

STRATEGIC MANAGEMENT OF GROWTH IN MANUFACTURING COMPANIES IN SUB-SAHARAN AFRICA: A CASE STUDY OF NIGERIA

Abstract

Our paper aims at assessing strategic management of growth in manufacturing companies in sub-saharan Africa with special reference to Dangote group of companies in Nigeria between 2008-2012. The general objective of the study is to investigate the determinants/components of sustainable growth. R^2 measured as the proportion of the variation in the dependent variable (GRO) that was explained by variations in the independent variables (ROA, CST, TAT, DPR and CFR). We carried out correlation analysis to show the relationship among the variables as well as regression analysis to show the impact/cause and effect of independent variables; ROA, CST, TAT, DPR and CFR on GRO. The result showed that 1% increase in ROA and CFR is expected to lead to 67.1 % and 18.5% in GRO respectively. In addition, 1% increase in CST, TAT and DPR led to 1%, 2.3% and 58.1% in GRO respectively. The result of the correlation showed that null hypotheses 1, 4 and 5 were rejected while hypotheses 2 and 3 were accepted. The overall significance of the model was assessed by the ANOVA . The result indicated that the model is significant as shown in the value of F-value of 30.684 and a P-value of .000 which is less than 0.05. The effect of the growth components on growth was assessed through regression analysis. The result showed that there was positive relationship between GRO and ROA and CFR. Similarly, there were inverse relationship between GRO and CST, TAT and DPR. It was concluded that the overall sustainable growth is enhanced if 'target variables' are well managed.

Key words: sustainable growth, profitability, dividend payout , target variables strategic management.

Introduction

In simple terms and with particular reference to a business, sustainable growth is the realistically attainable growth that a company could maintain without running into problems (Akintoye, 2010). If a company is growing too quickly, it might find it too difficult if not impossible to fund the growth. Similarly, a business that grows too slowly or not at all may stagnate. Consequently,

a sustainable growth rate is the maximum growth rate that a company can sustain without having to increase financial leverage. Sustainable growth models assume that the business wants to maintain a target capital structure without issuance of new equity, maintain a target dividend payment ratio and increase sales as rapidly as market conditions allow (Akintoye, 2008).

From the foregoing sustainable growth is aptly referred to as how fast a firm can grow while at the same time striking a balance between its sources and uses of funds. It states how much growth a company can achieve with its current profit margin, asset efficiency, retained earnings and leverage. In other words sustainable growth is the rate of growth that is most realistic estimate of the growth in a company's earnings with the assumption that the company maintains its capital structure (Akintoye, 2008).

Creation of sustainable growth is pre-occupation of small business owners as well as that of big corporate executives. Evidently, achieving this goal is not an easy task, in the face of rapidly changing political, economic, competitive and consumer trend. Each of these tendencies presents unparalleled difficult tasks to business leaders looking for the ways of maintaining sustainable growth. Customer expectations have changed considerably over the last few generations. Similarly, competition is keen in nearly all industries, which have seen unprecedented breakdowns in the barriers that formerly separated them.

The sustainable growth model highlights conflicts among a firm's competing objectives. A higher asset turnover ratio (greater asset efficiency) means a higher sustainable growth rate. A lower dividend payout ratio means higher growth, as well as a higher profit margin. A higher leverage ratio (assets to equity) also means a higher sustainable growth rate. If a firm decides to grow at a rate above its sustainable rate, the firm may have higher debt (the firm borrows to increase its assets to equity ratio) more retain earnings (the firm lowers its dividend payout ratio), a higher profit margin (the firm cut costs), or fewer assets (the firm makes more efficient use of its assets. The opposite is the case if a firm decides to grow at a rate below its sustainable rate.

The sustainable growth rate is a measure that firms uses for different purposes, such as to evaluate the credit worthiness of companies. If the actual growth rate in the sales of a company is greater than the sustainable growth model rate, financial institutions are prepared to advance loans to the company or to assist in the issue of shares in order to provide the capital needed. If on the other hand actual growth rate of sales is consistently lower than the sustainable growth

rate, the cumulative cash surpluses would need to be invested and the financial institution may offer investment products to the company.

