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## **Board structure and value added performance in Nigeria**

By

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## **Abstract**

**Purpose** - *The paper investigates the link between corporate Board features and company performance in Nigeria.*

**Design/methodology/approach** – *We employ a multiple regression model to investigate the relationship between corporate governance proxies and company performance as measured by value added efficiency.*

**Findings** - *While, in general, no consistent links between selected Board features and company performance are identified, specific instances are noted. Results are comparable to those presented in other studies.*

**Practical implications** - *The study methodology has corporate governance implications in emerging economies, with particular regard to the transitional issues associated with the privatisation of state-owned enterprises.*

**Originality/value** - *Reflecting the increasing significance of intellectual capital, the study employs the Value Added Intellectual Capital (VAIC<sup>TM</sup>) methodology developed by Pulic (1998) to gain insights to company performance.*

**Keywords** - *Board structure, company performance, value added, intellectual capital*

**Paper type** – *Research paper*

## **Introduction**

Research on corporate governance relating to firm performance and value increasingly recognizes the importance of corporate governance to the long-term sustainability of firms and the positive welfare impact of governance on societies (Shleifer and Vishny, 1997; Tsameniy and Uddin, 2008). The potential cost of poor governance relates both to the impact on firms (Clarke *et al.*, 2003) and to wider impacts at a macroeconomic level (Black, 2001). Nevertheless, studies examining the relationship between corporate governance and performance have produced a diversity of results (Korac-Kakabadse *et al.*, 2001).

Adding value is a primary goal of the firm, and efficiency in the use of resources plays an important role in determining the sustainability of the organization. In this context, tangible assets may inadequately reflect the real value of the firm and reveal very little about its long-term performance. This paper examines the relationship between corporate governance and firm performance in the Nigerian context, utilising the Value Added Intellectual Coefficient Methodology (VAIC) initially developed by Pulic (1998) to better reflect the growing importance of intangibles on firm performance.

By measuring corporate performance in terms of value added this paper departs from the traditional focus of studies employing financial measures (Yermack, 1996; Carter *et al.*, 2003; Haniffa and Hudaib, 2006), and follows more recent applications of VAIC in evaluating intellectual capital performance (Goh, 2005), the contribution of intellectual capital to firm performance (Chen *et al.*, 2005; Shiu, 2006; Kamath, 2007) and corporate value (Chen *et al.*, 2005; Mickey and Goo, 2005). This study examines the association between company Board attributes and value added efficiency in terms of two major elements of a firm's resource base, namely: physical capital and intellectual capital.

The applied interpretation of value added is particularly apposite in the Nigerian context, given the increased use of IT and improvements in human capital in Nigeria (Soludo, *et al.*, 2004; Angaye, 2005). The specific focus of the study involves the analysis of the association between corporate performance and selected Board

attributes including: size; gender composition, minority group and non-executive representation; share ownership; and the duality of Board Chair and CEO roles.

Investigations of the effect of typical Board attributes on company performance have generally provided little evidence of systematic relationships (Larcker *et al.*, 2005), which may indicate the need for the inclusion of contextual variables (Shleifer and Vishny, 1997). Ownership structure and national culture can particularly influence Board composition, and may explain significant differences in corporate governance structures across countries (Li and Harrison, 2008; van Veen and Elbertsen, 2008).

Prior research on corporate governance in an African context include studies of SMEs (Kyereboah-Coleman and Biekpe, 2006; Abor and Adjasi, 2007), the impact of Board attributes on capital structure and financial decisions (Abor and Biekpe, 2007), governance standards (Okike, 2007), perceptions of governance (Wanyama *et al.*, 2009), financial distress (Muranda, 2006), effects on capital markets (Kibuthu, 2005), overviews of corporate governance in Africa (Nganga *et al.*, 2003), and studies of governance in the Nigerian context (Oyejide and Soyibo, 2001; Sademola and Soyibo, 2001).

This paper takes particular account of the influence of Nigeria's national and socio-cultural characteristics on the structure and efficiency of governance. Following a brief discussion of the Nigerian context in terms of corporate governance and ownership, we detail our research methodology and examine relevant literature. The description of data and statistical procedures is then followed by the presentation and discussion of results. The paper concludes with a summary and consideration of future research directions.

### **Corporate governance and ownership in Nigeria**

Following the country's independence in 1960 Nigeria sought economic indigenisation (Inanga, 1978) and independence from foreign control and influence, through the establishment of many SOEs across most economic sectors. Virtually none of these public enterprises performed well (El-Rufai, 2003). The lack of good corporate governance amongst Nigerian companies has been blamed for the economic

backwardness of the country (Dike, 2006) and particular problems in the financial sector led to the introduction of the Failed Banks (Recovery of Debt) and Financial Malpractice in Banks Act of 1994.

