Impact of Bulk Procurement System (BPS) and Price Regulation on Profitability of Oil Marketing Companies in Tanzania

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Abstract

The aim of this study is to analyse the impact of price regulation and BPS on the profitability of OMCs. Four Companies that were in the operation before and after the introduction of price regulation and BPS used for analysis. In order to maintain confidentiality, these companies will be anonymously named as Company "A", Company "B", Company "C", and company "D". The study covers a period from 2011 to 2013. Secondary data from audited financial statements and management reports were collected and analysed. Profit margin and return on investments were calculated to establish the profitability of oil companies. Data collected was analyzed using SPSS. Regression model and trend analysis of profit margin before and after the introduction of price regulation and BPS was also carried out. The study found that after the introduction of price control and bulk procurement system company "B", is the most affected in its financial performance compared to other companies. In addition, the study found that, there is a relationship between dependent and independent variable. The study concluded that introduction of price control and BPS slightly reduced the profit of OMCs. However, it stabilize the price and ensure sustainable profit to OMCs at the sometimes protect customer and create an equal playfield for all OMCs. The study recommends that EWURA as a regulator should investigate further to improve suitability and applicability of price cap formula. The investigation should focus on protecting the profitability of wholesalers and retailers without jeopardize the welfare of the customer and the economy at large. On the other hand, the study recommends that OMCs should strive to reduce operational costs so as to increase their operating profits. The OMCs should make sure that they work efficiently by minimizing their operating expenditures so as to increase their profitability. The importing company should use money market to hedge against the risk of rising international oil prices as this constitutes a significant proportion of their direct costs.

Keywords: Bulk Procurement System (BPS), Price regulation, petroleum products, profitability, OMCs

1. Introduction

Tanzania experienced a prices shock on petroleum products between 1980s and 2006. The government revealed that Oil Marketing Companies (OMCs) were making a supernormal profit due to international price changes. OMCs were typically responsive when the international price goes up, or when there is a sign that the price will increase even if they still have the same stock that they bought at a lower price. In order to control this practices, and protect the consumer and ensure an equal play field, the government established Energy and Water utilities Regulatory Agency (EWURA) in 2006 as a regulator to regulate among others all activities related to petroleum products. The functions of EWURA are stipulated in the Act (EWURA Act), among others include licensing; establishing standards for goods and services under its jurisdiction. Regulating rates and charges; monitoring the performance of the sectors with a view to improving product availability. It was also entrusted to ensure that product quality, cost efficiency, standards of services, efficiency of supply are maintained. Similarly, it is responsible to supervise investment levels and distribution of services; facilitation of the resolution of complaints and disputes; and dissemination of information about matters relevant to its functions. These functions are in line with the main Strategic Objectives that have been identified to include: least-cost investments in the regulated sectors promoted. The quality and access to regulated services improved; public Knowledge, Awareness and Understanding of regulatory functions in the regulated sectors enhanced; EWURA functions effectively and efficiently managed, and interventions against HIV/AIDs increased. (EWURA strategic Plan). In line with these strategic objectives, in carrying out its functions, EWURA is striving to improve the wellbeing of people in Tanzania by encouraging effective competition and economic efficacy. It is also attempting to protect the welfares of consumers and defending the financial viability of well-organized suppliers. Similarly, EWURA is responsible in promoting the accessibility of regulated services to all people including low-income, people leaving the countryside and deprived consumers. Equally, it is responsible to ensure that people protect and

preserve the environment; enhancing public knowledge, consciousness, and acceptance of the regulated sectors. In a way of exercising its powers and performing its responsibilities, on January 2012, EWURA established the Bulk Procurement System (BPS) in connection with Retail Pump Price CAP (RPP – CAP). The established system is a supply system through which all player will be assured of the security of petroleum products supplies at the most competitive price and at the same time protect the interest of players including OMCs and consumers. Since its establishment in 2006, EWURA reported significant achievements in terms of the implementation of price regulation and bulk procurement. EWURA comprehend that, price control has been able to improve petroleum revenue collection and, therefore, improve the welfare of Tanzanians. However, on the other hand, OMCs are questioning the effectiveness of the current system, arguing that, the current system has a significant effect on their profit. Therefore this study attempts to analyse the impact of BPS and price regulation on profitability of OMCs

2. Literature review

2.1 Price Regulation

Economists believe that market prices should be determined by the forces of demand and supply. It is presumed that, goods and services are to be allocated to those who value them most, and stiff competition will ensures that consumers face the lowest possible prices. There will be perfect information about the market to both buyers and sellers and, therefore, neither side will influence the price. However, in practice these conditions are not exist and competitive forces are insufficient to the extent that the invisible hand may fail to determine the price. Therefore, it is necessary to intervene in such instances, in order to provide the regulatory support needed to correct such market failures.

Therefore, price regulation is the practice of governments intervening the market failure by dictating the prices of products that may be sold in the marketplace. Price regulation is most common when the product seems to be essential and supposed to be accessed by everyone. The price regulation is meant to measure or control market imperfection. Some scholars opposed the use of price regulation claiming that price regulation suffocates investment and innovation.