The main thrust of this paper is to find out relationship between strategic management tools and sustainable growth. This is specifically tested examining the extent of relationship between sustainable growth and profitability, finding out the relationship between sustainable growth and capital structure, investigate relationship between corporate growth and asset utilization, determining the relationship between sustainable growth and cash generated from operation and finally assess the relationship between sustainable growth and dividend payout.

Research Hypotheses

To provide answers to the above research questions, the following are the research hypotheses formulated in null form:

H₀1: There is no significant relationship between sustainable growth rate and profitability.

H₀2: There is no significant relationship between sustainable growth rate and capital structure.

H₀3: There is no significant relationship between sustainable growth rate and asset utilization.

H₀4: There is no significant relationship between sustainable growth rate and dividend payout.

H₀5: There is no significant relationship between sustainable growth rate and cash generated from operation.

Conceptualization of variables

Sustainable growth is a function of profitability, capital structure, assets utilization, dividend payout and cash generated from operation. This relationship is shown below:

$$Y=f(X)$$

Where:

Y= Sustainable growth rate measured as a product of the return on equity and earnings retention (GRO).

$$X=f(x_1, x_2, x_3, x_4, x_5)$$

x₁= Profitability measured as return on capital employed (ROA) = EBT/ASSETS (PRO).

x₂=Capital structure measured as Debt/Equity(CST).

x₃= Assets Utilization measured as Sales/Total Assets (TAT).

x₄ = Dividend payout measured as Dividend paid/Earnings available to equity holders(DPR)

x₅= Cash generated from operation measured as Fund generated from operation/ Total Sources of fund (CFR).

99 The relation is as follows

$$100 Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \varepsilon$$

101 where:

102 β_0 is the intercept of the model. It is the level of sustainable growth the companies can sustain
 103 when profitability, capital structure, assets utilization, dividend payout ratio and cash generated
 104 from operation are considered irrelevant. β_i ($i = 1, 2, 3, 4, 5$) are the coefficients of the
 105 respective components of sustainable growth by the companies. ε is the stochastic variable
 106 introduced into the model to accommodate the influences of other variables that may
 107 shape sustainable growth rate of the companies but which are not explicitly included in the
 108 model.

109 **Empirical Evidence**

110 **Conceptual frame work**

111 The concept of sustainable growth model that was well known is that of the Boston Consulting
 112 Group (BCG Model) (Zakon, 1986). This was followed by Higgins 1977. He demonstrated that
 113 the financial policies of many companies might be at variance with their growth objective. Other
 114 authors like Van Horne (1998), Ross et al (2003) and Nasrollah (2011) contributed to concept of
 115 sustainable growth.

116 The sustainable growth of any company is determined by the following factors: (1) profit
 117 margin, (2) asset utilization, (3) financial policy, (4) dividend policy (Nasrollal et al., 2011, Ross
 118 et al., 1993 and De Wet, 2004). Another important factor is cash generated from operation.

119

120

121 **Theoretical frame work**

122 Sustainable growth model rate

123 Over the years, a number of authors had developed models on sustainable growth. These models
 124 can be grouped into two areas: traditional (debt/equity) determined and cash flow- determined
 125 models. The traditional growth rate model use the debt: equity or debt: total assets (as
 126 determined in the balance sheet). The grow rate of capital intensive companies are best
 127 determined with traditional model (Nasrollah, Zahra & Zahra, 2011 in Chen, Gupta, Lee & Lee,
 128 2011)

129 Five models have been described in this study according to the dates the model was developed:

130 **Zakon Model**

131 A well known model is that of the Boston Consulting Group's Model (BCG)

$$132 SG = [D/E \cdot (R - i) \cdot p] + R \cdot p$$

133 Where: SG=sustainable growth rate; D/E=debt/equity ratio; R = ROA; i = interest rate (1-
134 taxation rate); and P =retention ratio.

135 The above sustainable growth is based on the assumption of additional debt but no additional
136 equity issues (Hamman,1996).

