

Effect of Target Costing on Profitability of Industrial Goods Firms in Nigeria

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Abstract

The study focused on the effect of target costing on profitability of selected industrial goods firms in Nigeria. By way of review of the effect of target costing practices on cost planning, cost reduction and gross profit from production, the focus was achieved. After a thorough review of literatures, three hypotheses were developed and tested. The population of the study consisted of selected industrial goods firms in Nigeria. Secondary data was gathered from the reports of the selected firms listed in the Nigerian Stock Exchange (NSE). Hypotheses were tested using a Z-Test statistics at 5% alpha level. Result from the study shows a significant positive increase of profitability of industrial goods firms in Nigeria that practices target costing. Hence, we recommend that industrial goods firms in Nigeria should practice target costing in their costing system in order to be efficient in the way of resource management and effective in cost control to ensure increased profitability.

Keywords: Target costing, cost planning, cost reduction and profitability.

INTRODUCTION

Target costing (TC) is a management technique in which prices are determined by market conditions, taking into account several factors; homogenous products, level of competition, no or low switching costs for the customer etc. When these factors come into the picture, management wants to control cost as they have little or no control over the selling price.

CIMA defined TC as “a product cost estimate derived from a competitive market price. Mathematically; $TC = SP - PM$

Where;

TC = Target Cost

SP = Selling Price

PM = Profit Margin

The technique required that managers change how they think about the relationship between cost, price and profit. Generally, the approach is to develop a product, determine the production cost of that product, and set a selling price, with a resulting profit. It is a system that is effective in managing cost in new view product design and development stages, that is, allowing production cost of a proposed product to be identified so that when sold it can generate the desired profit level (Adeniyi 2012).

Industries such as industrial goods firms have very intense competition where prices are determined by supply and demand in the market and the producer may not be able to effectively control selling prices, but can only, perhaps, control their costs, so management will only focus on influencing every component of the product, service or operational cost. Controlling cost involves providing clear cut information on what cost should be incurred and what cost was actually incurred and taking action to ensure that the actual occurrences agree with the target, thereby, allowing normal reference for revaluation of performance, through the preparation and use of target cost and measurement at the points of incidence. This will enable firms to present target cost of materials and processes while employees are compelled to the cost which enhances productivity, cost minimization and employee efficiency.

However, even with these benefits achieved by a firm from using target costing technique for cost control and cost management, it still has some draw backs such as; Setting unattainable targets, operating managers’ negative attitudes towards the set target, variation in labor rate per hour among different organizations which depends on the economic variables, political instability and changes in government, frequent changes in the level of technology, the problem of identifying the special needs of customers and changes in macroeconomic policies (Yoshikawa 1993; Dean 1998) hence, the need for a research to empirically test the effect of target costing on firm’s profitability.

The main objective of this study is to ascertain the effect of target costing on the profitability of industrial goods firms in Nigeria.

Specific objectives are;

- (i) To examine the effect of cost reduction on gross profit.
- (ii) To examine the effect of cost control on gross profit.
- (iii) To examine the effect of cost planning on gross profit.

In order to achieve the set objectives, three null hypotheses were formulated

H₀1: Cost reduction has no significant effect on gross profit

H₀2: There is no positive effect of cost control on gross profit

H₀3: Cost planning has no significant effect on gross profit

LITERATURE REVIEW

Conceptual Review

The concept of Target Costing is representing the difference between target prices (paid by potential customer) and the reasonable profits. It acts as a tool for reducing cost at the existing level as well as plan and designs the cost reduction at various stages of a product life cycle. It is a systematic approach to establishing product cost goals based on market driven standards, a strategic management process for reducing costs at early stages of product planning design. It begins by the way of identifying customers' needs and calculating acceptable target sales for the product.

Target cost can be calculated thus;

Target Cost = Expected Selling Price – Desired Profit.

Target costing is different from standard costing in many ways. Target costs are determined by market driven standards (Target sales price – Target profit = TC) while standard costs are determined by design driven standards with less emphasis on what market will pay (engineered cost + desired mark up = desired sales price). Again, from the stage of the product through the life cycle, Target cost is set. Target cost is normally less than current cost thus, managers should try to reduce cost from the design and manufacture the product.

And cost can be reduced (cost drift) in some of the following ways:

- (i) Simplifying the design
- (ii) Reducing the cost of direct materials
- (iii) Reducing the direct market cost
- (iv) Eliminating waste, by making such analysis like;
 - a) Reverse engineering
 - b) Value analysis and
 - c) Process improvement which tears down the competitors product with a view of ascertaining more design features that create cost reductions, assess the value placed on various product functions by customers, reducing cost of providing the function by using common components, evaluate the processes used to produce and market the product and thereby, redesigning such processes to improve their efficiency to achieve the needed cost reductions.

