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FUEL PRICE ADJUSTMENTS AND GROWTH OF SMES IN THE NEW JUABEN MUNICIPALITY, GHANA.

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ABSTRACT: *Fuel as a major energy consumed has its price been unpredictable. Due to this unpredictability, policy makers always try to adjust its price to meet the prevailing world market prices. This study sought to evaluate fuel price adjustments and growth of SMEs in the New Juaben Municipality of Ghana. The specific objectives were to: find out whether fuel price adjustment affects SMEs negatively or positively, and explain the effect of fuel price adjustment on employment, turnover and output of SMEs in the New Juaben Municipality. This study was a social survey with a sample size of 204 and a purposive sampling was used to illicit information from respondents in which quantitative and qualitative analysis were undertaken. The results of the study showed that, increases in fuel price due fuel price adjustment result in increases in transportation costs, raw material costs, capital costs and other costs but have a negative relationship with consumer real income. In addition, increases in fuel price constrained the growth of SMEs. The study recommended that, government should take steps to subsidize the fuel costs of SMEs to enhance their growth which could lead to increase in employment. SMEs should be provided with managerial training to enhance their understanding of their activities.*

KEYWORDS: Fuel Price Adjustments, Growth, SMEs, New Juaben Municipality, Ghana

INTRODUCTION

Fuel as a commercial commodity affects both the micro and macro economy of every nation and Ghana is of no exception. Fuel price adjustment simply refers to the consistently changes in the prices of fuel products either increase or decrease which is attributable to fuel price fluctuations on the world market. Fuel price changes always affect prices of other commodities world over and many businesses as well in terms of productivity, turnover and profitability. The very businesses that suffer from this frequent fuel price changes are the Small and Medium Scale Enterprises (SMEs). This is partly due to the important role SMEs play as a safety net in poverty alleviation.

Widodo et al (2012) asserted that, when policy aims to stimulate efficiency in resource allocation, the consequences are always having unequal distributive effects. The bane of fuel adjustments was to pass on some of the costs to consumers and businesses are also affected as well. In the whole, many large businesses are able to weather the frequent adjustments in fuel prices but the small and medium enterprises are faced with daunting challenges.

Small and Medium Scale Enterprises (SMEs) in Ghana have struggled to survived within this precarious conditions. As supported by Kayanula and Quartey (2000), the SMEs existence and promotion in Ghana have not been so profound and that they were not much influence by policy in the 1960s.

SMEs are important in employment generation and creation. Approximate estimates showed that, 99 percent of many firms in developing countries show features of SMEs. However, the available literature is very blurred on the contribution of SMEs to economic growth (Fjose et al, 2010).Although some firms found market niches with good growth potential, many were not able to pass on fully the increased costs of raw materials and equipment to consumers in the form of higher fuel prices because of weak demand and an inflow of competing imports. Most firms experienced a financial cash trap, including those on sound financial footing.

The prices of fuel keeps on fluctuating (for the most parts, increasing) each and every month, year and since SMEs use fuel in their activities, the fluctuations normally affects their activities which hinders their growth in the New Juaben Municipality as well as Ghana. For many years of fuel price adjustments, the responses of Small and Medium Scale Enterprises (SMEs) on how it affects their employment, turnover and output is not known in the new Juaben Municipality and this problem has created the opportunity for this study.

The main objective of the study was to evaluate Fuel Price Adjustments and Growth of SMEs in the New Juaben Municipality, Ghana.
The specific objectives of the study were delineated as follows:

i. To find out whether fuel price adjustments affect SMEs negatively or positively.
ii. To explain the effect of fuel price adjustments on employment, turnover and output of Small and Medium Scale Enterprises in the New Juaben Municipality.
iii. To provide recommendations to influence policy as how to salvage the situation they in.

The study therefore sought to answer the following questions:

i. How do fuel price adjustments affect employment, turnover and output of Small and Medium Scale Enterprises in the New Juaben Municipality?
ii. Do fuel price adjustments affect SMEs in the New Juaben Municipality negatively or positively?