137 **Higgen's Model**

$$138 SGR = (P)(1-R)(1+L)/A - (P)(1-R)(1+L)$$

139 Where: P=Profit margin on Sales After Taxes; R=Percent of Profit Returned to Owners; L=Debt
140 to Equity Ratio

$$141 SGR = b(NP/S)(1+D/Eq)/(A/S) - b(NP/S)(1+D/Eq)$$

142 Where: A/S =rate of total assets and sales; NP/S=net profit rate; b=retained profit;

143 D/Eq= ratio of debt and equity; and S=sales in the recent year (Huang, Liu, 2009).

144 **Van Horne's Model**

145 Van Horne (1998) defined sustainable growth rate as the maximum annual percentage increase
146 in sales that can be achieved based on target operating, debt and dividend-payout ratios. Going
147 by this definition, a company can determine if their projected sales are a realistic goal. This
148 model developed by Van Horne is the quantitative descriptive of the sustainable growth rate
149 which is the variance of the sales income, i.e. SGR or $\frac{\Delta S}{S}$

$$150 SGR = b(NP/S)(1+D/Eq)/(A/S) - b(NP/S)(1+D/Eq).$$

151 Where profits, A/S is the rate of the total assets and the sales, NP/S is the net profit rate, b is the
152 retained profits (1-b) the dividend ratio, D/Eq is the ratio of the debt and equity, S is the sales in
153 the recent year, and ΔS is absolute variance of
154 *the sales in the recent year* (Huang, Liu, 2009)

155 **Ross,Westerfield and Jordan Model**

156 The following formula to calculate sustainable growth rate was developed on the assumption that
157 the firm is operating at full capacity, balance sheet items and net profit margin change over time
158 proportionally with change in sales and variable liability is not a source of internal financing and,
159 and at the same time, it is not a part of debt.

$$160 SGR = \underline{ROE} \times b \times 100$$

161 $1 - ROE \times b$

162 Where: SGR= Sustainable growth rate; ROE= Return on Equity; and b= Retention ratio.

163 This formula adopted the Percentage of Sales Approach (POSA). Another problem of this
164 version of sustainable growth rate formulation is that if the effect of Debt/Equity ratio is to be
165 examined return on equity (ROE) will have to be calculated with new set of data.

166 **Simple growth model**

167 The simple model for calculation of sustainable growth is:

168 $g = ROE \times RR$

169 Where

170 g =Sustainable growth rate;

171 ROE =Return on Equity; and

172 RR = Retention Rate

173 Sustainable growth can be associated with fundamental factors of the corporate performance
174 and financial condition using the Du Pont break down. In the Du Pont analysis of the return on
175 equity, it is discovered that return on equity is the product of the net profit margin, the total asset
176 turnover and equity multiplier.

177 Robert (2011), addresses the nature and magnitude of errors generated in calculating sustainable
178 and internal growth rates by mismatching return on assets (ROA) or return on equity (ROE) with
179 a model dependent upon the method used to calculate return on assets or return on equity. In the
180 study conducted by Nasrollah, Zahra and Zahra (2011) sustainable growth rate and firm
181 performance: evidence from Iran Stock Exchange, the study revealed that the deviation of actual
182 growth rate from sustainable growth rate is having relationship with return on asset, price to
183 book ratio and liquidity ratio. A comparative analysis of sustainable growth pattern was
184 conducted by Guoli and Shujum. In this study four existing sustainable growth models were
185 compared. The study revealed the advantages and limitations of the four existing sustainable
186 growth models in logic and practice respectively. In the same vien,Fonseka, Constantino and
187 Gao-liang (2012) carried out a study to analyze whether there is a significant difference among
188 widely used Higgins model and affected by variations in the Van Horne model and whether these
189 two competing sustainable growth models estimate divergences in ways that are systematically
190 related to variations in common financial characteristics. It was discovered that Higgin's
191 sustainable growth rate when it was used as continuous and dichotomous variables is more

affected by variations in financial characteristics than Van Horne's model. The study therefore confirmed that Higgins and Van Horne's models are qualitatively and approximately the same in relation to most common financial characteristics of a firm. Firer concluded that the concept of a sustainable growth rate addresses the strategically important question of whether or not the firm's proposed plans can be funded within its existing financial parameters.