The failure of corporate governance in state owned enterprises (SOEs) has been a key factor leading to the Nigerian government's privatisation and commercialisation programme. Having its roots in the economic liberalisation decree of 1982, Nigeria's privatisation programme proceeded with the commercialisation and privatisation of SOEs in 1984, and further official announcements *re* the intended divestment of government holdings in public enterprises in 1986 (Ajayi, 2007). In 1988 the Bureau for Public Enterprises was established to promulgate the policy of commercialisation and privatisation of public enterprises. This was followed by the New Industrial Policy in 1989, widely interpreted as a replacement of the amended indigenisation policy (Ajayi, 2007).

The private sector did not excel either, in part due to poor corporate governance practices. Savannah Bank of Nigeria, for example, lost its operational licence (February, 2002) because of the ineffectiveness of the Board; misleading returns to the regulatory authorities; and an unstable financial position. Earlier, Lever Brothers Nigeria Plc has been accused of insider dealings, share racketeering and conflicts of interest by senior management (Ogbu, 1998; Ahunwan, 2002), and employment and other management decisions based more on ethnic solidarity than efficiency considerations (Ekanem, 1998). Finally, the company's listing was suspended in 1998 for submitting an annual return with irregularities.

Although the process of privatisation led to more diffused company shareholdings, there remained significant majority shareholdings in most of Nigeria's private companies. Additionally, the significant number of foreign institutional shareholders amongst NSE listed companies suggests that the foreign component has remained influential in Nigerian companies (Oyejide and Soyibo, 2001). While the diffusion of shareholdings has been accompanied by the increased separation of ownership from management control, the emergence of dominant indigenous shareholding may allow corporate abuse and minority expropriation.

## Research methodology

VAIC methodology (Pulic, 1998) forms the basis for our analysis. VAIC is employed to measure and indicate the value of a company. It is designed to enable management and relevant stakeholders to effectively monitor and evaluate the efficiency of value added by a firm's total resources, where value added is defined as the wealth created by the firm through the utilisation of its key productive resources.

Formally, VAIC can be represented as the sum of three indicators as follows:

- Capital Employed Efficiency (CEE) - indicator of VA efficiency of capital employed;
- Human Capital Employed (HCE) - indicator of VA efficiency of human capital; and
- Structural Capital Employed (SCE) - indicator of VA efficiency of structural capital.

In applying this methodology, VA is defined as:

$$VA = I + DP + D + T + M + R$$

where,

*VA* = Value added of the firm

*I* = Interest expense

*DP* = Depreciation expense

*D* = Dividends paid

*T* = Corporate taxes

*M* = Equity of minority shareholders in the net income of subsidiaries

*R* = Retained profits for the year

The component parts of VAIC are specified as:

$$CEE = VA/CE$$

where,

*VA* = Value added of the firm (as calculated above)

*CE* = Book value of the net assets of the firm

$$HCE = VA/HC$$

where,

*VA* = Value added of the firm (as defined above)

*HC* = Salaries and wage costs of the firm

$$SCE = SC/VA$$

where,

$$SC = VA - HC$$

*VA = Value added of the firm (as defined above)*

*HC = Salaries and wage costs of the firm*

CEE is viewed as a proxy for TVAPC, defined as the total value added as per a firm's resource base relating to physical capital, and HCE + SCE combined is a proxy for TVAIC, defined as the total value added as per a firm's resource base relating to intellectual capital where,

$$VAIC = TVAPC + TVAIC$$

VAIC was initially proposed in response to the growing belief that existing accounting systems inadequately measure value creation of modern business (Pulic, 2000), reflecting that intellectual rather than physical capital is becoming the major pivotal factor underlying value creation (Bornemann, 1999; Williams, 2001; Williams and Ho, 2003; Nazari and Herremans, 2007). We define company performance in terms of the efficiency of value added by a firm's total resource base.

VAIC methodology has been utilised in recent investigations on emerging markets. Chen *et al.* (2005) suggest that firm's intellectual capital has a positive impact on financial performance of Taiwanese firms, while Mickey and Goo (2005) confirm a positive relationship between intellectual capital and corporate value for Taiwanese manufacturers. Goh (2005) finds that Malaysian banks have higher human capital efficiency than structural and capital efficiencies. Shiu (2006) finds significantly positive correlations with profitability and market valuation in the Taiwanese technological industry. Kamath (2007), investigating the Indian pharmaceutical industry, finds human capital to be more important to profitability and productivity than physical and structural assets.