The hypotheses for this particular study are that:

Ho: fuel price adjustment does not affect SMES growth.
Ho: fuel price adjustments does not increase cost borrowing for SMES.

Nkonoki (2010) studied factors limiting the success and/ or growth of small businesses in Tanzania, an empirical study on small business growth. His study considered nine interviews which included six small business owners and three officials representing three organizations. The results identified a number of limiting factors to the growth of firms. Their results were categorized into internal factors and external factors. Where the internal factors were factors that was as a result of small business owners inability to understand the dynamics of business principles and the external factors were policy driven. The author concluded that these major factors were what stopped SMEs growth and constraints. The research therefore, recommends good policy from government and business education for business owners. This study had a similarity with this current study as it sought to outline the challenges to growth of SMEs but the differences are felt as the current study attempts to provide external shocks to the growth of SMEs.

Another study by Oluseye (2013) on the growth effects of SMEs financing in Nigeria between 1990 and 2010 on growth has been highlighted. Their study adopted the Ordinary Least Square

(OLS) method to estimate a multiple regression model. The result of the model was that, SMEs output the independent variables had negative effects on economic growth. However, some of the variables like commercial bank`s credit and SMEs output had significant relationship. The study therefore, recommended that, the central authority in Nigeria should create an enabling environment for SMEs development.

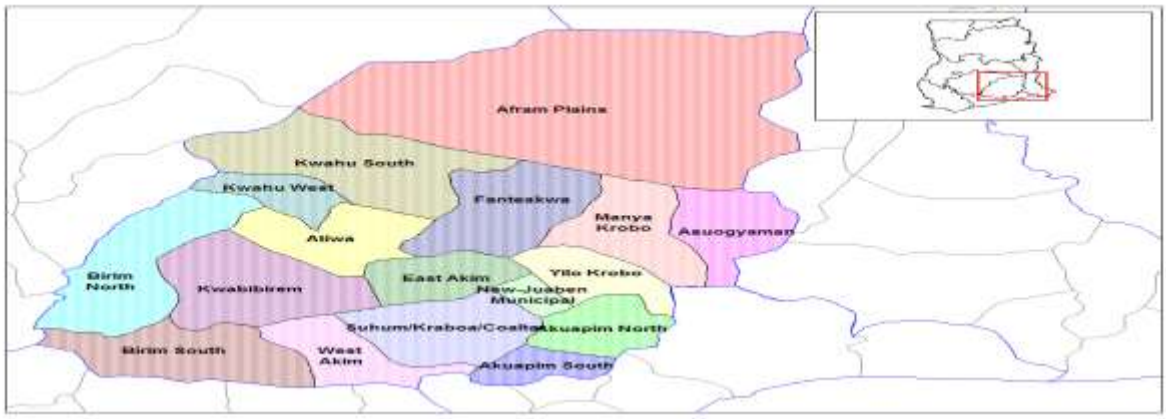
Abor and Quartey (2010) studied the contributions of SMEs to economic development and the constraints of SME development, particularly Ghana and South Africa. Their study showed that, though the SMEs sector have generated tremendous employment, the development of the sector have bedeviled with weak institutional capacities, lack of management skills and training and formula. They recommended that, SMEs managers could appropriate strategies to improve their existence and growth.

The study was set to highlight the effects of fuel price adjustments on growth, particularly expanding employment, turnover and output of Small and Medium Scale Enterprises in the New Juaben Municipality through the assessment of Small and Medium Scale Enterprises responses on fuel price adjustment in the new Juaben municipality. The researchers cited many researches related to SMEs, however, these researches viewed the problem from the perspective of growth, development and financial support and one that attempted to look at subsidies (Hartsenko and Sauga, 2013; Ahiawodzi and Adade, 2012, and Widodo et al, 2012). This particular research has been unique and creative as it is the first to attempt to quantify policy decisions particularly fuel price adjustments whose knowledge is blur in the New Juaben Municipality and Ghana at large.