2.2 Bulk procurement

In the context of importation of petroleum products in Tanzania, The current system (BPS) involves International Competitive Bidding (ICB) tendering in which the winner allowed to import the products on behalf of others. The importation are made in bulk that helped to enjoy economies of scale. It is anticipated that, this system will leads to transparency in the procurement of supplies and competitive CIF costs, it will improve the availability of data on imports and products quality monitoring. Implementation of that arrangement was also in line with Section 8(1) (a) of the Petroleum (Interim) Regulations, 2000. It stipulates that the Importation of Petroleum shall be made from a supply source that generates competitive prices for the country.

2.3 BPS, Price regulation and Profitability

BPS allow one company to import petroleum product in bulk on behalf of other companies. On the other hand, in controlling the price, the government indicate categorically the cost involved and the margin that will be obtained by the wholesaler and retailers. EWURA decided to implement Bulk procurement system (BPS) accompanied by the price control through Retail pump price CAP starting from January 2012. EWURA believed that, with BPS and Retail Pump Price CAP in place, there will be a reliable and efficient delivery of downstream petroleum products in a way that protects the interests of providers and consumers. Moreover, in turn there will be a reduction of the purchasing price, importation cost, the cost of freight and Insurance will also be reduced. There will be proper control and administration that will result in accurate data and, therefore, proper assessment of Tax, price stability and constant availability of the product. All these contribute positively to the profitability of OMCs.

2.4 Empirical literature review

The concept seems to be new in Tanzania, however, there are few study already being done in other places and received different observations

Golec. H. J and Vernon A. J (2006) studied the effects of European pharmaceutical price regulation to firm profitability and spending on research and development. It was a comparative study that compared between a

price regulated market and a non-regulated market. They take European Union (EU) to represent the regulated market and United States (US) to represent the non-regulated market. The study used geographical sales data as contained in the financial statements for 19 years up to the year 2004. They carried out a cross-sectional relation between EU price regulations and R&D spending at the firm-level. They used real pharmaceutical prices as a proxy for the effects of price regulations and political pressure in the U.S. and EU over time. Regression analysis was used to measure the sensitivity of a firm's sales to U.S and EU price indices, respectively. The study found that, in the regulated market consumers enjoyed lower price inflation at the expense of new research and innovation development. They further revealed that, in comparison unregulated firms (US firms) were more profitable compared to their regulated counterpart (the EU firms). The coined that, unregulated firms (the US firms) earned higher stock returns and spent more on research and development (R&D). Similarly, the study showed how price controls led to lower profitability, lower stock returns, and reduced spending on research and development by EU firms compared to U.S firms. The study concluded that companies whose sales are more closely related to EU real pharmaceutical prices spent less on research and development were less profitable and earned smaller stock returns. Some of the limitations of the studies were; data used included only publicly reported data. On the other hand, Firms are reporting total R&D, not spending by geographic area and total R&D spending could include R&D spent by non-pharmaceutical divisions of the company.

Carranza et al., (2009) studied the effect of price regulations on the organization and performance of the gasoline market in Quebec and other parts of Canada. The goal of the research was to demonstrate that price regulations can have substantial unexpected results on efficiency and effective rates and productivity which in turn in the longer run distorting the structure of markets. They argued in particular that price control policies crowded markets hence creating an endogenous barrier to entry for low-cost retailers. The study revealed accurate measures of sales and station characteristics since each site was visited by the researcher in person, and volume sold was measured by reading the pumps' meters. The period considered spanned eleven years between 1991 and 2001 and included all 1601 stations in fourteen selected cities of Quebec and three other Canadian provinces. The data contained detailed information on individual stations' sales volume, posted price, and characteristics and allowed them to study the effect of price control on station behavior at the local market level. The sample of the study includes gasoline stations before and after the implementation of price control policy. For the analysis, they run regression analysis on a set of selected variables that measure the endogenous structure of the market, before and after the introduction of the policy. They showed that as a result of the price regulation policy, prices were lower, and competition was higher than before the price control. The results, therefore, highlighted that price regulation affects market structure and can, therefore, have unintended consequences on the profitability. While the truth of this analysis may hold in short-run, it did not consider the dynamic equilibrium consequences of price controls.

Dalen et al., (2006) studied the effects of price regulation on generic competition in the pharmaceutical market in Norway. The dataset was provided by the Norwegian Social Insurance Agency and covered monthly observation of the six chemical substances included in the index price system. The data was collected from 22 pharmacies in Norway in the period 1998-2004. The study established a structural model that enabled examination of the impact of the price regulation on both demand and market power. The sample of pharmacies was considered to be representative for the sale of drugs in Norway. The primary variables reported by the pharmacies were the volume of sale, both in retail value doses for each product. These were used to calculate the prices per DDD and market shares of each product within the submarket (chemical substance). The results suggested that the price caps helped to increase the market shares of generic drugs and succeeded in triggering profitability.

