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The General Economic Impact of Price Ceilings; Violating the Law of Supply and Demand, A Tanzanian Experience

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Abstract: ***This study examines the impact of community economic price ceilings in Tanzania was carried out in Dar es Salaam Region from February to June, 2013. The study covered around three administrative districts namely Kinondoni, Temeke and Ilala by observing different petrol stations. The main tool of data collection was observation method. Findings from this study have indicated that the general impact of economic price ceiling distorted equilibrium price, increased black market, and low quality of goods. The study also indicated that the impact of economic price ceiling through the government setting price above market price that reduced the quantity of goods also consumers evaded price ceilings by suggesting the price they want to buy as sellers hoarded goods. The study recommends that there is a need for the authority to use PCs as the temporal measure as there is tendency for the distorted equilibrium to equilibrate to the normal equilibrium(pe) at the point where demand (DD) and Supply (SS) are equal (Qd=Qs) where people are willing to buy or sell the goods.***

Keywords: Price Ceilings, National Price Control, Equilibrium Price, Demand and Supply

1. Introduction

The whole concept of Price Ceilings (PCs) rests on the microeconomic theory that gives explanation on how the actions of all customers and suppliers agree on prices and how prices manipulate the decisions and actions of individual consumers and producers. The microeconomic analysis asserts that the buyers and sellers interactions are linked by prices at fair environment advocated by invisible hand the age long economic philosophy promulgated by great economist of his time Adam Smith (1776). The micro economists believe on market forces as a rule of game and not market intervention through rules and regulation. It is well known that, the market intervention emanates from the planned economy as compared to free economy advocated by free market Demand (DD) equals to Supply (SS) as no economics without demand (DD) and supply (SS) and the reverse is true.

1.1. Background

The price ceiling or control it is not new phenomenon, it has been there since time in memorial. In recent months oil prices have showed exceptional instability. Prices increased from 2004 to extraordinary sky rocketing in mid-2008, solitary dropped sharply in the most recent four months of 2008 and lose all the attainment of the preceding four and a half years, Kojima, M (2009:9).

Rockoff Hugh [Hugh Rockoff is a professor of economics at Rutgers University in New Brunswick, New Jersey, and a research associate of the National Bureau of Economic Research.
http://www.econlib.org/library/Enc/PriceControls.html
retrieved on 07/11/2011] argued that, Governments have been demanding to set utmost or lowest prices since ancient times. The Old Testament forbidden interest on loans to colleague Israelites; medieval governments set the maximum price of bread; and in recent years, governments in the United States have set the price of fuel, the rental fee on

apartments in New York City, and the wage of unskilled labor, to name a few. At period, governments go afar setting precise prices and attempt to manage the general level of prices, as was done in the United States during both global wars and the Korean War and by the Nixon administration from 1971 to 1972 (Perloff,2004 :36). There has been an episodic debate on price control starting 1992 in Congress as whether to impose beyond oil to medical services, however came true to Obama administration in 2011 where the Congress passed the healthy policy unanimously. One might argue that economic theory regarding price control is as old as the birth of the universe; however, it differed in model of application depending on time and environment.

In Tanzania, in the 1970s it experienced the severe drought and oil crisis in a country, the price control was applied in the expectation that they might protect the consumer consequently it created more shortage of goods country wide. By then Tanzanian economy was a planned one where the National Price Control (NPC) was put in place for that purpose. Essentially the Governments apply the Price Ceilings when there is a market failure and it is highly recommended that the market interference should not persist for so long but rather in the short run. The Great Economist and Nobel Prize Winner in economics in 1976 Friedman Milton [http://www.econlib.org/library/Enc/PriceControls.html retrieved on 07/11/2011] argued on the same line that... *Economists may not know much, but they do know how to produce a shortage or surplus. Price ceilings, which prevent prices from exceeding a certain maximum, causes shortages. Price floors, which prohibit prices below a certain minimum, cause surpluses, at least for a time.* PCs are prevalent even in Europe the country such as Greece was faced the problem of high cost of living, consumers demonstrated against this, the Government rush to intervene the price unfortunately the set price is above the market price that caused a chaotic situation.