METHODOLOGY

This particular study is a cross sectional survey aimed at finding the micro impacts of fuel price adjustments on the growth of SMEs in the New Juaben Municipality (NJM). The New Juaben Municipality (NJM) is the study area. The NJM is located in the Eastern Region and capital town is Koforidua. As it was not possible to deal with all small and medium scale enterprises within the New Juaben Municipality, the study was done with a sample of some selected SMEs within the NJM. The New Juaben Municipality (NJM) is depicted in the map below showing districts in the Eastern Region.

Map of Eastern Region



Source:http://en.wikipedia.org/wiki/NewJuaben_Municipal_District#mediaviewer/File:Eastern_Ghana_districts.png

The study sought to find out the effects of the problem identified on variables like raw materials, capital costs, transportation cost, consumers' real income and other costs. The target population for the study consisted respondents from metal works, textiles, woodworks and milling. Statistics about the informal is often difficult to in Ghana, since majority of them often escapes official statistics (Mohammed, 2013). The researchers targeted all visible SMEs in the New Juaben Municipality without regard to those who registered with National Board for Small Scale Industries (NBSSI) in the new Juaben Municipality. This was because, many of these Small and Medium Scale Enterprises are not registered.

The sample size for the study was two hundred and four (204) and the sampling technique was purposive sampling to illicit information from the respondents. The researchers used purposive sampling because the target respondents were all those who were operating SMEs. About two hundred and ten (210) questionnaires were printed and distributed and two hundred and four (204) questionnaires were returned indicating about ninety seven (97) percent response rate.
The primary data obtained was fed into Statistical Package for Social Sciences (SPSS) version 17 for analysis. Quantitative analysis was undertaken through descriptive statistics by using tables and chats and multiple regression analysis was also performed.

MODEL SPECIFICATION

Theoretical Model

Economic modeling approaches have been the bane of studying the impact of regulatory policy, particularly fuel price adjustments on SMEs. Basically two major approaches have been identified. These are the general equilibrium and partial equilibrium approaches. The General equilibrium modeling considers movements in factor market for inputs and goods across sectors, for instance, modeling from the context of social Accounting Matrix (Widodo et al 2012).

The Partial equilibrium model which is partially favoured in this current study is also supported by Von Moltke et al (2004).This is because this model considers changes in the energy markets, thus changes in price, demand and production.

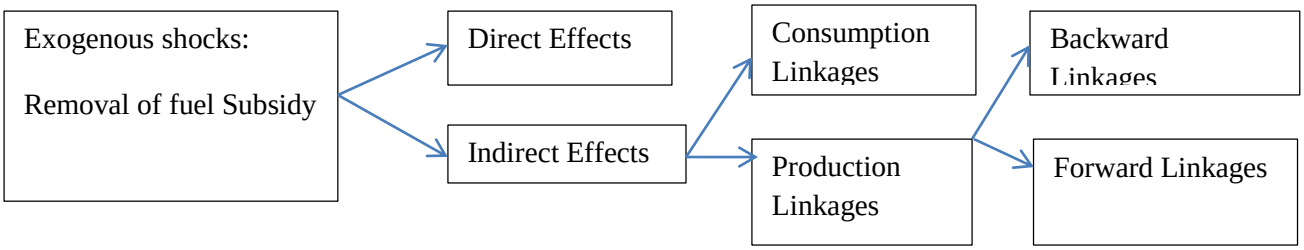


Figure 1: Direct and Indirect Effects of an exogenous shock.
Source: Modification from Breisinger et al (2010) and constructed by Widodo et al (2012)

Empirical Model

The research is the first of its kind to attempt to quantify the effects of fuel price adjustments on the growth of SMEs in Ghana, and therefore the authors relied on empirical economic modeling with prior expectations to construct a multiple regression aimed at undertaken analysis by the use of Ordinary Least Square Procedure. The aim of this economic modeling is to offer quantitative measurements of the impacts of fuel price adjustments on the growth of SMEs in the New Juaben Municipality.