Clark, Clark and Verzilli (1985), Platt, Platt and Chen (1995) used different models without adequate explanations as to why and obtaining the same result. Ashta (2008) conducted a comparative analysis of two growth models which derived from Higgin's (1997; 1981) model. The conclusion was that sustainable growth rate models work consistently and there is no significant difference. However, he used a simple and "fictitious classroom kind of illustration" and his figures were also hypothetical. Hence, it may be inadequate for broad scientific explanations. Firer (1995) offered a brief discussion on various sustainable growth rate models that existed in the literature. In his study, he failed however, to explain any difference among the models and when and where managers can apply these models for the computation of a firm's sustainable growth model.

Methodology

Van Horne (2007) and Pickett (2008) pointed out that variables used in a sustainable growth rate model (SGR) are called "target variables" which are considered as accounting ratios. The calculated SGR therefore provides snapshot of a company's financial situation. Target ratios are industry specific and more care was taken not to compare the SGR of firms in different industry. From the foregoing, industry in the consumer goods with companies belonging to Dangote companies under this sector was selected for this study.

The data utilized in this study is secondary extracted from the financial statements of the selected companies (Owolabi and Obida (2012); Owolabi and Alayemi (2013); Alayemi (2013). The methodical reasons for using secondary data are as follows: Secondary data, if reliable and accurate, provides opportunity for replication. The availability of data over time enables the researcher to employ longitudinal research designs. It improves measurement by expanding the scope of independent variables employed in the operationalization of concepts. Finally, secondary data can be used for triangulation, that is increasing the validity of research findings obtained with primary data (Frankfort-Nachmias and Nachimias, 2009). On economic reason, it is cheaper to use existing data rather than to collect new data.

Data Analysis

Correlation Analysis

Prior to regression analysis, it is important to check the correlation between different variables on which the analysis was built. Correlation explains how two variables react to each other. For the purpose of this study, Pearson Correlation Moment was used. From table 1, it showed that GRO has positive relationship with ROA at 5% significant level and CST but negative relationship with TAT, DPR and CFR at 5% significant level respectively.

The overall correlation results implied that the null hypotheses 1, 4 and 5 were rejected as there is existence of significant relationship between sustainable growth and profitability, dividend payout ratio and cash generated from operation, while hypotheses 2 and 3 were accepted.

The absolute value of the correlation result in table 1 is low with the highest value of 0.403 thus showed absence of multi-collinearity among variables. As values exceeding 0.80 are considered as indicator of multi-collinearity.

Table 1 Pearson Correlation Moment

	GRO	ROA	CST	TAT	DPR	CFR
GRO Pearson correlation Sig. (2-tailed)	1					
ROA Pearson correlation Sig. (2-tailed)	.376* .000	1				
CST Pearson correlation Sig. (2-tailed)	.191 .420	.064 .789	1			
TAT Pearson correlation Sig. (2-tailed)	-.386 .093	-.240 .309	-.355 .011	1		
DPR Pearson correlation Sig. (2-tailed)	-.409* .004	-.277 .237	-.300 .198	.349* .047	1	
CFR Pearson correlation Sig. (2-tailed)	-.486* .030	-.423 .063	.060 .802	.403 .708	.200 .025	1

** correlation is significant at the 0.01 level (2-tailed)

*correlation is significant at the 0.05 level (2-tailed)

Regression Analysis

A major weakness of Pearson Correlation is that they do not allow identification of causes from consequences. Therefore, to overcome this weakness regression analysis was employed to investigate the impact of ROA, CST, TAT, DPR and CFR on GRO. The results were as

presented below in table 2 and 3 and 4 is the model summary. The model was recalled for emphasis: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon$.

The regression results were shown in table 2, 4 and 4. Table 2 in the Model summary. R-square measured the proportion of the variation in the dependent variable (GRO) that was explained by variations in the independent variables (ROA, CST, TAT, DPR and CFR). In this study, 96.6% of the variation (and not the variance) was explained while 7.4% was unexplained. Adjusted R-square measured the proportion of the variance in the dependent variable (GRO) that was explained by variations in the independent variables (ROA, CST, TAT, DPR and CFR). In this case it was revealed that 88.7% of the variance was explained while 21.3% was unexplained. Durbin-Watson test was used to find out whether or not there was autocorrelation in the residuals. The values of Durbin- Watson have an upper limit of four and lower limit of zero. If the value is equal to two, then there is no autocorrelation. In this case the value of Durbin-Watson was 2.084 which showed that there was no auto correlation in the residuals (Kohler, 1994).