1.2. Paper Objective and Coverage

The paper objective is to assess the economic impact of price ceilings; violating the law of supply and demand

1.3. Research Approach and Methods

The specific steps, methods and approaches in this study included organization; planning, design, field survey and observation. The study was conducted from February to June, 2013 in Tanzania-Dar es Salaam City.

1.4. Study Limitations

The study dwelled much in Dar es Salaam region to represent the whole country because of financial constraints which might have covered the whole country. Dar es Salaam Region is one of the thirty administrative regions of Tanzania.

2. The Main Report

The economic impact of price ceilings; violating the law of supply and demand

The PCs are of two folds, private sector maintain the PCs and the public sector contain the PCs too. The manufacturer would fix a price for its products which were above the equilibrium price (Pe). The manufacturer directs the retail businessmen through posters or stickers that the price should not be lowered or raised when selling the products. Buying the 'fair trade' practiced by the Coca Cola Company in Tanzania and probably all over the world as a multinational Corporations (MNCs) that, the retail price of Coke item is TZs 600 equal to (US$ .34) [US$1,765 rate dated on 08/11/2011] per bottle. This principle applies to the Pepsi Cola Company and other related companies practice the same. Whereas, the Government also intervene the market process on the specific goods sold to the public by fixing the indicative price below the Pe.

The Government PCs intervention was on the move in Tanzania, through Energy, Water Utilities Regulatory Authorities (EWURA) directing the suppliers that the price should not exceed TZs 2,043 (US$ 1.2) per litre of petrol. Kojima, M (2009 p34) asserts that, in Tanzania, the Energy and Water Utilities Regulatory Authority (EWURA) held a meeting in September 2008 with fuel marketers, at which the participants agreed that retail fuel prices needed to come down. The fuel marketers were given until October 29 to adjust their prices. When prices did not come down to the extent that EWURA had hoped for, the director stated that the agency might have to start setting actual prices rather than just price ceilings. In Government intervention to the process normally lead to a shortage of goods or services, because the consumers of goods have high purchasing power resulted from the distorted price, thus **DD** exceeds **SS** as one of the commandments of economic laws. EWURA staff Mr Titus Kaguo on the The National Newspaper titled Daily.

News on the cover page appealed for public on shortage of fuel to be calm, saying that the country had enough fuel. According to Shiundu, A (2011) , Energy Regulatory Committee (ERC) announced new fuel prices with the price of super petrol going up by Ksh 3.63 equivalent to 0.039 US$ (1US$=Ksh 92.450 dated 17/11/2011) per litre, diesel by Ksh 3.36 (US$ 0.036) and kerosene by Ksh 4.92(US$ 0.053). The price of fuel keeps on rising. The same is true to EWURA failed to contain price mainly because of external shocks caused by World Oil Markets coupled with exchange rate eroding the TZs.

2.1 Analysis of economic impact of price ceilings; violating the law of supply and demand

In order for PCs to be effective, it must be set beneath the accepted market stability. When PCs is fixed, a deficiency occurs. For the price that the ceiling is set at, there is more demand (DD) than there is at the equilibrium price. There is also less supply (SS) than there is at the Pe price, consequently there is more Qd than Qs. Inadequacy take place since at the price ceiling Qs, the Marginal Benefits (MB) exceeds the Marginal Cost (MC). This inadequacy is equal to the Dead Weight Loss (DWL). If PCs is set, then there must be a way to allocate who gets the low supply of the product. Of course, since there is a lawful boundary on the price, the price can't simply be lifted, Taylor, B (2006). The Table 1 below shows the price fluctuation caused by price ceiling and accentuated by unstable Tanzanian shilling against the dollar rate used in purchasing petrol in the world market. The market price before imposing ceiling was TZs 2,090 (1.2US$) as shown below, after imposing legal limit of price it decreased to TZs 2,004 (1.1US$). The suppliers of petrol went into conflict with Government that call for a joint meeting between the two, Government and suppliers, they revisited its calculation and raised the price to TZs 2,063 (1.2 US$) following this meeting the Government tasked itself to revisit the calculation on the same regularly at least in two weeks time. In Tanzania the role of regulatory functions are invested in Energy, Water Utilities Regulatory Authorities (EWURA). Conversely, the consumers were very irked with this unstable EWURA decision pressurised by the suppliers, they claimed that the services offered by the suppliers are very poor as compared to the free market enterprise regulated by the natural forces, the law of Demand and Supply as is highly advocated by the great economist including the Friedman Milton the father of monetary economy. Equally so, the Great Economist of his time, Adam Smith (1776) in his Book titled the Wealth of the Nation, emphasized the role of natural forces coined by the invisible hand connoting the market forces.

