needed for all projects which have positive net present value (Jensen, 1986). It has been posited as the main variable to determine the level of agency costs (Kargar, & Ahmadi, 2013). A higher free cash flow would lead to a higher agency costs while a lower free cash flow would lead to a lower agency costs. This is because in situations where a firm has a large amount of free cash flow, the managers can invest the excess funds in various opportunities which may or may not be in the interest of the shareholders but rather for their own benefit. We use free cash flow as a control variable to control or eliminate any interference between agency costs and our independent variables. Free cash flow is derived as cash flow from operation minus capital expenditure and then divided by total assets.

### Operating Expense

Operating expense is an expense a business incurs through its normal business operations. These may include rent, equipment, inventory costs, marketing, payroll, insurance and funds for research and development. A higher operating expense suggest that a company may be exposed to agency cost risk because operating expense comprises of various costs which the managers may manipulate in their favour via varying relevant and irrelevant expenditures. We use operating expense as a control variable to eliminate any interference between agency costs and our independent variables. It is calculated by as the log of operating expense.

## 3.4. Model

To test the relationship between governance, ownership structure, and agency cost the following model was utilized:

$$AGENCYINDEX_{it} = \alpha + \beta_1 \sum CG_{it} + \beta_2 \sum OWN_{it} + \beta_3 \sum CONTROL_{it} + \varepsilon_{it} \quad (1)$$

Where Agency index is Agency cost index, CG is Corporate governance variables, OWN is Ownership structure variables, Control is Control variables,  $\varepsilon$  is Error term

$$ACI_{it} = \alpha + \beta_1(BINDEP_{it}) + \beta_2(BSIZE_{it}) + \beta_3(DREM_{it}) + \beta_4(MANOWN_{it}) + \beta_5(OWNCON_{it}) + \beta_6(LEV_{it}) + \beta_7(FCF_{it}) + \beta_8(LOGOPEX_{it}) + \varepsilon_{it} \quad (2)$$

Table 1: Description and expected signs of the variables

Name	Symbol	A prior Expectation
Agency cost index	ACI	+
Board Independence	BINDEP	+
Board Size	BSIZE	+
Director's Remuneration	DREM	+
Managerial Ownership	MANOWN	+
Ownership Concentration	OWNCON	+
Leverage	LEV	+
Free cash flow	FCF	+
Log of operating expense	LOGOPEX	+

## 3.5. Statistical procedure

In order to test the research hypotheses, Panel data analysis is used. The panel data helps control for heteroskedasticity. The panel data analysis consist of the OLS, RE (Random Effect) and FE (Fixed Effect) methods. They are econometric techniques that combines both time dimension and cross section dimension in order to produce accurate result (Wooldridge, 2002). To decide whether RE (Random Effect) is more precise or FE (Fixed Effect) for a particular panel data, Hausman test is used. If the Hausman test is significant then FE is more appropriate but if this test is insignificant then it reveals that RE is more precise for a particular data set (Saleh et al, 2008). In addition, descriptive statistics, correlation test and VIF test were estimated.

## 3.6. Analysis and Results

### Descriptive Statistics

Table 2 shows the descriptive statistics for eight explanatory variables agency costs index. The descriptive statistics include the median, mean, standard deviation, minimum and maximum values. The mean value of ACI