## **Prior literature, theory and hypothesis development**

A company's Board functions include the minimization of agency costs arising from the separation of ownership and control in corporations (Fama and Jensen, 1983). Jensen (1993) describes the Board of Directors as the apex of the internal control system in an organisation. Board characteristics may impact on the effectiveness of this control body. As such, we investigate:

### Board Size

The association between Board size and corporate performance is ambiguous (Yermack, 1996; Haniffa and Hudaib, 2006). Stakeholder theory suggests a positive association between larger Boards and effective decision making, furthermore, a larger Board may enhance the quality of advice given to corporate management (Forbes and Milliken, 1999; Cohen *et al.*, 2002; Haniffa and Hudaib, 2006). In contrast, agency theorists argue that as Board size increases, control and monitoring functions are impaired (Yermack, 1996), cohesion and coordination deteriorates (Jensen, 1993; Forbes and Milliken, 1999), decision making suffers (Lipton and Lorsch, 1992), and discussions of managerial performance become less candid (Vafeas, 1999).

Whilst the evidence on the effect of Board size is mixed, in the case of Nigeria a larger Board size may be positively associated with firm performance, on the basis that a large Board could provide wider contacts and help companies to secure critical resources. Thus, we hypothesise:

1: *A positive association between the number of members of the Boards of Directors of Nigerian publicly listed companies and VAIC*

### Board Composition

#### *Percentage of Outside Directors*

The function of the Board of Directors as an internal control mechanism is enhanced by the inclusion of outside directors (Fama, 1980; Fama and Jensen, 1983). This has been a central emphasis of corporate governance guidelines and laws (Cadbury, 1992; Sarbanes-Oxley Act, 2002; King Report 1, 1994; Nigerian Code of Corporate Governance, 2003). The empirical evidence regarding the association between the

proportion of outside directors and corporate performance, however, is mixed (for research in support of a positive association see Weisbach, 1988; Lin, 1996; Mayers *et al.*, 1997; contrasted by results in Hermalin and Weisbach, 1991; Agrawal and Kneiber, 1996)

In the Nigerian context we hypothesise:

2: *A positive relationship between the percentage of outside directors on the Boards of Directors of Nigerian publicly listed companies and VAIC*

### Ownership Structure

Ownership structure is likely related to issues of the alignment of interests between managers and shareholders, with Morck *et al.* (1989) providing particular evidence for this association, and Williams (2000) specifically arguing that the level of stock ownership amongst Board members could influence a firm's intellectual capital. Share ownership by managers may help to alleviate conflicts of interest that exist between them and shareholders (Jensen and Meckling, 1976; Fama, 1980). Greater directorial ownership may enhance intellectual capital performance by providing an incentive to focus on the long-term viability of the firm (Hansen and Hill, 1991). In contrast, Morck *et al.* (1989), contend that high share ownership by managers could result in entrenchment. Demsetz and Lehn (1985) found no association between firm performance and ownership, while Conyon and Leech (1994) found a positive relationship.

Despite the conflicting findings, we hypothesise:

3: *A positive relationship between the percentage of directors' ownership of Nigerian publicly listed companies and VAIC*

### Leadership Structure and Duality

Duality refers to the situation where a company's CEO is also the Chair of the Board. Stakeholder theory holds that duality seriously impedes the overall stakeholder orientation of Board members (Sonnenfeld, 1981). Separating the functions of CEO and Chair of the Board may enhance the Board of Directors' monitoring and control ability, and improve Directors' information processing capacities (Sanders and

Carpenter, 1998). Empirical research findings on this association remain rather inconclusive (see Rechner and Dalton, 1991; Pi and Timme, 1993, in support of separating the roles; contrasted by Brickley *et al.*, 1997; Vafeas and Theodorou, 1998).

We hypothesize:

- 4: *A positive relationship between the separation of the roles of Chief Executive Officer and Chair of Board of Directors of Nigerian publicly listed companies and VAIC*

#### Board Diversity

A more diverse Board may be more innovative, creative and capable of higher quality decision making (Zahra and Pearce, 1989; Bilimoria and Wheeler, 2000), better at strategic decision making and planning (Coffey and Wang, 1998), and be less subject to favouritism towards specific stakeholders (Carter *et al.*, 2003).