The principles of target costing to Lawal, (2012) involve the following:

- 1) **Price – led costing:** where the price at which a product can be sold in the market place is first determined and then the target profit margin subtracted from it to arrive at the target cost.
- 2) **Focus on the customer:** designing products to satisfy customer demand and be sold at a price they are willing to pay, working towards answering questions as to what products do the customers want? What features are important and how much they are willing to pay for a certain level of product quality.

- 3) **Focus on product design:** designing a product for manufacturability by specifying the raw materials and components to be used as well as the labour, machinery and other elements of the production process
- 4) **Focus on process design:** ensuring efficiency in the production process with use of touch labour technology, global sourcing in procurement with the products target cost in mind.
- 5) **Cross-functional teams:** all hands must be on deck to achieving the target costing process from market research, sales, design and production engineering, procurement, material handling and cost management.
- 6) **Life cycle costing:** this is considering all of the products LCC which includes the cost of product planning and concept design, preliminary design, detailed design and testing, production, distribution and customer service
- 7) **Value chain orientation:** when projected cost of a new product is above the target cost, eliminate non-value added cost by determining the firm's entire value chain to identifying opportunities for cost reduction.

Target costing is a common practice in the industrial goods firms in Nigeria where the market is extremely competitive. Again, because industrial goods consumers are often times producers of other goods thus, needs to be focused on. The industrial goods market most of the times determines the price of product and there is little opportunity for the producers of such industrial goods to set prices. Thus controlling cost is very important, as it will be reflected in the profit of the firm.

Concept of Profitability

Profit is the difference between revenues and expenses over a given period of time (basically one year) Pandey, (2010). Every business organization would want to make sufficient profit, even the non-for-profit business organization can only stay in business if and only if it can take care of its expenses with a left over profit not a loss. Thus a firm should earn profit in order to stay, survive and grow over a long period of time. The ability of company, organization, firm or an enterprise to make profit from its business activities is referred to as profitability. This can be achieved when the management is efficient in using all the resources (human and material) available in the market. Profitability is derivable through efficiency, thus, it is a measure of efficiency and management guide to greater efficiency. Efficiency combined with factors such as the degree of competition that a firm faces, the state and strength of demand, market competition, advertising, campaign substitutes, costing methods to the efficiency of the firm, affects the profitability of the firm.

The firm calculates gross profit by subtracting their manufacturing costs from revenue generated after sales. Thus, the gross profit is the money difference between the costs of goods sold and net revenue generated.

Theoretical review

The efficiency structure theory (ES) hypothesis states that firms earn high profits because they are more efficient than others. The two distinct approaches within the ES are the X – efficiency and Scale – efficiency hypothesis.

The X-ES posits that more efficient firms are more profitable since they have low costs, gain

larger market shares manifested in higher levels of market concentration, but without any causal relationship from concentration to profitability (Athanasoglou, Delis, & Staikouras, 2006). More emphasis is placed on economics of scale rather than differences in management or production technology in the scale approach. It established that larger firms can lower unit cost and higher profits through economics of scale, which enables large firms to acquire market share, which again may manifest in higher concentration and then profitability. Thus, the efficiency structure theory is in tandem with the study.

Empirical review

A study carried out by Siyanbola and Raji (2013) focused on the impact of cost control on manufacturing industries profitability using West African Portland cement Plc. Cost control was viewed from a strategic point. Using Pearson correlation model in analyzing the data, and testing the hypothesis revealed a positive impact of cost control on the firm's profitability. These findings confirmed that cost control has a positive impact on business profitability and that such element of cost; materials, workers' behavior, labour and overhead cost could be controlled strategically with measures such as responsibility accounting data collection and data reporting.

Companies should be equipped with accurate cost modeling procedures in order to manage costs and ascertain acceptable profit margin (Cokins, 2002). More so, with larger competition, the initiation of new products must outdo product becoming out fashioned.

As suggested by Salter (1995) Performance measurement of corporate and business unit has three dimensions;

- (i) Effectiveness (the degree to which a predetermined objective target is met).
- (ii) Efficiency and adaptability.
- (iii) In the dimensions of return on investment, sales growth and new product success.

Statistical process control is an efficient way in cost control and cost reduction techniques and Reeve and Philpot (1988) defining the process from the perspective of the financial manager, is the pegging of Statistical process control. And the characteristics of the process are measured and observed overtime, when there is control charting the difference from the mean is studied carefully to identify correctly if the results in any special difference needs better attention. By way of Statistical process control, firms can significantly improve organizational effectiveness, product quality and process efficiency. It is a common phenomenon in every setting; family, society, business, government, etc. that efficiency and effectiveness is the basis for growth and development. If firms are to make profits in order to stay, grow and develop their businesses, they have to be efficient and effective in the management of their resources.

METHODOLOGY

The population of the study involved the 164 firms listed with the Nigeria Stock Exchange (2017). Listed firms are companies whose stock trades on a stock exchange (Cretchen & Campbell, 2012). Seventeen (17) industrial goods firms were considered, secondary data was extracted from the published audited annual reports and accounts of the firms as published by the Nigeria Stock Exchange. The choice of industrial goods was because of the important role they play in the development of the Nigerian economy. These are goods that are bought and used for industrial and business use, which includes machinery, manufacturing plants, raw materials etc. They are used for the production of other goods such as consumer goods (Soludo, 2009).