variable is -0.046, with its standard deviation as 1.155. The percentage of the agency cost index is -4.6%. While the minimum and maximum value are -7.266 and 3.315 respectively. The OWNCON variable has a mean value of 58.270 and standard deviation of 20.822. These result means that manufacturing companies in Nigeria have very concentrated ownership, more than 58.27% of total shares owned by majority while the minimum to maximum shareholding by majority shareholders are 5% and 89% respectively. The MANOWN variable has a mean value of 11.499 with a standard deviation of 18.676. It means that about 11.499% of the total shares in the company are owned by managers while the minimum to maximum shareholding by managers are 0 and 84.44% respectively. The BSIZE variable has a mean value of 9 with a standard deviation of 2.159. This means that the average size of the board members is 9 persons while the board size ranges from 4 to 17 persons. The BINDEP variable has a mean of 64.1% with a standard deviation of 0.159. This means that board independence of companies consist of 6 persons while the board ranges from 0 to 100% as compared with the board size. The DREM variable has a mean of 4.507 with a standard deviation of 0.639. This means the average director's remuneration is ₦ 4.57 million while the average remuneration of the companies ranges from 2.620 to 6.190 million naira. The LEV variable has a mean of 59.596 with a standard deviation of 26.582. This means the companies financing is about 59.6 % by debt which is expected because they require a lot of capital intensive assets to run the business while the minimum to maximum ratios spent as debt ranges from -159.380 to 186.700 debt to equity. The FCF variable has a mean of 0.074 with a standard deviation of 0.293. This means the ratio of free cash flow to asset is about 7.4%. While the minimum value of FCF is -0.720, the maximum value is 2.73. The negative values of minimum free cash flow shows that the manufacturing firm are making large investment in assets. The LOGOPEX variable has a mean of 6.213 with a standard deviation of 0.768. This means that average operating expense spent is ₦ 6.213 million while the minimum to maximum values spent as operating expense ranges from 4.560 to 8.440 million naira. The table also shows that board independence is dispersed by 0.159 from its mean while leverage is widely dispersed by about 26.582 from its mean.

Table 2: Descriptive Statistics.

Variables	Symbol	Mean	Median	SD	MIN	MAX
Agency Costs Index	ACI	-0.046	0.074	1.155	-7.266	3.315
Ownership concentration	OWNCON	53.270	60.000	20.822	5.000	89.000
Managerial ownership	MANOWN	11.499	1.040	18.676	0.000	84.440
Board Size	BSIZE	9.098	9.000	2.159	4.000	17.000
Board Independence	BINDEP	0.641	0.640	0.159	0.000	1.000
Director's Remuneration	DREM	4.507	4.530	0.639	2.620	6.190
Leverage	LEV	59.596	58.280	26.582	-159.380	186.700
Free Cash Flow	FCF	0.074	0.060	0.293	-0.720	2.730
Operating Expense	LOGOPEX	6.213	6.160	0.768	4.560	8.440

SD= Standard deviation, Min- Minimum Max- Maximum Source: Authors's Computation and EView 9 Output

Table 3 presents the correlation matrix. To examine the existence of correlation among variables, we use Pearson's co-efficient of correlation. The result revealed that there is a negative correlation between BSIZE, FCF, LEV, LOGOPEX, OWNCON and AGENCY INDEX while there is a positive correlation between BINDEP, DREM, MANOWN and AGENCY INDEX

Table 3: Correlation Matrix

	AGENCY INDEX	BINDEP	BSIZE	DREM	FCF	LEV	LOGOPEX	MANOWN	OWNCON
AGENCY INDEX	1.000								
BINDEP	0.093	1.000							
BSIZE	-0.012	0.093	1.000						
DREM	0.052	-0.179	0.327	1.000					
FCF	-0.232	-0.083	-0.026	0.050	1.000				
LEV	-0.189	-0.151	-0.060	0.020	-0.288	1.000			
LOGOPEX	-0.090	-0.123	0.520	0.761	0.057	0.040	1.000		
MANOWN	0.161	0.064	-0.167	-0.144	0.004	-0.068	-0.185	1.000	
OWNCON	-0.228	-0.081	-0.129	-0.037	0.026	0.097	0.055	-0.166	1.000

Source: Authors's Computation and EView 9 Output

To test for multicollinearity, the Variance Inflation Factor (VIF) test is used. Table 4 shows that none of the variables exceeded the bench mark 10, with the highest VIF being 2.514 and the lowest being 1.084. The mean VIF is 1.59 which is also less than the benchmark. These values indicate that the model is free from the problem of multicollinearity.