The Empirical Model takes the form:
Fuel Prices(**Y**) = f (Transportation Costs(**T**) + Raw Material Costs(**R**) + Capital Costs(**C**) + Consumers real Income(**CR**) + Other Costs (**OC**)+ Error).

Therefore, $\mathbf{Y} = \beta_0 + \beta_1\mathbf{T} + \beta_2\mathbf{R} + \beta_3\mathbf{C} + \beta_4\mathbf{CR} + \beta_4\mathbf{OC} + \varepsilon$ ..... (1)

Fuel price adjustments result in adjustments in the following: adjustments in transport cost, raw materials, capital costs, consumers' real income and other costs which are indirect but fuel price directly affects SME growth through the above linkages.
Therefore, two equations are necessary but the direct equation which we are seeking is:
SMEs Growth (**GN**) = f (fuel Price Adjustment(**Y**)) and the Indirect equation is the one above.

Therefore, $\mathbf{GN} = \beta_0 + \beta_s\mathbf{Y} + \varepsilon$ ..... (2)

From the first model (1), we expect the independent variables to have a positive relationship with fuel price adjustments with the exception of consumer`s real income which has a negative relationship with fuel price. The second model (2) has the expectation that, Fuel price adjustments has a negative impact on the SMEs growth.

RESULTS AND DISCUSSIONS

Respondents Demographic Characteristics

The respondents were basically involved in metal work, textiles, woodwork and milling. Out of a total of 204 respondents 32(15.7%) were involved in metal works, 62(30.3%) were involved textile, 90(44.1%) were in wood works and 20(9.9%). The respondents between 18 – 25years for the entire work category was 71(34.8%), for 36 – 45years was 77(37.7%) and for above 56years

56(27.5%). The all work category referred to respondents for metal work between 18 – 25years, textiles between 18 – 25years, woodwork between 18 – 25years and milling between 18 – 25years and so on. In all, 71 (34.8%) in all the entire work categories were females of which the dominant involvement was textile for females whiles 133 (65.2%) was also for respondents who were males of which the dominant was wood work.

It was realized that, majority of the respondents were basically school leavers which forms 36% of the target population. Out of these, 12% are from metal work sector, 8% from textiles sector, 4% from wood work sector, and 12% from milling sector, Followed by secondary/technical/vocation school leavers forming 32% of the total respondents. Out of these, 4% are from metal work sector, 4% from textiles sector, 8% from wood work sector, and 16% from the milling sector. Then those with university/polytechnic graduates forming 12% of total respondents of which 3% are from metal work sector, 5% from textiles sector, 2% from wood work sector, and 2% from milling sector. Then lastly are those without any form of education forming 20% of total respondents of which 4% are from metal work sector, 2% from textiles sector, 10% from wood work sector, and 4% from milling sector.

Respondents Fuel Usage

Fig 1: *The number of respondents who use and do not use fuel*
Source: *Field data, 2014*

From the figure 1 above, it has shown that out of the total number of respondents in all the cases as to the usage of fuel, there was indication that, milling constituted the highest with fuel usage, followed by wood work, textile and metal work. Fuel usage in milling constituted more than 50% which indicated that, they had to supplement fuel in the absence of electricity to boost production. This followed the same pattern as indicated in Widodo et al, 2012. The difference however is that, Widodo et al, 2012 looked at price adjustments in the case of subsidies, whilst this current study considered fuel price adjustments in the case of price hikes.