#### *Ethnicity*

There have been few studies on ethnicity and Board composition. Carter *et al.* (2003) found minorities on Fortune 1000 Boards to be positively associated with firm performance. Of particular relevance to Nigerian companies, we hypothesize:

- 5: *A positive relationship between the percentage of minority ethnic groups' individuals on the Boards of Directors of Nigerian publicly listed companies and VAIC*

#### *Gender*

A significant correlation between the number of females on Boards and revenue and profit margins has been reported by Burke (2000) in a study on Canadian companies. Carter *et al.* (2003) in an analysis of Fortune 1000 firms report a positive association between the presence of women on Boards and Tobin's Q. We hypothesize:

- 6: *A positive relationship between the percentage of females on the Boards of Directors of Nigerian publicly listed companies and VAIC*

#### CEO Nationality Status

Sanda *et al.* (2005) found that firms with foreign CEOs tend to perform better than those with indigenous CEOs. This finding is consistent with the work of Laing and Weir (1999) and Estrin *et al.* (2001) who emphasise the importance of managerial skills and business experience in promoting firm performance. We hypothesize:

7: *A positive relationship between the nationality of the CEO of Nigerian publicly listed companies and VAIC*

#### Control variables

Our study employs a set of independent variables as controls for potential influences on the firm's performance. These cover firm size, leverage (or gearing), and industry type (operationalised as research and development sensitivity).

#### *Firm Size*

The size of the company can have an effect on firm performance (Short and Keasey, 1999). The effect is believed to be two fold. In the first instance, large companies may be able to access funds more easily. Secondly, large companies may be able to create entry barriers (Mangena and Tauringana, 2006).

#### *Gearing Ratio/ Leverage*

Control over management actions may be more effectively exercised by debt holders than shareholders (Jensen and Meckling, 1976; Stiglitz, 1985; Short and Keasey, 1999). This may alleviate conflicts of interest between shareholders and managers (Jensen and Meckling, 1976; Weir *et al.*, 2002). On the other hand, with increased debt the attention of Boards may become focused on, and distracted by, debt servicing, limit the activities of the firm in investment and R&D, and threaten intellectual capital development and firm performance (Williams and Ho, 2003).

#### *Industry Type (Research and Development Sensitivity)*

Control for industry type is operationalised as Research and Development Sensitivity, proxying the extent to which a firm participates in intellectual capital activities (Williams, 2000). Following the approach adopted in other studies (Sanders and Carpenter, 1998; Williams, 2000; Williams and Ho, 2003) we consider that R&D

sensitive firms report their research and development expenditure separately because this expense is material to their performance within the industrial sector.

### **Sample data and variable selection**

Our study data was derived from the 2004 annual reports of NSE listed firms. While it is common practice to exclude the financial and utility sector in empirical investigations of this nature (Vafeas and Theodorou, 1998; Williams and Ho, 2003), we included these to ensure reasonable sample size, given the small number of Nigerian companies in other sectors, conforming with the approach adopted by Sanda *et al.* (2005). The primary source for documentation were the records held at the Corporate Affairs Commission but, where this was incomplete, other techniques (direct contact, database and website searches) were employed to collect a final useable sample of 104 (50% of NSE listed firms). Amalgamating into broad sectors the sample comprises of: Finance 51, Manufacturing 34, Service Sector 11, Building and Construction 8.

Table 1 reports descriptive statistics for the dependent, independent and control variables. Figures for the dependent variables are similar to those reported in prior studies (see Williams and Ho, 2003), although the return on assets measure is lower.

Table 1: Descriptive statistics for the independent variables, control variables and the dependent variables

	Mean	Median	SD
<b>Independent variables</b>			
Board Size	9.50	9.00	2.64
Duality	6.73%	N/A	N/A
CEO	24.0%	N/A	N/A
PerDirOwn	15.69%	2.11%	23.48%
PerOutDir	70.14%	73.87%	15.23%
PerMin	19.71%	12.50%	24.19%
PerFem	5.60%	0.00%	8.03%
<b>Control Factors</b>			
Leverage	71.26%	74.90%	24.78%
R & Dev Sensitivity	46.15%	N/A	N/A
Firm Size (Sales £'000)	57499	20081	81786
<b>Dependent variables</b>			
VAIC	4.27	3.77	2.93
TVAPC	0.80	0.59	1.31
TVAIC	3.54	3.17	2.68
Profitability	6.57%	4.00%	7.02%

*Note:* The table below shows the values of Firm Size in Nigerian currency 'Naira' exchanged at N250 to £1.00

	Mean	Median	SD
Firm Size (Sales N'000)	14374754	5020241	20446367

In summary some key features of the independent variables are:

- Average Board size is 10 but varies between 4 and 17.
- Only 7 of sampled firms had Boards in which a single individual is both the Chair and CEO.
- 24% of sampled firms had a foreign CEO, typically conglomerates with ties to foreign oil producing partners.
- Average percentage of directors' share ownership is 16%, although for a few companies director ownership was substantial.
- One in five of the sampled firms have minority group individuals represented on their Boards, with 6% being executive directors.
- Only 6% of the sampled Boards have females as directors and only two Boards have female executive directors.