Table 4: Variance Inflation Factor

Variables	BSIZE	BINDEP	DREM	OWNCON	MANOWN	FCF	LEV	LOGOPEX
VIF	1.526	1.103	2.514	1.106	1.084	1.122	1.151	3.118

Source: Authors's Computation and EView 9 Output

#### Hausman Test

Table 5 depicts the results of the Hausman Test. According to the Hausman Test, if the p-value is small (less than 0.05), reject the null hypothesis. This implies that the null hypothesis which is random effect is desirable is rejected and the alternative hypothesis, fixed effect is desirable is accepted. Hence, fixed effect result is appropriate and thus reported.

Table 5: Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	36.0395	8	0.0000

Source: Authors's Computation and EView 9 Output

#### 4. Regression Results

Breusch-Pagan and Wooldridge tests indicate that the data suffer from both heteroskedasticity and autocorrelation respectively. Hence, the use of pooled OLS regression may lead to misleading inferences and inefficient coefficient estimates. The results of fixed effect multivariate regression analysis are presented in table 6, with agency costs as the dependent variable and ownership and corporate governance variables as the independent variable. The model as a whole is significant in explaining the variation in the dependent variable. The R-square is 0.802 which means that the eight independent variables explain 80% variation in the dependent variable agency cost.

The result shows that managerial ownership and corporate governance have strong positive and significant relationship with agency cost. The reason could be that the higher the managerial shareholding in the company the closer their wealth and decision making interest is aligned with that of company's shareholders. This is similar to Ang, Cole and Lin (2000) findings that decision making interest is aligned with that of company's shareholders. Thus higher managerial ownership reduces agency costs result (Gul et al. 2012; Locke & Fauzi, 2012). Our result is against the findings of Singh & Davidson (2003); Nahandi, Hasanzadeh & Sharifzadeh (2012) who found that managerial ownership has negative association with agency cost. However ownership concentration has a positive relationship but has insignificant influence on agency cost. The result is similar to that found by Darren Henry (2010) while taking asset utilization ratio as the dependent variable (Singh and Davidson, 2003) when agency costs is measured in terms of discretionary expense ratio and asset utilization ratio. However, Kung and Munyua (2016) found a significant and positive relationship between ownership concentration and agency costs. The existence of concentrated holdings may decrease diversification, market liquidation and stock's ability to grow and, therefore, may increase the incentives of large shareholders to expropriate firm's resources (Beiner et al., 2006).

As for the variables related to corporate governance are concerned, they have no significant influence on the agency cost index. Board size is negatively related and insignificant to agency cost. This is similar to the findings of Ang et al. (2000); Singh & Davidson (2003) and Kamyabi, Majbourni and Ashae (2014). This however negates the findings of Yermack, (1996); Florackis and Ozkan (2004) who found that irrespective of the board size, they are very efficient in decision-making and mitigate agency costs. Our result showed that board independence is negatively related and insignificant to agency cost. This is similar to Ang et al. (2000), Singh and Davidson (2003) and Ibrahim and Abdul Samad (2006) who concluded that independent directors does not have influence on agency cost. However, Gul et al. (2012) believes that firms with larger number of independent directors will have lower agency costs because independent directors have a significant impact on the performance of the firm. Independent directors are not only protecting the interest of shareholders but also monitor decision making of management so as to mitigate the agency conflict between control and management. Director's remuneration from our result shows that it has no relationship with agency cost. This is similar to Henry (2010) who found that director's remuneration has a negative influence on agency cost, adding that steeper remuneration structure does not mitigate agency cost. However, Yegon, Sang, & Kirui (2014); Gul et al. (2012) posited that remuneration of board of directors has positive relation with agency cost, which means that higher pay to managers results in raising firm performance and reducing agency cost.