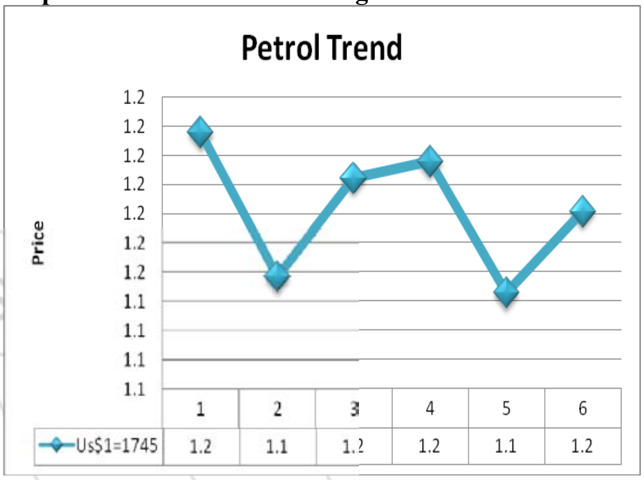
Table 1: Quoted Price of Petrol in different Period (June to November, 2011)

Unit Price	Qty (ltrs)	Amount (TZs)	US$ Rate	Amount (US$)
2,090	1	2,090	1,745	1.2
2,004	5	10,020	1,745	1.1
2,063	10	20,630	1,745	1.2
2,073	15	31,095	1,745	1.2
1,994	20	39,880	1,745	1.1
2,043	25	51,075	1,745	1.2

Source: *Own Compilation from different petrol Station in Tanzania.*

Table 1 shows that, the price before setting ceiling was at TZs 2,090 whereas after pricing fixing the price drop to TZs 2,004 in this period the seller rioted against the government leading to penalties and closure of their stations. The sellers that subjected to closure were BP and Engen Company where others were fined some money which seemed to be very low as they continued with a go slow movement. The EWURA revisits the formula at every two weeks; this caused the mushroom of oil speculators hoarding oil in the expectation of price rise in the coming new set price, consequently causing shortage of oil in a country. The trend price shows that it goes back to the original price before imposition of price as at present it stands at TZs 2,043. Kojima, M (2009. p[5]) added that PC prompts clients and fuel marketers alike to speculate when the next price increase or decrease might be and to adjust purchase patterns accordingly, creating fuel shortages, anticipation of a fuel price increase leads to panic buying and hoarding, while anticipation of a fuel price reduction leads to postponement of purchase not only by consumers but also by retailers which run down their stocks.

Graph 1: Effects of Price Ceilings



Source: *Own computation based US$ 1 equals to TZs 1,745 dated 07/11/2011.*

The graph above depict that the price is not stable despite the effort of the Government intervention through PCs. The economic principles tell us that despite the Government effort to intervene the market process, the price tend to equilibrate to its normal equilibrium price (Pe).

Looking carefully from the plotted graph above you learn that, when the **DD** and **SS** was not disturbed the price was at US$ 1.2 located at 1, after interference the price drop to 1.1 located at 2 that is below equilibrium price. Additionally, this kind of item is also regulated by exogenous factor such as oil production decrease or increase and local currency against US$. This was true to Tanzania and Western countries particularly US when the Organization of Petroleum Exporting Countries (OPEC) member nations limited the amount of crude oil they made available (Boone, and Kurtz, 2003 p.90), consequently, the price hiked above $35 per barrel that calls for PCs which eventually shifts the supply curve. When of these changes the price of fuels follow suit, as you can see at location 3 and 4 the price was 1.2 despite the Government interference to market forces.