The regression research design is adopted for the study and the model used is as follows:

$$FP_{it}=a_0+a_1(CR_{it})+a_2(CC_{it})+a_3(CP_{it})+a_4(ST_{it})+e_{it}$$

Where:

FP_{it} = Firm's profitability for each company (i) per year (t).

CR_{it} = Cost reduction for each company (i) per year (t).

CC_{it} = Cost control for each company per year.

CP_{it} = Cost planning for each company per year.

ST_{it} = Dummy variable which represents the type of stakeholder that benefits from Target costing. Those that benefited takes the value 0, and those that do not benefit takes the value 1.

a_0 = the constant term,

$a_1...a_4$ = the coefficients of the independent variables

e_{it} = the regression residuals/error term.

The variables CR_{it} , CC_{it} , CP_{it} and ST_{it} are employed as control variables.

The decision rule is to accept the null hypothesis when the alpha value is less than the probability values, otherwise we reject.

Measurement of variables and results

The dependent variable of the study is firm's profitability, while the independent variable is target costing.

Observations:164	Mean	Median	Standard deviation	Minimum	Maximum
Accounts receivable	30105.31	11712.5	64754.2	141	573600
Variation of accounts receivable	225.812	239	15940.17	-146721	165237
Fixed assets	182142.4	210382.5	606187	302	570000
Total assets	233235.6	42662.5	532650	1532	500000
Sales	192145.6	32345	407306	611	306000
Variation of sales	19480.53	1511	67105.2	-643575	582821
Profit(loss) before taxes	10338.64	848	4381.7	-135634	403000
Net income	7763.22	632	3128.33	-116768	246000
Cash flows (operating activities)	11403.31	734	59788.9	-88203	631200
Total accruals	-2043.668	8.5	44232.7	-572700	16324
Total accruals/ Total assets	0.0015345	0.000232	0.506204	-1.046283	0.554871

Table(1) Source: Researchers' stats.

Observations:164	Non – target costing (model 1)	Target costing (model1)	Non- target costing (model 2)	Target costing (model2)
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Mean	0.0007725	0.0007004	0.0005846	0.0003388
Median	0.0008232	-0.0006685	0.0009264	-0.0007317
Standard deviation	0.0080234	0.0571554	0.0071166	0.0578436
Minimum	-0.0310531	-0.871068	-0.0335767	-0.854735
Maximum	0.1344518	0.176102	0.0913063	0.452232

Table (2) Source: *Researchers' stats.*

$$FP_{it} = a_0 + a_1(CR_{it}) + a_2(CC_{it}) + a_3(CP_{it}) + a_4(ST_{it}) + e_{it}$$

FP	Coefficients	Std. Err	T	P>t	95% coef.	Interval
CR	0.233***	0.044	3.120	0.000	0.150	0.371
CC	0.001**	0.000	5.210	0.000	0.001	0.001
CP	-0.0004*	0.000	-0.610	0.022	0.000	0.000
ST	0.0052**	0.003	0.720	0.012	0.000	0.013
CONSTANT	-0.014***	0.001	-1.250	0.000	-0.015	-0.006

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

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

*significant at the 0.01 level (2-tailed)

Table (3) Source: *Researchers' Stats.*

Discussion

Table 1 presents the pooled data of the assets of the firms.

Using model 1 and 2 with target costing and non-target costing practices (table 2), an increase in target costing tends to increase profitability. Table 3 shows that target costing is significant at 0.01 levels. On the basis of these outcomes, the null hypothesis can be rejected and the alternative hypothesis is accepted. Target costing has a positive significant relationship with firm's profitability, and that cost reduction, cost control and cost planning measures tends to increase the profitability of listed industrial goods firms in Nigeria. These findings are not far from the findings of previous research.

Conclusion

The study focused on the effect of target costing on profitability of selected industrial goods firms in Nigeria. By way of review of the effect of target costing practices on cost planning, cost reduction and gross profit from production, the focus was achieved. After a thorough review of literatures, three hypotheses were developed and tested. The population of the study consisted of selected industrial goods firms in Nigeria. Secondary data was gathered from the reports of the selected firms listed in the Nigerian Stock Exchange (NSE). Hypotheses were tested using a Z-Test statistics at 5% alpha level. Result from the study shows a significant positive increase of profitability of industrial goods firms in Nigeria practices target costing. Hence, we recommend that industrial goods firms in Nigeria should practice target costing in their costing system in order to be efficient in the way of resource management and effective in cost control to ensure

increased profitability.

Based on the findings of the study, it is in the opinion of the researcher that;

The cost accounting departments of Industrial goods firms in Nigeria should make effort to practice target costing system in cost management.

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