Our control variables used in the study show that free cash flow though negatively related to agency cost has a significant influence on agency cost. It is an indication that when free cash flow is in excess, agency cost reduces and vice versa. However, theory states that as free cash flow increases, agency cost increases (Jensen, 1986). The reason may be as described by Fama and French (2007) that the managers tend to invest lavishly when they have excess cash and hence they purchase assets beyond their need. Leverage from our results shows that there is a positive relationship with agency cost but is insignificant. This is similar to Zhang and Li's (2008)



findings when a company uses high level of leverage. Their results showed a positive but non-significant relationship between leverage and agency cost. As debt increases, the monitoring cost of organization decreases because managers are more vigilant due to close monitoring by banks (Mustapha & Ahmad, 2011). Finally, our result shows that operating expense is positively related to and influences agency cost. This means as operating expenses increases, agency costs increases. This can be explained, with the recent corporate governance issues, which suggest that some managers assign unexplained amounts in form of expenses for projects or businesses that do not benefit the organisation.

Table 6: Regression Results

Variable	Coefficient	t-Statistic	Prob.
C	-2.8175	-3.4622	0.0006
BSIZE	-0.0139	-0.6540	0.5135
BINDEP	-0.0536	-0.2231	0.8236
DREM	-0.2009	-1.7315	0.0842
OWNCON	0.0054	1.5911	0.1124
MANOWN	0.0063	2.4826	0.0135
FCF	-0.7734	-7.2513	0.0000
LEV	0.0021	1.3630	0.1737
LOGOPEX	0.5490	3.5288	0.0005
R-squared	0.8020		
Adjusted R-squared	0.7680		
F-statistic	23.5477		
Prob (F-statistic)	0.0000		

Source: Authors's Computation and EView 9 Output, Note the table shows the fixed effect regression result.

## 5. Conclusion

The paper examined the role of ownership structure and corporate governance in mitigating agency cost on a sample of 57 manufacturing firms listed on the, Nigerian Stock Exchange during the period 2007 to 2015. We used the proxy agency index comprising of cost of efficiency (operating expenses divided by sales), the ratio of earnings before interest, taxes and depreciation to total assets is used to capture aggregate efficiency of managerial efforts measure agency cost. Multivariate fixed effect regression is used to analyse the data. Explanatory variables consist of governance and ownership related attributes such as managerial ownership, ownership concentration, board size, director's remuneration and board independence. We also used free cash flow, leverage and operating expense as control variables. The results show that higher managerial ownership, operating expense and free cash flow had significant influence on agency cost.

## Suggested Future Research

The study can be extended to look at the relationship between agency cost, ownership structure and corporate governance measures for listed companies, using other sectors and maybe look at the trends in Nigeria.

## References

- Agrawal, A., & Knoeber, C. R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis*, 31(03), 377-397.
- Andreas, J. M., Rapp, M. S., & Wolff, M. (2012). Determinants of director compensation in two-tier systems: evidence from German panel data. *Review of Managerial Science*, 6(1), 33-79.
- Ang, J. S., Cole, R. A., & Lin, J. W. (2000). Agency costs and ownership structure. *The Journal of Finance*, 55(1), 81-106.
- Baker, H. K., & Anderson, R. (2010). *Corporate Governance A Synthesis of Theory, Research, and Practice*. Hoboken, NJ: John Wiley & Sons, 1-17.
- Ball, R., & Shivakumar, L. (2005). Earnings quality in UK private firms: comparative loss recognition timeliness. *Journal of Accounting and Economics*, 39(1), 83-128.
- Beiner, S., Drobotz, W., Schmid, M. M., & Zimmermann, H. (2006). An integrated framework of corporate governance and firm valuation. *European Financial Management*, 12(2), 249-283.
- Berle, A., & Means, G. (1932). *The modern corporate and private property*. McMillan, New York, NY.
- Boone, A. L., Field, L. C., Karpoff, J. M., & Raheja, C. G. (2007). The determinants of corporate board size and composition: An empirical analysis. *Journal of Financial Economics*, 85(1), 66-101.
- Burgstahler, D. C., Hail, L., & Leuz, C. (2006). The importance of reporting incentives: Earnings management in European private and public firms. *The Accounting Review*, 81(5), 983-1016.
- Cheffins, B., & Bank, S. (2009). Is Berle and Means really a myth?. *Business History Review*, 83(03), 443-474.