Table 1: Percentage of Total Expenditure that Goes into Fuel

	Percent (%)	Frequency
Metal Work	4	8
Textile	9	19
Wood work	17	35
Milling	35	72

Source: *Field data, 2014*

From table 1, respondents were asked to supply information regarding the expenditure of their businesses that goes into fuel purchases without regard to other expenditures. It revealed that, those SMEs in milling committed approximately 35% of their revenue on fuel, whiles; wood work is 17%, textiles 9% and metal work 4%. In sum, SMEs in the milling sector spend heavily in expenditure as far as fuel purchase is concern and accounted for 35% in the New Juaben Municipality. However, approximately 70 responses did not spend on fuel which when added to the overall questionnaire retrieved gave 204.

Effects of Fuel Price Adjustment on SMEs

Key informant interviews were conducted to ascertain the veracity of fuel price adjustments on output, employment and general business of SMEs in the New Juaben Municipality. The result of the interview showed that, approximately 75% of businesses complain when price of fuel is adjusted upwards and such has brought about decline in output and subsequent slow in business and productivity. Due to these upward fuel price adjustments, many businesses lay off workers and those which cannot cope with these conditions fold up. This particularly findings from the research is further supported by Oluseye (2013) when he opined that, this particular constraint to limit the growth of SMEs. Therefore, fuel price adjustments, especially upward adjustment is multifaceted and has many implications on output, employment, turnover and growth. Due to high cost of operations to the SMEs, their operations become volatile and as such leads to tax evasion in the economy. Again based on their agile nature, lack of preparedness on their part to absorb intermittent fuel price adjustments could easily lead to business insolvency. In addition, these responses demonstrated that, fuel price adjustments affect their operations negatively, when the adjustment is down upward.

Reason for adjustments of fuel price

The National Petroleum Authority (NPA) revealed that, fuel prices are not adjusted for adjustment sake but it is world commodity whose prices are determined by market forces. The prices of fuel are always determined by the world market crude oil prices level. This simply means that fuel prices are adjusted in accordance to changes in the world market crude oil prices by the National Petroleum Authority (NPA) approved by government of Ghana. The national petroleum authority has indicated that, fuel price adjustment does not have fixed number of times within a year but it rather depends on the prices of crude oil in the international market based on demand and supply. However, political forces always come into play as governments in Ghana over the years have intervened to stop automatic adjustments of the fuel prices.

This however, has increase governments debts couple with non-payments and collapse of the demand and supply pattern.

IMPLICATIONS OF FUEL PRICES ADJUSTMENTS ON THE ECONOMY

Fuel price adjustment which is upward has many ramifications on the micro and macro economy of Ghana. These implications are as follows:

- Increases in fuel prices leads to increases cost of production
- Affects the transport sector as prices will go up and also pushes production costs
- Increase in general cost of living as unemployment will go up.

However, the reverse is the case.

Econometric Results

Table 2: Model I: Indirect Impacts

Variables	Coefficient	Standard Error	t - Value
Constant	62.4814	72.640	4.604
Transportation Costs	14.096	26.392	3.043
Raw Material Costs	27.534	27.928	4.006
Capital Costs	31.041	26.994	21.026
Consumer Real Income	-19.112	12.009	-16.421
Other Costs	9.413	10.402	5.004
$\mathbf{R^2}$ = 94%			
Adjusted $\mathbf{R^2}$ = 93%			
DW = 1.843			

Dependent Variable: Fuel Price Adjustments
Source: Field work, 2014

Table 2 above represented variables that have indirect impact on SMEs growth but have direct impact on fuel price adjustments. However, fuel price adjustments have direct impact on the growth of SMEs. The expectation is that transportation costs, raw material costs, capital costs, consumer real income and other costs incurred by the SMEs have a positive relationship with fuel adjustments. That is, if there is a fuel adjustment of price increase, we expect the aforementioned variables to also increase positively with the exception of consumer real income which should have a negative relation with fuel price adjustments as a prior expectations, the reverse is the case. From the analysis, it was realized that, all the independent variables complied with economic expectations. The fitness of the model was seen to be good as $\mathbf{R^2}$ = 94% and **Adjusted** $\mathbf{R^2}$ = 93% with DW= 1.843. This demonstrated that, the results of the study have provided a good ground to reject the null hypothesis that, **Ho**: fuel price adjustments does not increase cost borrowing for SMES. Therefore, we conclude by accepting the alternative ($\mathbf{H_A}$) that, fuel price adjustments affect cost of borrowing and all other independent variables. This result is supported by the work of Widodo et al (2012) when they asserted that, the about results are very important determinants in the SMEs sector.