Seo and Shin (2010) studied the impact of price cap regulation on productivity growth in the US telecommunications industry. They used a stochastic frontier approach to analyse technological progress, productivity growth, and the efficiency change for 25 LECs for ten years from 1988 to 1998. The study examined the relationship between the change in productivity growth, regulatory regime variables, and other control variables. The study found that, there has been pronounced positive effect of price cap regulation on productivity growth. The study found firther that the price cap regulation has a significant and positive effect, both in contemporaneous and lagged specifications. They found that every 24 out of 25 and every 23 out of the 25 firms in the sample noted to have an increase in mean technological change and increase in annual productivity growth respectively.

Danzon and Epstein (2008) examined the effect of price regulation and competition on launch timing and pricing of new drugs. They applied a Cox proportional hazard model to analyze the data. The launch experience in 25 major markets of 85 new chemical entities (NCEs) launched in the UK or US between 1994 and 1998. There were 1,167observed launches or about 55% of the maximum. The data covered launch experience in 15 countries

for drugs in 12 therapeutic classes that experienced significant innovation over the decade 1992-2003.The study used prices of established products as a measure of the direct effect of a country's regulatory system and found that launch timing and timing of innovative and creative drugs were determined by prices of established products. The limitation of the study was the lack of data to separate out the authorization delay from the price/reimbursement delay and, within the price/reimbursement delay. However, this component is due strictly to the administrative process versus the component that is related to disagreement over the price.

Knittel and Stango (2003) tested whether a nonbinding price ceiling may serve as a focal point for tacit collusion in the United States. They used data from the credit card market during the 1980's. During the sample period, most credit card issuers faced state-level price ceilings that could plausibly serve as focal points. These price ceilings varied across and within states; there was also a group of countries with no limit. More importantly, many issuers matched their ceiling—particularly in the early years of the sample. Finally, states and issues vary in characteristics thought to affect the sustainability of tacit collusion. The data, therefore, display heterogeneity in firm behavior, focal points, and market characteristics. This allows the researchers to conduct a variety of tests related to the focal point hypothesis. The study used an empirical model that could distinguish instances when firms match a bidding ceiling, for example, when firms tacitly collude at a non-binding ceiling. The results suggested that tacit collusion at nonbinding state level limits was prevalent during the early 1880's, but that national integration of the market reduced the sustainability of tacit collusion by the end of the decade. The results thus highlighted the perverse effect of price regulation.

Earle et al., (2007) explored the issue of price caps under uncertainty. The focused on the theoretical properties of price caps that underlie the justification of the use of price caps in a variety of contexts. The study coined that predictions of the deterministic theory change drastically if the demand is uncertain. It is presumed that in the deterministic case, the introduction a price cap results in increased production, increase in total welfare and decrease in prices and increase in consumer welfare. The study further comprehends that there is a need to maintain a balance between price control and through the price cap and the greater incentives for efficient behavior with significant investment needs and subject to substantial demand or technological progress uncertainty

orton I. K and Daniel R. V (1991) Recently there has been a debate on whether market competition is the best way to ensure the quality of services or not. Marton and Daniel (1991) studied the effects of price regulation and revealed that free competition results into an under-provision of quality from a social perspective. Price control in the form of price floors sometimes presumed to increase the quality of services. However, their implementation changes the environment of competitive behaviour in subtle ways and often changes the relative positions of firms in the market. They further revealed that the price floor cannot achieve the socially optimal quality choice, but the price floors can only make a quality improvement if it leads to overinvestment in quality. In addition to the concept of a price floor, they also associate the effect of consumer ability to learn, and the quality of the product offered. They argued that if consumers do not learn quickly about what happen in the market, the quality will be affected. If the consumers learn about what happen in the market, they may producers of service to improve the quality because firms usually get an advantage of consumer uncertainty. Therefore, clear way of advertising about the firm's product and prices is not in the firm's best interest of the supplier.

Africanglobe (2011) conducted a research in Kenya in the year 2011. The study involved the major oil marketing companies in Kenya. The findings of the study revealed there has been a reduction in profit margins, and increased competition as a result of caps. The reduction in profit margins induced big oil marketing firms to left the Kenya market as well as other African markets and shift their focus to the most lucrative exploration and production activities. Example Shell, which is an Anglo-Dutch giant, was the latest oil company to exit out of Kenyan oil market. This decision follows the decision of other five giant oil firm that have left Kenya oil market before shell. The companies that have exited Kenya oil market before Shell are Caltex (Chevron), Beyond Petroleum plc. (BP), Mobil, Agip, and Esso. Shell withdrew from all African operating markets except Egypt and South Africa. The study point out that, these companies were left Kenya due to over decreasing of profit margins

Wabobwa (2011) studied on the impact of oil price regulation on the financial performance of National Oil Corporation of Kenya (NOCK).The research covered a period of twelve months between the year July 2010 and June 2012.The study used data from published audited semiannual reports. The performance of the company was analyzed using ratios for the period before and after the introduction of price regulation. He used Microsoft Excel as a tool of analysis, and the results were presented using tables and graphs. He found that, after the introduction of oil price regulation in the oil market, the gross profit margin has been reduced tremendously thus shrinking the company's gross profit. The study was based on only one company. Therefore, the results could not

give the real picture of what is happening. Companies.