The overall significance of the model was assessed by the value in the ANOVA table shown in table 3. The result indicated that the model is significant as shown in the value of F-value of 30.684 and a P-value of .000 which is less than 0.05.

Table 2: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.957 ^a	.916	.887	.12209	2.084

a. Predictors: (Constant), CFR, CST, ROA, DPR, TAT

b. Dependent Variable: GRO

Table 3: ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.287	5	.457	30.684	.000 ^b
Residual	.209	14	.015		
Total	2.495	19			

a. Dependent Variable: GRO

b. Predictors: (Constant), CFR, CST, ROA, DPR, TAT

The Standardized Beta Coefficients of the variables shown in table 4 indicated that all the predictor variables made contributions to the variation in the dependent variable, however, at varying degree. This is shown in the result of the model below:

$$\text{GRO} = -.217 + .671\text{ROA} - .001\text{CST} - .023\text{TAT} - .581\text{DPR} + .185\text{CFR} + \varepsilon$$

The result as shown above indicated that in the absence of profitability, no capital injected into the company, assets are not utilized, no cash flow and no dividend is paid, there would be negative growth, that is no growth which appeals to common sense.

There is positive effect of profitability (ROA) on growth which is significant. This means that as profitability increases there will be increase in growth, all other things being equal. There is inverse relationship between GRO and CST although it is not significant. This means that the manner and the way a company is financed has effect on the growth of the company. There is negative relationship between GRO and TAT which is not significant. The implication is that assets utilization has bearing on the growth of the company. If the assets are utilized judiciously, the better for the company, this eventually will culminate into growth of the company. Similarly, there is inverse relationship between GRO and DPR which is significant while in the case of GRO and CFR there is positive relationship which is not significant.

Table 4: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.217	.118		1.836	.088
ROA	.671	.074	.781	9.107	.000
CST	-.001	.108	-.001	-.010	.992
TAT	-.023	.056	-.044	-.414	.685
DPR	-.581	.137	-.405	-4.245	.001
CFR	.185	.284	.065	.651	.526

Source: Researchers' Computation

Hypotheses Testing

The information in table 4 above was used to test the hypotheses formulated above.

Table 5: Hypotheses Testing

Model	Coefficient	t-statistics	Sig. Level	Hypotheses	Decision	
ROA	.671	9.107	.000	H ₀ 1	Do not reject	
CST	-.001	-.010	.992	H ₀ 2	Do not accept	
TAT	-.023	-.414	.685	H ₀ 3	Do not accept	
DPR	-.581	-4.245	.001	H ₀ 4	Do not reject	
CFR	.185	.651	.526	H ₀ 5	Do not accept	

Source: Table 4

The result of the hypotheses disclosed that hypothesis 1 and 2 were accepted. This means that there is significant relationship between GRO and ROA; and DPR. Furthermore, the result showed that there is no significant relationship between GRO and CST, TAT and CFR.

Conclusion and recommendation

The cardinality of strategic growth management cannot be over emphasized. This is because the research work showed that the overall sustainable growth in Dangote companies is enhanced if ‘target variables’ that is profitability, capital structure, total asset turnover, dividend payout and cash flow are well managed.. The result of the study showed that there is significant relationship between sustainable growth and profitability in one hand and significant relationship between sustainable growth and dividend payout on the other hand. In addition the study showed that there is no significant relationship between sustainable growth and capital structure, total asset turnover and cash flow. Sustainable growth rate is a practically applicable concept in the modern financial management context which can be used as a strategic planning and controlling tool of a firm. Therefore, there is need for management to formulate strategy on policies to be pursued as it affects all the variables that are connected in one way or the other with growth vis- a- vis profitability, capital structure, asst utilization, dividend policy and management of cash flow. Further research should be conducted taking into consideration more financial ratios and can as well be directed towards other industry in the Nigerian Stock Exchange.

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