Econometric Results

Table 3: Model II: Direct Impacts

Variables	Coefficient	Standard Error	t - Value
Constant	7.481	0.641	51.032
Fuel Price Adjustments	-48.921	2.126	-21.401

R^2 = 96%. **Adjusted R^2** = 95% **DW** = 1.852

Dependent Variable: SMEs Growth.
Source: Field work, 2014

Table 3 provided room for a direct impact measurement in which the impact of fuel price adjustment is shown to have a direct relationship with SMEs growth. The fuel price adjustment value reflected the model I indirect variables and also as a proxy for them to quantify this relationship. The expectation was that, an increase for instance fuel price will reduce SMEs growth and vice versa as a prior expectation and economic theory. The result of the model showed that, as fuel price is adjusted upwards, it constrained the growth of SMEs. If **t** – statistic is bigger than 1.96 (in absolute terms) then the corresponding coefficients have a 95% chance of being different from zero. The result of this model therefore rejects the null hypothesis that '**Ho**: fuel price adjustment does not affect SMES growth' and accepted the alternative hypothesis (**$H_{A)}$** that fuel price adjustments affects SMEs growth. The fitness of the model was seen to be good as **R^2** = 96% and **Adjusted R^2** = 95% with DW= 1.852. At the same time, the result is supported by the work of Widodo et al (2012) when they opined that, fuel subsidy influence SMEs growth positively and removal of subsidy affects SMEs growth due to fuel price adjustments.

CONCLUSIONS AND RECOMMENDATIONS

The study has revealed some important critical issues for achieving the ultimate objective of the study. The main objective of the study was to evaluate Fuel Price Adjustments and Growth of SMEs in the New Juaben Municipality, Ghana.
The specific objectives of the study were delineated as follows:

i. To find out whether fuel price adjustments affect SMEs negatively or positively.
ii. To explain the effect of fuel price adjustments on employment, turnover and output of small and Medium Scale Enterprises in the New Juaben Municipality.
iii. To provide recommendations to influence policy as how to salvage the situation they in.

The major findings encompass the specific issues of the study. Talking about fuel price adjustments, the study revealed that most of the SMEs understood fuel price adjustments and the need for it and the fact that, fuel price adjustments affect their activities negatively. Even looking at the trend of fuel price adjustments for the past ten years based on the responses of the SSEs, almost 72% of the respondents indicated that fuel price adjustments has affected their activities negatively.

The study also revealed that, fuel price adjustments affects turnover, output and employment levels of the SMEs. This showed that, turnover of SMEs does fall whenever there is fuel price adjustment. This fall occur due to increases in transportation cost and production cost incurred by SMEs. The

study also indicated that, SMEs output also declines whenever fuel price are adjusted. This fall arise due to increase in the cost of raw materials leading to increase in the cost of production.

The study recommended that, National Board for Small Scale industries (NBSSI) should take active steps to register all SMEs in Ghana. This could offer government about the size of SMEs and ultimately the information could help to provide fuel subsidy for the SMEs to help them generate more output and employment to salvage the economy.

It was also recommended that, SMEs should be able to anticipate the impact of this fuel price adjustment and therefore set some funds aside to mitigate this external force on them, since fuel prices are external in nature.

The Ghana National Petroleum Authority (GNPA) could provide a time table or information about trends in fuel price fluctuation as a guide for SMEs, so that any future adjustments would not come as a shock to throw their businesses out of manageable proportion. Lastly, Non-Governmental Organization and other policymakers s\could provide basic trainings for SMEs in terms of management and risk to avoid any problems to their business due to lack of knowledge.

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