- Chen, F., Hope, O. K., Li, Q., & Wang, X. (2011). Financial reporting quality and investment efficiency of private firms in emerging markets. *The Accounting Review*, 86(4), 1255-1288.
- Cheng, S., & Firth, M. (2006). Family ownership, corporate governance, and top executive compensation. *Managerial and Decision Economics*, 27(7), 549-561.
- Coles, J. L., Daniel, N. D., & Naveen, L. (2008). Boards: Does one size fit all?. *Journal of Financial Economics*, 87(2), 329-356.
- Core, J. E., & Guay, W. R. (2001). Stock option plans for non-executive employees. *Journal of Financial Economics*, 61(2), 253-287.
- Fama, E. F. (1980). Agency Problems and the Theory of the Firm. *Journal of Political Economy*, 88(2), 288-307.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law and Economics*, 26(2), 301-325.
- Fleming, G., Heaney, R., & McCosker, R. (2005). Agency costs and ownership structure in Australia. *Pacific-Basin Finance Journal*, 13(1), 29-52.
- Florackis, C. (2008). Agency costs and corporate governance mechanisms: evidence for UK firms. *International Journal of Managerial Finance*, 4(1), 37-59.
- Friend, I., & Lang, L. H. (1988). An empirical test of the impact of managerial self-interest on corporate capital structure. *The Journal of Finance*, 43(2), 271-281.
- Gogineni, S., Linn, S. C., & Yadav, P. K. (2013). Ownership Structure, Management Control and Agency Costs. *College of Business, University of Wyoming, Laramie WY, 82072*.
- Grossman, S. J., & Hart, O. D. (1988). One share-one vote and the market for corporate control. *Journal of Financial Economics*, 20, 175-202.
- Guariglia, A., & Yang, J. (2016). A balancing act: Managing financial constraints and agency costs to minimize investment inefficiency in the Chinese market. *Journal of Corporate Finance*, 36, 111-130.
- Gul, S., Sajid, M., Razaq, N., & Afzal, F. (2012). Agency cost, corporate governance and ownership structure (the case of Pakistan). *International Journal of Business and Social Science*, 3(9), 267-277.
- Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica: Journal of the Econometric Society*, 1251-1271.
- Henry, D. (2004). Corporate governance and ownership structure of target companies and the outcome of takeovers. *Pacific-Basin Finance Journal*, 12(4), 419-444.
- Henry, D. (2010). Agency costs, corporate governance and ownership structure: evidence from Australia. *La Trobe University, Melbourne*, 1-44.
- Hermalin, B. E., & Weisbach, M. S. (1991). The effects of board composition and direct incentives on firm performance. *Financial management*, 101-112.
- Hope, O., W. Thomas, and D. Vyas. (2013). Financial reporting quality of U. S. private and public firms. *The Accounting Review*, 88(5), 1715-1742.
- Hua, Z., Yun-zhe, G., & Dong-ping, H. (2010). Debt level and equity agency costs: Evidence from public listed companies in China. In *Management Science and Engineering (ICMSE), 2010 International Conference on* (pp. 1337-1345). IEEE.
- Ijeoma, N., & Ezejiofor, R. A. (2013). An Appraisal of Corporate Governance Issues in Enhancing Transparency and Accountability in Small and Medium Enterprises (SME). *International Journal of Academic Research in Business and Social Sciences*, 3(8), 162-179.
- Javaid, H. M., & Javid, S. (2017). Determining Agency Theory Framework through Financial Leverage & Insider Ownership: Evidence from Pakistan. *International Journal of Economics and Finance*, 9(3), 21-37.
- Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *The Journal of Finance*, 48(3), 831-880.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Kamyabi, Y., Yazdi, H. M., & Ashae, A. (2014). The impact of corporate governance and ownership structure on agency cost in listed companies of Tehran Stock Exchange. *International SAMANM Journal of Finance and Accounting*, 2(2), 35-47.
- Kargar, E. F., & Ahmadi, G. R. (2013). The relationship between free cash flows and agency costs levels: Evidence from Tehran Stock Exchange. *Research Journal of Finance and Accounting*, 4(14), 51-65.
- Kung, U. J. N., & Munyua, J. M. (2016). Relationship between corporate governance practices and agency costs of manufacturing and allied firms listed in Nairobi securities exchange. *Journal of Economics and Finance* 7(2), 58-68.
- McKnight, P. J., & Weir, C. (2009). Agency costs, corporate governance mechanisms and ownership structure in large UK publicly quoted companies: A panel data analysis. *The Quarterly Review of Economics and Finance*, 49(2), 139-158.
- Mitnick, B. M. (2015). Agency theory. *Wiley Encyclopedia of Management*.