The descriptive statistics for the control variables showed:

- A gearing ratio of 71% for leverage, likely to reflect the number of financial institutions included within the sample.
- Less than half of the sampled firms disclose research and development activities.
- The average sales turnover for the sampled firms is £57.5m, varying between £0.115m and £412.3m

These results are consonant with prior studies that explicitly treat a range of environmental and cultural aspects (Haniffa, and Cooke, 2002; Williams and Ho, 2003; Sanda *et al.*, 2005; Mangena and Tauringana, 2006).

### **Statistical Procedure**

Nineteen variables were initially identified, as presented in the Correlation Matrix reported in Table 2. The independent variables comprised of Board size, percentage of females on the Board, percentage of females who are executive directors, percentage of females who are non-executive directors, percentage of directors from ethnic minorities, percentage of executive directors from ethnic minorities, percentage of non-executive directors from ethnic minorities, percentage of non-executive directors on the Board, percentage of directors' share ownership, a dummy variable representing firms whose CEOs are of foreign nationality, percentage of non-executive directors on the audit committee, percentage of executive directors on the audit committee, and percentage of shareholders on the audit committee. The control variables initially chosen were duality, profitability, leverage, research and development sensitivity and firm size.

The majority of Pearson correlations reported in Table 2 are below 0.5. In cases where they are above 0.5 the correlations indicate natural links between the variables concerned. The percentage of females (PerFem) on the boards of directors is expected to correlate highly with the percentage of females on the boards serving as executive directors (PerInFem). The same applies to the percentage of minority groups

individuals represented on the boards (PerMin) and the percentage of that number that are executive directors (PerInMin) and non-executive directors (PerOutMin). There is an expected link between the size of a firm and the size of its board. There is also a natural link (negative) between the percentage of executive directors serving in the audit committees (PerInAc) and the percentage of non-executive directors serving in the audit committees (PerOutAc). The variance inflation factor (VIF) values (calculated with every multiple regression model performed) do not exceed 4.00. All VIF values are substantially below the critical value of 10.00 (Bowerman and O'Connell, 1990; Myers, 1990). Based on Pearson correlations and VIF values, multicollinearity does not appear to be a serious concern.

Table 2: Correlation Matrix

	Independent variables														Control factors				
	BS	PF	PIF	POF	PM	PIM	POM	POD	PDO	POA	PIA	PSA	CEOF	DUAL	PROF	LEV	DY	RDS	FS
<b>BS</b>	1																		
<b>PF</b>	-0.108	1																	
<b>PIF</b>	-0.111	0.621	1																
<b>POF</b>	-0.053	0.807	-0.039	1															
<b>PM</b>	-0.224	0.229	0.147	0.180	1														
<b>PIM</b>	-0.099	0.186	0.337	-0.018	0.735	1													
<b>POM</b>	-0.244	0.203	0.014	0.249	0.931	0.436	1												
<b>POD</b>	-0.086	-0.002	-0.167	0.123	0.088	-0.216	0.233	1											
<b>PDO</b>	-0.346	0.289	0.311	0.135	0.088	-0.014	0.124	0.130	1										
<b>POA</b>	0.046	0.082	-0.023	0.122	0.118	0.053	0.128	0.281	0.048	1									
<b>PIA</b>	0.086	-0.142	-0.012	-0.172	-0.156	-0.118	-0.143	-0.335	-0.144	-0.539	1								
<b>PSA</b>	0.191	-0.059	-0.168	0.053	-0.063	-0.160	0.002	-0.061	-0.095	0.318	0.240	1							
<b>CEOF</b>	-0.064	-0.159	-0.054	-0.162	-0.286	-0.247	-0.246	-0.111	-0.169	-0.210	0.193	0.64	1						
<b>DUAL</b>	-0.154	0.098	0.010	0.117	-0.124	-0.117	-0.102	-0.093	0.207	-0.029	0.162	0.030	0.028	1					
<b>PROF</b>	0.047	0.048	0.014	0.050	-0.039	-0.094	0.000	-0.121	-0.092	0.109	-0.049	0.039	0.137	-0.012	1				
<b>LEV</b>	0.197	-0.238	-0.135	-0.202	-0.106	-0.052	-0.113	-0.018	-0.209	-0.043	0.077	-0.153	-0.020	-0.120	-0.307	1			
<b>DIVY</b>	0.146	0.031	-0.053	0.080	-0.106	-0.067	-0.104	-0.229	-0.235	-0.023	0.142	0.075	0.179	0.061	0.400	0.098	1		
<b>RDS</b>	0.323	-0.042	-0.121	0.039	-0.081	-0.159	-0.022	-0.091	-0.185	0.092	0.143	0.252	0.021	-0.095	0.136	0.130	0.319	1	
<b>FS</b>	0.542	-0.214	-0.118	-0.184	-0.151	0.036	-0.219	-0.279	-0.559	-0.032	0.161	0.051	0.095	-0.190	0.127	0.239	0.391	0.267	1