Fu Fu-long and Huang Jian-bais (2008), While most authorities are trying to cut cost so as to improve social benefit to the consumer, there has been a problem of trade-off between cost cutting and quality of the product offered. The best way of reducing cost is by improving efficiency. However, this is not the case in many suppliers. Fu Fu-long and Huang Jian-bais (2008) in their study they attempted to associate the regulated price Caps regulation and service quality of the power transmission enterprise. They revealed that the tendency of many regulators to consider cost cutting as motivation may lead to investment distortion. They used Malmquist productivity index where they combined the price regulation with the transmission service quality incentive of power transmission enterprise to balance the cost saving and service quality.

Kusewa (2007) studied the impact of regulation of retirement benefits sector in Kenya. In his study, he found that, with the existence of control there has been a substantial favorable impact on the fiscal performance of the population of work-related retirement benefits schemes. The period of the study was between 1995 and 2005 being five years before and after the establishment of the Retirement Benefit Act (RBA). From the registered pension schemes in the year 2005, a sample of nine schemes was selected. Financial performance of the scheme was analyzed through ratios for the period under review. The results indicated a consistent improvement in the financial performance of the pension schemes after the implementation of the regulatory guidelines by the (RBA). In his conclusion, he noted that the introduction of the regulatory guidelines for the pension industry increased the credibility of the insurance players.

Hans H. H, and James. E. T (1975), in their Study on Oil Price Control: A Counter Productive Effort they reveal that the control process was successful since the effective domestic price for petroleum remains in fact below world market prices. The analyses suggest that the control program was in conflict with its stated purpose over the long run. In particular control provide disincentive to producer of oil domestically and incentive to import oil as a result of importation then the price will rise again

Hans B. C et, al. (2013) conducted a study on price transparency regulations in over thirty states as an attempt to find out the effects of these regulations. They used micro data on actual healthcare purchases, and exploiting both between- and within-state variation to address indigeneity concerns. They revealed that price transparency regulations reduce the price charged for standard, uncomplicated, elective procedures by an average of approximately 7%. The further coined that further evidence indicates that the reduction in cost prices is intense where competition among providers is most high. Usually, the reduction is characterized by the tendency of strong companies to reduce the prices of their products. Similarly, they found that that insured patients that change providers are more likely to switch to a lower cost provider subsequent to regulation. Overall, they indicate that price transparency regulation leads to a reduction in healthcare prices for patients with incentives to consider costs.

3. Research Design, Methodology and Data

This study attempt to understand the causal relationship of two variables where one variable produce changes in another. According to Cooper and Schindler (2003) the casual research design emphasizes the specific objectives about the effect of changes in one variable on another variable. It shows how the changes or manipulations of an independent variable brings changes to dependent variable. Based on the above illustration, the present study establishes the relationship involving oil sector and the profitability of oil companies before and after introduction of price regulation and bulk procurement system in Tanzania.

3.1 Population and Sample

The downstream petroleum sub -sector in the country has more than 21 Oil Marketing Companies (OMC) which has at least an average 0.333% of market share in the industry. Among them there are 10 major Oil Marketing Companies (OMCs) that have at least 4.5% of market shares. These major companies dominated market shares which they said to have owned or licensed retail outlet located in all regions. This study intended to investigate all oil marketing companies that were in operations in January 2011 to December 2013 but due to availability of data, only four companies which has the market shares of at least 4.5% has been selected as sample. In order to maintain confidentiality the selected companies are named as, Company "A", "B", "C", and "D". The analysis assed the financial performance of these oil marketing companies for a period of the three years (January 2011 and December 2013). This study covers period before and after the introduction of price regulation and bulk procurement system.

3.2 Data and Data Collection Instruments

The study used secondary data extracted from financial statements of the oil companies selected for this study. Financial data used include data from comprehensive income statement, statements of financial position as well as statements of cash flows from 2011 to 2013 for oil companies operating in the country.

4. Data analysis

This section illustrates the data analysis. Both theoretical and analytical model are described.

4.1 Theoretical model

The profitability of the oil companies operating in Tanzania are thoroughly analyzed for the period of 3 years (2011-2013) using secondary data extracted from the financial report of oil companies operating in the country. The study carried out to analyze the impact of the policy on the profitability of the oil companies before and after imposing the price regulations and establishment of BPS

$$Y = g(Z_1, Z_2, Z_3)$$

Where:

Y=Return on capital

Z_1 = profit margin

Z_2 =Turn over

Z_3 =Capital Invested

The objective of return on capital is to show the efficiency and profitability of the company's capital investments. Usually, it is calculated by dividing the earnings by the capital. Profit margin is a ratio applied to assess a financial performance of the company by reassessing the proportions of money left over from revenues after taking into consideration the cost of goods sold and other overhead. In this study, the value is obtained by dividing profit by total revenue. The expected association is that the higher the profit margin holding capital, the higher the return on capital.