- Murphy, K. J. (1999). Executive compensation. *Handbook of labour economics*, 3, 2485-2563.
- Mustapha, M., & Ahmad, A. C. (2011). Agency costs of debt and Monitoring. *International Review of Business Research Papers*, 7(4), 118-129.
- Nazir, M. S., Saita, H. K., & Nawaz, M. M. (2012). The Role of Debt in Reducing Agency Cost: Empirical Evidence from Pakistan. *Innova Ciencia*, 4 (5), 28-43.
- Nguyen, T. H. (2016). *The impact of board of directors and ownership characteristics on earnings management of publicly listed firms in Vietnam* (Master's thesis, University of Twente).
- Pfeffer, J. (1972). Size and composition of corporate boards of directors: The organization and its environment. *Administrative science quarterly*, 218-228.
- Reddy, K., & Locke, S. (2014). The relationship between ownership structure, capital structure and corporate governance practices: A case study of co-operatives and mutuals in New Zealand. *International Journal of Managerial Finance*, 10(4), 511-536.
- Rezaee, Z. (2009). *Corporate governance and ethics*. John Wiley & Sons.
- Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 94(3, Part 1), 461-488.
- Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The Journal of Finance*, 52(2), 737-783.
- Singh, M., & Davidson III, W. N. (2003). Agency costs, ownership structure and corporate governance mechanisms. *Journal of Banking & Finance*, 27(5), 793-816.
- Siregar, H., Sembel, R., & Maulana, T. N. A. (2015). Agency costs, corporate governance and ownership concentration: The case of agro-industrial companies in Indonesia. *Asian Social Science*, 11(18), 311-321.
- Tirole, J. (2006). Incentives and prosocial behaviour. *The American economic review*, 96(5), 1652-1678.
- Wang, J., Lu, G., & He, P. (2010) Agency Costs and Governance Mechanisms: Evidence from China's A-share Listed Companies. *M & D Forum*: 258-71.
- Wilkinson, J. (2013). Agency Costs. Retrieved June 2017, from The Strategic CFO: <https://strategiccfo.com/agency-costs/>.
- Yegon, C., Sang, J., & Kirui, J. (2014). The Impact of Corporate Governance on Agency Cost: Empirical Analysis of Quoted Services Firms in Kenya. *Research Journal of Finance and Accounting*, 5(12), 145-154.
- Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of financial economics*, 40(2), 185-211.
- Zahra, S. A., & Pearce, J. A. (1989). Boards of directors and corporate financial performance: A review and integrative model. *Journal of Management*, 15(2), 291-334.
- Zhang, H., & Li, S. (2008). The Impact of Capital Structure on Agency Costs: Evidence from UK Public Companies. In *16th Annual Conference on Pacific Basin Finance, Economics, Accounting and Management* (pp. 1-18). Queensland University of Technology.