*Notes:* BS-Board size, PF-percentage of females, PIF-percentage of inside females, POF-percentage of outside females, PM-percentage of minority, PIM-percentage of inside minority, POM-percentage of outside minority, POD-percentage of outside directors, PDO-percentage of directors' ownership, POA-percentage of outside directors on the Audit Committee, PIA-percentage of inside directors on the Audit Committee, PSA-percentage of shareholders on the Audit Committee, CEOF-Chief Executive Officer if foreign, Duality-A single individual being both Chair and CEO, Prof-Profitability, LEV-Leverage, DY-Dividend Yield, RDS-Research and Development Sensitivity, FS-Firm size.

Following assessment of the relationships between variables, four independent variables were eliminated due to high correlations. Furthermore, three other independent were eliminated from the regression runs because of their relationships, as subordinate variables, to others identified as core variables to which they are closely associated with by definition even though no close correlation is formally identified. Profitability, which was initially expected to be a control variable with respect to VAIC, TVAPC and TVAIC, was also eliminated because of its association with TVAPC as a dependent variable.

In addition to model estimations generated to test the hypothesised relationships (1-7) with respect to VAIC as the dependent variable, regressions runs were also carried out on the two component elements, TVAIC and TVAPC. In the first instance the regressions utilised the seven remaining independent variables of interest and the three control variables. For comparative purposes another measure of performance, return on assets (ROA) was used as the dependent variable.

Tests related to the analysis of residuals, plots of the studentised residuals against predicted values, the Q-Q plot, tests of skewness and kurtosis, were carried out. Indications of a problem with the normality assumption required the logarithmic transformation of the dependent variables and some independent variables used in the regression. The transformation procedure used in our regressions, as recommended and adopted in similar prior research (Adenikinju and Ayoride, 2001; Williams and Ho, 2003; Sanda *et al.*, 2005; Hair *et al.*, 2006; Williams, 2007) improved our estimations. The logarithmic transformed dependent variable (excluding profitability as a dependent) was regressed against six independent variables and three control variables with three of the explanatory variables logarithmically transformed (excluding research and development sensitivity (RDSen)). The sample size varied with each of the dependent variables as companies that reported zeros for specific dependent variable were excluded from that particular sample set.

## Presentation of Results

This section presents the results of three multiple regressions, one for each independent variable - VAIC, TVAPC and TVAIC - involving a selection of independent and control variables, as well as estimation results employing a Profitability measure as the dependent variable.

### VAIC as the dependent variable

The F statistic (Table 3) suggests that the regression model is significant at the 0.05 level of significance with a low adjusted R square, indicating poor model fit and low explanatory power in the model. PerFem and FirmSize remain significant at the 0.05 level and 0.01 levels respectively. PerFem is positively related with VAIC, suggesting that an increase in the proportion of females on the Boards of companies listed in the NSE increases the value of such firms' VAIC. The results also suggest that an increase in firm sales value produces an increase in firm VAIC.

Table 3: OLS results with VAICLn as the dependent variable

<i>Model: VAICLn<sub>i</sub> = α + α<sub>1</sub>BoardSize<sub>i</sub> + α<sub>2</sub>PerFem<sub>i</sub> + α<sub>3</sub>PerMin<sub>i</sub> + α<sub>4</sub>PerOutDir<sub>i</sub> + α<sub>5</sub>PerDirOwn<sub>i</sub> + α<sub>6</sub>CEO<sub>i</sub> - α<sub>7</sub>Duality<sub>i</sub> - α<sub>8</sub>LeverageLn<sub>i</sub> + α<sub>10</sub>RDSen<sub>i</sub> + α<sub>11</sub>FirmSize<sub>i</sub> + ε</i>	
	<i>Sample n=99</i>
Multiple R	0.454
R Square	0.206
Adjusted R Square	0.116
Standard Error	0.647
ANOVA:	2.288
F Statistic (Sig.)	(0.020)