4.2 Analytical Model

In this study, the analysis of the impacts of price regulation on profitability was further carried out using trend analysis and regression model. As noted in the methodological chapter the regression model used is expressed as follows:

$$Y = \alpha_0 + \alpha_1 X_1 + \varepsilon$$

Y= Return on capital

α_0, α_1 = Coefficient parameters

X_1 = Profit margin ratio

ε = error term

In this study, the return on capital is a dependent variable, and the profit margin ratio is the independent variable. The strength of the association between the return on capital and profit margin was measured using the correlation coefficients. It is important to note that this measure aims to show the degree of movement associated with the two variables. These factors usually take the value between -1 and 1, where the positive value indicates positive association and the negative value implies the inverse relationship between the two variables. In addition, the coefficient with +1 shows the perfectly positive relation while the coefficient with -1 indicates the perfectly negative association. The coefficient with zero value describes that the variables are not associated.

Profit margin

Profitability ratios are powerful analytical tools that many companies use to determine how well their businesses are performing. Business management, owners, and investors also utilize profitability ratios to compare a business' performance against other similarly situated businesses. Common profitability ratios include profit

margin Ratio (PMR), return on assets (ROA), return on sales (ROS), return on equity (ROE), and return on investment (ROI).

Profit margin tells about the profitability of the company calculated by dividing profit by net sales and multiplying the quotient by 100:

$$PM = \frac{\text{Profit}}{Turnover} X100 ....1$$

Other measures as indicated above are Return on Assets (ROA), Return on Sale (ROS), and Return on Investment (ROI). These are metric measures of how effectively the company produces income from its assets; Sales; Investment; Working Capital; calculated by dividing net income/ profit (NI) for the current year by the value of all the company's assets (A); Sales; Investments; Working Capital and multiplying the quotient by 100:

$$ROA = \frac{\text{Profit}}{Asset} X100 ....2$$

$$ROS = \frac{\text{Profit}}{Sales} X100 ....3$$

$$ROI = \frac{\text{Profit}}{Investment} X100 ....4$$

$$ROWC = \frac{\text{Profit}}{WC} X100 ....5 \quad \text{Among}$$

other thing, this study attempt to establish the movement in the profit margin of the company between the year 2011 and 2013.The results are presented in Table (5.1) and figure (5.1)

Table 1: Annual Profit Margin (%) for Oil Companies

Company	Period		
	2011	**2012**	**2013**
Company "A"	8.75	7.75	7.25
Company "B"	10.75	8.00	7.25
Company "C"	6.5	5.0	4.5
Company "D"	5.5	4.5	3.25

Source: Research data, 2013

(Table1) provide results, which demonstrates that the profit margin recorded by Company "A" in 2011 was 8.75%, followed by 7.75 and 7.25 in 2012 to 2013 respectively. In addition, Company "B", Company "C" and Company "D" profit margin showed a downfall trend from 2011 to 2013 as shown in Table1. In this study, the return on capital is a dependent variable, and the profit margin ratio is the independent variable. The extracted data was analyzed using the SPSS and presented in tables and figures.

Table 2: Regression Model Results for Company "A" in 2011 (Before the Price Regulation and BPS)

Regression Statistics			
R-Square	0.663		
Standard Error	0.012		
ANOVA			
Regression		F	Significance
		3.938	0.186
		Coefficient	t-Stat	P-value
Constant		-0.03	-0.727	0.543
Profit ratio		1.105	1.984	0.186

Regression results for the Company "A" before the introduction of price regulation and bulk procurement system

are shown in (Table 2). Based on the ANOVA statistics as a population parameter, there is the significance level of 19%. The standard error that measures the standard deviation of the company performance around its fit value is 0.012. Based on the statistical theory, the null hypothesis is not rejected because the p-value is greater than 0.05 implying that the regression parameters are zero at a significant level of 0.05.

The R-square (R^2) value is the percentage that shows how much the variance in the independent variable contribute to the changes in the dependent variable (output). Findings show that only 66.3% of the dependent variable is demonstrated by the changes in the independent variables.

Table 3: Regression Model Results for Company "A" in 2012 and 2013 (After the Price Regulation and BPS)

Regression Statistics				
R-Square	0.677			
Standard Error	0.016			
ANOVA				
Regression		F	Significance	
		12.59	0.012	
		Coefficient	t-Stat	P-value
Constant		-0.025	-1.214	0.027
Profit ratio		0.956	3.548	0.012

After the introduction of price regulation and bulk procurement system for 2012 and 2013. Regression analysis results for company "A" are presented in (Table 3). Findings show that changes describe 68% of the company performance in profit ratio. In addition, when taking all factors constant (profit ratio) at zero company "A" would yield values at a negative (-0.025). The overall model is statistically significant with F-value = 12.59 at 5% level of significance. Moreover, when profit ratio increased by one unit, the dependent variable would be increased by 0.956.