	<i>t statistic</i>	<i>P value</i>
Intercept	-1.461	0.148
BoardSize	0.545	0.587
PerFem	2.215	0.029
PerMin	-0.123	0.903
PerOutDir	0.246	0.806
PerDirOwn	1.393	0.167
CEO	-1.447	0.151
Duality	1.152	0.252
LevLn	-0.749	0.456
RDSen	0.235	0.814
FirmSize	2.840	0.006

TVAPC as the dependent variable

The F statistic (Table 4) suggests that the regression model is statistically significant at the 0.01 level and this is reflected in the adjusted R square indicating good explanatory power in the model and good model fit. As in Table 3 the three variables, PerFem, FirmSize and Leverage are significant at the 0.05, 0.05 and 0.01 levels of significance respectively

Table 4: OLS results with TVAPCLn as the dependent variable (without dividend yield)

<i>Model: TVAPCLn<sub>i</sub> = α + α<sub>1</sub>BoardSize<sub>i</sub> + α<sub>2</sub>PerFem<sub>i</sub> + α<sub>3</sub>PerMin<sub>i</sub> + α<sub>4</sub>PerOutDir<sub>i</sub> + α<sub>5</sub>PerDirOwn<sub>i</sub> + α<sub>6</sub>CEOF<sub>i</sub> - α<sub>7</sub>Duality<sub>i</sub> - α<sub>8</sub>LeverageLn<sub>i</sub> + α<sub>10</sub>RDSen<sub>i</sub> + α<sub>11</sub>FirmSize<sub>i</sub> + ε̂</i>	
	<i>Sample n=102</i>
Multiple R	0.717
R Square	0.514
Adjusted R Square	0.460
Standard Error	0.726
ANOVA:	9.610
F Statistic (Sig.)	(0.000)

	<i>t statistic</i>	<i>P value</i>
Intercept	-1.564	0.121
BoardSize	-0.510	0.611
PerFem	1.955	0.054
PerMin	-1.470	0.145
PerOutDir	-0.648	0.519
PerDirOwn	-0.263	0.793
CEOF	1.391	0.168
Duality	-0.629	0.531
LevLn	7.104	0.000
RDSen	0.003	0.998
FirmSize	2.081	0.040

TVAIC as the dependent variable

The F statistic (Table 5) suggests that the regression model is statistically significant at the 0.01 level of significance. This is not well reflected in the adjusted R Square indicating poor model fit and low explanatory power on the model. The four variables - PerFem, PerDirOwn, CEOF and FirmSize - are again significant at the 0.05, 0.05, 0.05 and 0.01 levels of significance respectively.

Table 5: OLS results with TVAICLn as the dependent variable

<i>Model: <math>TVAICLn_i = \alpha + \alpha_1 BoardSize_i + \alpha_2 PerFem_i + \alpha_3 PerMin_i + \alpha_4 PerOutDir_i + \alpha_5 PerDirOwn_i + \alpha_6 CEOF_i - \alpha_7 Duality_i - \alpha_8 LeverageLn_i + \alpha_{10} RDSen_i + \alpha_{11} FirmSize_i + \hat{\epsilon}</math></i>	
	<i>Sample n=100</i>
Multiple R	0.536
R Square	0.287
Adjusted R Square	0.207
Standard Error	0.718
ANOVA:	3.586
F Statistic (Sig.)	(0.000)

	<i>t statistic</i>	<i>P value</i>
Intercept	-2.391	0.019
BoardSize	0.513	0.609
PerFem	2.385	0.019
PerMin	0.668	0.506
PerOutDir	0.367	0.715
PerDirOwn	1.942	0.055
CEOF	-2.054	0.043
Duality	1.244	0.217
LevLn	-1.623	0.108
RDSen	0.555	0.580
FirmSize	3.283	0.001

Profitability as dependent variable

The F statistic (Table 6) suggests that the regression model is not statistically significant and this is reflected in the adjusted R Square indicating low explanatory power in the model as well as poor model fit. Only leverage is significant (negatively), at the 0.05 level of significance.

Table 6: OLS results with ProfitLn as dependent variable

<i>Model: ProfitLn<sub>i</sub> = α + α<sub>1</sub>BoardSize<sub>i</sub> + α<sub>2</sub>PerFem<sub>i</sub> + α<sub>3</sub>PerMin<sub>i</sub> + α<sub>4</sub>PerOutDir<sub>i</sub> + α<sub>5</sub>PerDirOwn<sub>i</sub> + α<sub>6</sub>CEO<sub>i</sub> - α<sub>7</sub>Duality<sub>i</sub> - α<sub>8</sub>LevLn<sub>i</sub> + α<sub>9</sub>RDSen<sub>i</sub> + α<sub>10</sub>FirmSize<sub>i</sub> + ε</i>	
	<i>Sample n=86</i>
Multiple R	0.369
R Square	0.136
Adjusted R Square	0.021
Standard Error	0.848
ANOVA:	1.183
F Statistic (Sig.)	(0.316)

	<i>t statistic</i>	<i>P value</i>
Intercept	-1.973	0.052
BoardSize	-0.997	0.322
PerFem	0.227	0.821
PerMin	-0.352	0.726
PerOutDir	0.164	0.870
PerDirOwn	-1.350	0.181
CEO	0.833	0.408
Duality	-0.396	0.693
LevLn	-2.464	0.016
RDSen	-0.248	0.805
FirmSize	0.193	0.848

*Note:* Profitability<sub>i</sub> = ratio of a firms net income (profit before tax) to total assets as reported in 2004 annual report of company i. Other independent variables and control factors are as defined in Table 3.

### Summary and interpretation

Our multiple regression model estimates show no systematic link or relationship between the investigated Board features and corporate performance. The analysis shows there to be little overall explanatory power in the regression model runs. The few significant relationships that are identified between the dependent and independent variables (whether explanatory or control) comprise of the positive associations between the percentage of females in the boards of companies listed in the NSE, size of the firm and all measures of corporate performance, and the positive association of leverage/gearing with the measure of return on physical capital,

Bearing in mind that the percentage of females on Nigerian company boards is low (less than 6% in the sample data), which qualifies the weight to be placed upon the finding, the result is in line with similar findings by Williams (2000), indicating that the average intellectual capital performance of firms with women on their Board of Directors is significantly different from that of enterprises having no female representation. Our evidence may provide support for calls to increase gender diversity in company boards (Useem, 1993; Coffey and Wang ,1998).

Our other findings provide an interesting contrast with those of Williams (2000) and Williams and Ho (2003). Whilst Williams and Ho (2003) identify a positive association between non-white directors on the Board and enhanced measures of corporate performance, we find that ethnic status has no relationship at all with performance. In further contrast to Williams and Ho's (2003) study, we do not identify a negative association regarding the duality of the roles of the CEO and Chair and corporate performance. Furthermore, our evidence regarding a positive relationship between gearing and the measure of physical capital diverges from Williams and Ho's (2003) findings. Finally, our observation of a consistent and significant positive relationship between company size and performance also contrasts with Williams' (2000) findings.

## **Concluding remarks and future research**

This paper investigates the link between Board features and corporate performance in Nigeria. It employs a multiple regression model to investigate the relationship between corporate governance proxies and firm performance as measured by value added efficiency. In particular, and as motivated by the increasing significance of intellectual capital, the study employs VAIC methodology developed by Pulic (1998). Although our empirical findings do not generally indicate any significant statistical associations between Board features and corporate performance, they do conform with other research evidence that no specific Board feature is consistently associated with corporate performance (e.g. Hermalin and Weisbach, 1991; Brickley *et al.*, 1997; Williams, 2000; Korac-Kakabadse, *et al.*, 2001; Williams and Ho, 2003). In addition to contributing to the general literature in the area, the specific methodology adopted is of particular relevance *re* corporate governance in emerging economies, with particular regard to transitional issues associated with the privatisation of state-owned enterprises.

Clear opportunities abound to extend the work of this study, including the re-specification of Board features, and a more in-depth analysis of particular issues distinctive to Nigeria and other countries with similar societal/cultural features. Although the main focus of this study has been on the evaluation of corporate governance of listed companies, there is scope for a broader investigation of Nigerian non-listed companies. Finally, there is scope for a wider study of the nature of corporate governance in SOEs before and after Nigeria's (ongoing) privatisation programme, while a longitudinal approach might be applied to capture more dynamic elements of the evolution of corporate governance especially as the country's democratic institutions take firmer roots.<sup>1</sup>

### *Note:*

1. As a postscript to this paper it should be noted that a review of corporate governance in Nigeria has recently been submitted to the Nigerian Securities and Exchange Commission (April, 2009) by the National Committee on the Review of the Code of Corporate Governance in Nigeria. The committee was established to review and update the 2003 code of corporate governance for public companies in the light of recent global and local developments.

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