Table 4: Regression Model Results for company "B" in 2011 (Before the Price Regulation and BPS)

Regression Statistics				
R-Square	0.760			
Standard Error	0.016			
ANOVA				
Regression		F	Significance	
		6.342	0.128	
		Coefficient	t-Stat	P-value
Constant		-0.526	-6.64	0.057
Profit ratio		2.93	2.518	0.128

Findings of analysis for company "B" for 2011 is presented in (Table 4). From the ANOVA statistics, the significance level is 13%. The standard error which measure the standard deviation of company performance around its fitted value is 0.016. According to the statistical theory, the null hypothesis is rejected only when P-value is less than 0.05. However, this study found that the p-value is not less than 0.05. Hence, the null hypothesis is not rejected implying that the regression parameters are zero at 5% of significance level. In addition, the regression proportion of the dependent variable (profitable) demonstrated by the set of independent variables by 76%.

Table 5: Regression Model Results for company "B" in 2012 and 2013 (After the Price Regulation and BPS)

Regression Statistics				
R-Square	0.698			
Standard Error	0.208			
ANOVA				
Regression		F	Significance	
		13.846	0.010	
		Coefficient	t-Stat	P-value
Constant		-1.53	-8.93	0.00
Profit ratio		10.06	3.721	0.010

The result of the regression analysis for company "B" after the introduction of price regulation and bulk procurement system are displayed in (Table 5). The ANOVA statistics illustrate that the overall model is statistically significant at 5% level of significance (F=13.85, P-value=0.01). Based on this output the null hypothesis is rejected because the P-Value is less than 0.05 and implying that regression parameters are not zero at a significance level of 0.05. Findings further show that the standard error that describe the performance around its fitted value is 0.208. The set of independent variables contribute to the change of the dependent variable (output) by 69%.

Table 6: Regression Model Results for company "C" in 2011 (Before Price Regulation and BPS)

Regression Statistics				
R-Square	0.835			
Standard Error	0.00592			
ANOVA				
Regression		F	Significance	
		11.571	0.077	
		Coefficient	t-Stat	P-value
Constant		-0.006	-0.344	0.764
Profit ratio		0.900	3.402	0.077

Output analysed using the regression model for company "C" for 2011 before the introduction of price regulation, and bulk procurement system is shown in (Table 6) The result gives a significance level of 7.7% and standard error of 0.006.The overall model is statistically insignificance at 5% significance level. As a result, the null hypothesis is not rejected because the p-value is greater than 0.05, implying that the regression parameters are zero at a significance level of 0.05.The proportion of independent variable demonstrate the changes in the output (dependent variable) by 84%.

Table 7: Regression Model Results for company "C" in 2012 and 2013 (After the Price Regulation and BPS)

Regression Statistics			
R-Square	0.021		
Standard Error	0.0114		
ANOVA			
Regression	F	Significance	
	0.130	0.730	
	Coefficient	t-Stat	P-value
Constant	0.034	1.927	0.102
Profit ratio	0.170	0.361	0.730

Data finding for company "C" after the introduction of price regulation and bulk procurement system is presented in (Table 7). The ANOVA statistics show that the level of significance is 73%, and the standard error is 0.0114. Only 2% of the independent variable contribute to the changes in the output of the dependent variable. The overall model is not significant at a significance level of 0.05. Hence, the null hypothesis is not rejected.

Table 8: Regression Model Results for company "D" in 2011 (Before the Price Regulation and BPS)

Regression Statistics			
R-Square	0.800		
Standard Error	0.0071		
ANOVA			
Regression	F	Significance	
	8.00	0.106	
	Coefficient	t-Stat	P-value
Constant	-0.055	-1.718	0.228
Profit ratio	2.00	2.828	0.106

Regression results for the company "D" before the introduction of price regulation and bulk procurement system are presented in (Table 8). Findings reveal that 80% of the independent variable contribute to the changes in the output of the dependent variable with a standard error of 0.007, and the significance level is 11%.

Table 9: Regression Model Results for company "D" in 2012 and 2013 (After the Price Regulation and BPS)

Regression Statistics			
R-Square	0.755		
Standard Error	0.0973		
ANOVA			
Regression	F	Significance	
	18.502	0.005	
	Coefficient	t-Stat	P-value
Constant	-0.157	-1.094	0.316
Profit ratio	17.083	4.301	0.005

Findings for company "D" for 2012 and 2013 are given in (Table 9). The proportion of the independent variable explain the change of the dependent variable(output) by 76%.The standard error that measures the standard

deviation of the company performance around its fitted value is 0.091.

Table 10: Regression Model Results for Total Population (Before and After the Price Regulation and BPS)

Regression Statistics				
R-Square	0.115			
Standard Error	0.3544			
ANOVA				
Regression		F	Significance	
		5.982	0.018	
		Coefficient	t-Stat	P-value
Constant		-0.574	-4.493	0.000
Profit ratio		5.508	2.446	0.018

Regression outputs for the population data finding before and after the introduction of price regulation and bulk procurement system are presented in (Table10). From ANOVA statistics, which are the population parameters with the significant level of 1.8%. The standard error which measures the standard deviation of

company performance around its fitted value is 0.354. The R-square (R^2) which measure the percentage of the variance in the dependent variable by the independent variable is 12%.This implies that only 12% of dependent variable (output) was described by the changes in the independent variable (Profit margin).

5. Discussion of Findings

Results produced between 2011 and 2012 indicate a slight decline trend in the profit for company "B", company "C", and company "D". For company "A", there was a reduction in 2011 and 2012 and a slight increase in 2013. When holding all factors as constant at zero the regression analysis results measured by dependent variable was -0.03,-0.526,-0.006 and 0.055 for company "A", company "B", company "C", and company "D" respectively. In addition, findings give the unit increase in the independent variable for company "A", company "B", company "C", and company "D", which is equivalent to 1.105, 2.93, 0.90 and 2.00 of increase in output (dependent variable) respectively.

After the introduction of price regulation and bulk procurement system and when all factors are kept constant at zero company "B", is the most affected in its financial performance with the output -1.53, followed by company "D" with value -0.157 and company "A" of -.025. Despite the price regulation, company "C" out performed with the positive output of 0.034. In addition, when the independent variable increased by one unit lead to changes in the output of the dependent variable by 0.956, 10.06, 0.170 and 17.083 for company "A", company "B", company "C",, and company "D" respectively.

The analysis of the goodness of fit (R-square) after imposing the price regulation and bulk procurement system showed some improvements in company "A" and dropped for company "B", company "C" as well as, company "D". The percentage of the variances in the dependent variable are described by the set of the independent variable.

6. Conclusion and Recommendation

The study concluded that introduction of price control and BPS slightly reduced the profit of OMCs. However, it stabilize the price and ensure sustainable profit to OMCs at the sometimes protect customer and create an equal playfield for all OMCs. The study recommends that EWURA as a regulator should investigate further to improve suitability and applicability of price cap formula. The investigation should focus on protecting the profitability of wholesalers and retailers without jeopardize the welfare of the customer and the economy at large. On the other hand, the study recommends that OMCs should strive to reduce operational costs so as to increase their operating profits. The OMCs should make sure that they work efficiently by minimizing their operating expenditures so as to increase their profitability. The importing company should use money market to hedge against the risk of rising international oil prices as this constitutes a significant proportion of their direct costs.

7. Suggestion for further research

This study covers only four OMCs, therefore further researches are recommended to include more OMCs and employ other methods of analysis such as DEA. It also suggested that a comparative study may also be carried out so as to establish how these system operates in other countries

Acknowledgement

References

Alex Gboyega et, all (2011) Political Economy of the Petroleum Sector in Nigeria; World Bank Policy Research Working Paper

AfricanGlobe (2011). Big oil Companies Existing oil Retail Business in Kenya

American Petroleum Institute (2013) Economic Impact of Oil and Natural Gas Industry on the Us Economy in 2011

Antonio C. David, Mohamed El Harrak, Marshall Mills, Lorraine Ocampos: (2011) "Oil Spill (over)s: Linkages in Petroleum Product Pricing Policies in West African Countries". IMF Working Paper

Ashley Brown; Analysis of the Energy and Water Utilities Regulatory Authority Act and the Surface and Marine Transport Regulatory Authority ACT

http://www.hks.harvard.edu/hepg/brown_papers/ABrown_TanzRegLaw_02.pdf

Baig, Taimur, Amine Mati, David Coady, and Joseph Ntamatungiro. 2007. "Domestic Petroleum Product Prices and Subsidies: Recent Developments and Reform Strategies." IMF Working Paper WP/07/71. Washington DC: International Monetary FundBibek Baral (2011), Effects of Gasoline Adulteration; Forum for Interdisciplinary Thoughts. Kathmandu University

Cooper D. R. and Schindler P. S. (2007) BUSINESS RESEARCH METHODS 9th Ed. McGraw Hill Companies. Inc

Danzon. M. P and Epstein J. A. (2008) Effect of regulation on drug launch and pricing in International Market: National Bureau of economic Research; Working Paper 14041

Deloitte(2012) Study of UK petroleum Retail Market

Energy Information and Administration Washington DC (1999) Price Change in Gasoline Market

Earle R. et al. (2007) On Price Caps under Uncertainty the Review of Economic Studies Vol 74 Issue 1 pp 93 - 111

Energy Regulation Board: (2012). Report on Status of the Petroleum Industry, Zambia

ESMAP (Energy Sector Management Assistance Programme): 2009. Petroleum Product Markets in Sub-Saharan Africa: Comparative Efficiency Analysis of 12 Countries

EWURA (2001) EWURA Act (2001), Cap 414, Tanzania

EWURA (2010) The Petroleum (Bulk Procurement) Rules, 2010, Dar-Es Salam Tanzani

EWURA: (2011) "Review of the Petroleum Products Pricing Formula." Discussion Paper

EY: (2013). Review of Petroleum Wholesalers & Retailers Margins-Sanitised Draft Report

Golec H. J and Vernon A. J (2006) European Pharmacetical Price Regulation, Firm Profitability, and R&D Spending. National Bureau of Economic Research. Working paper 12676

Hans. H. H and Turley E. J. (1975) Oil price Controls: A Counter Productie Effort

Hans B. C et al. (2013). The effect of Price Transparency Regulation on Prices in Healthcare Industry

IEA (International Energy Agency), 2000. Energy Prices and Taxes. Paris.

Jerry Tylor and Peter Van Doren (2005) Economic Amnesia: The case against oil price control and Wind Profit Taxes

Knittel. R. C and Stango V. (2003) Price Ceiling as Focal Points for Tacit Collusion: Evidence from Credit Cards: The American Economic Review; Vo; 93 No 5 PP 1703 - 1729

Kojima M, Matthews W and Sexsmith F (2010), Extractive Industries For Development Series, Petroleum Market In Sub-Saharan Africa, ESMAP, World BanK

Kojima, Masami (2009) "*Petroleum product pricing and complementary policies: Experience of 65 developing countries since 2009*": Policy Research Working Paper 6396

Kojima, Masami, William Matthews, and Fred Sexsmith: 2010. "Petroleum Product Markets in Sub-Saharan Africa: Analysis and Assessment of 12 Countries." http://siteresources.worldbank.org/

Kothari,C.R.,(2007) Research Methodology,- Methods and techniques, New age international, Revised Second Edition, A division of New Age International(p) Limited, Inda., New Delhi: New Age International Ltd

Kpodar, Kangni, (2006), Distributional Effects of Oil Price Change on Household Expenditure: Evidence From Mali, IMF Working Paper, Wp/06/91, Washington Dc, International Monetary Fund, www.imf.org/external/pubs/ft/wp/2006/wp0691.pdf

Masebu H and Borgström R. E (2006), The Role of the Independent Regulator in Tanzania's Natural Gas and Petroleum Sectors, Institute For Public –Private Partnership , Inc, 1611 North Kent Street, UK

Max well J. A (1996) Qualitative Research Design : An Interactive Approach: Thousand Oaks Sage

MBENDI: (2013) "Petroleum and Petroleum Products Wholesalers in Rwanda – Downstream

Ministry of Energy and Minerals, Draft Natural Gas Policy 2012

Ministry of Energy and Minerals; Opening Remarks by the Director General of EWURA, at the Stakeholders Meeting to Discuss Draft Final Report of the Bulk Procurement System in the Downstream petroleum sub-sector *Courtyard Hotel, Dar es Salaam, 4th August 2009*

Mohamed M.F (2008), Procurement Strategy for the Oil and Gas Industry: To capture Changing Value and Dealing with Multi Culture Complexity, *International Conference On Construction And Building Technology,2008-B-(03)- pp29-38*, University Teknologi MARA (UiTM), 40450, Shah Alam, Malaysia

National Procurement Service; Best Practice Guide Framework Agreement for Bulk Liquid Fuels 2009

Nigeria National Petroleum Corporation (2008), Warri Refining and Petrochemical CO. LTD. Technical Report 4: 74-76.

Patrick Bajari: (2009) "*Procurement Contracting with Time Incentives: Theory and Evidence*". University of Minnesota and NBER Gregory Lewis Harvard University

Petroleum (Bulk Procurement) Regulation 2011

Petroleum (Bulk Procurement) Regulation 20113

Petroleum Act 2008

Saunders M, Lewis P, Thornhill, A (2010) RESEARCH METHODS FOR BUSINESS STUDENTS. 5th Ed, Dongbei University of Finance ana Economics Press, China

Scott Goldsmith (2009) Petroleum and future of the Alaska Economy: institute of Social and economic Research

Seo. D & Shin J (2010) The Impact of Incentive Regulation on Productivity in the US Telecomunications Industry: A Stochastic Frontier Approach

SGS (2013), Marker Program; 2013 SGS Printing Inc., Switzerland

TBS Discussion (25th 2013), Dar es Salaam; Tanzania

The National Energy Policy (2003)

UNDP/World Bank Energy Sector Management Assistance Programme: (2002). Urban Air Pollution South Asia Urban Air Quality Management Briefing Note No. 7

United Nations (2011), The Petroleum Industry in Zambia: A study on market structure and competition

URT: (2003). The National Energy Policy. Ministry of Energy and Minerals

URT: (2010). Petroleum Act (Cap 392), the Petroleum (Bulk Procurement) Rules

World Bank, Tanzania economic updates: Opening the Gates; how the port of Dar es Salaam can Transform Tanzania 2013

Yadar, S. R. (2005). Estimation of Petrol and Diesel Adulteration with Kerosene and Assessment of Usefulness of Selected Automobile Fuel Quality Test Parameters. International Journal of Environmental Science and Technology, Vol. 1, No. 4, 253-255

Yin, R. K. (1994) Case Study Research: Design and Methods. 2nd ed. Thousand Oaks': California. Sage Publications Inc.

Yin, R. K. (2003) Case Study Research: Design and Methods. 3rd ed. Thousand Oaks':

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