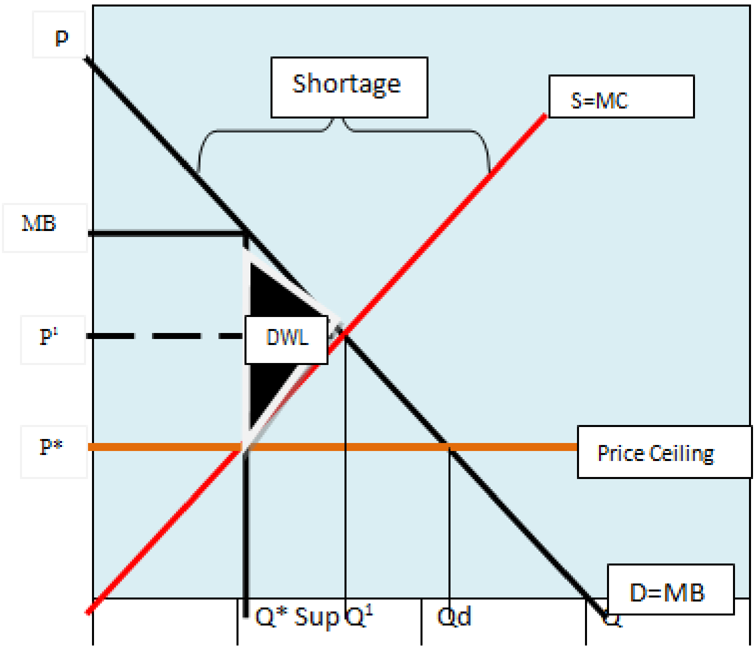


Figure 1: Price Ceiling

The graphical presentation illustrates a PCs. P* shows the official price the government has set, but MB explains the price at which the marginal buyer is ready to pay at Q*, which is the quantity that the supplier is ready to offer. Since MB > P* (MC), a DWL outcome. $P^1$and Q^1 show the Pe. At P* the Qd is greater than the Qs. This is what originates the deficiency of petrol. Regarding to the deficiency of fuels it automatically calls for terrible queues and rationing of the badly demanded goods. The queues sometimes can be tolerated but rationing is very daunting as you demand certain quantity stimulated by low price, you face huddles that the quantity for every one is pronounced at say ten litres [The rationing and long queues affected even the author of this paper it is a true living reality. He spent more two hours waiting of gasoline to surprise when demanded more than the set quantity he was denied] of petrol or other products only with all the cost of long queues you faced. In this regard, the picture below captured in Tanzanian people queuing for fuels in GAPCO petrol station. The immediate effects were the unofficial price mushrooming for those who won't torelate the long queues. The price for five litre of galon was sold around TZs 25,000.00 equivalent to US$ 14.33 the same recorded the highest price ever happen in Tanzania. This was a sign of black market occurrence emanated from the goods or services shortage, we will come back this black market.

2.1.1 Long Queues of Consumers

Perloff, (2004 p.37) added that regarding the queuing time, in cities such as Chicago, Hartford, New York, Portland, and Tucson, potential customers waited in line at the pumb for an hour or more as figure 3 shown below. The calculated cost to help the consumers might a reciprocate the time taken in a queuing process, and therefore PCs sounds good politically but economically is questionable, the seller shift their burden to the final consumers.

Figure 2: Long Queues caused by Price Ceiling
Source: *Mjengwa Blog 2011*

Reading from the picture above the consumers carries tins and gallons to avoid congestion of motor vehicles at the petrol station and also to minimize the available petrol in their motor vehicles left at homes. The second notion is that, some of them came to buy it for the market racketeering in their localities to others who had no knowledge where the petrol is available. Wanyonyi [http://allafrica.com/stories/ retrieved on 17/11/2011] (2011) added that queues at petrol stations in Kenya became unbearable, and the government has quietly allowed prices to rise again, having achieved little more than to encourage oil sector players to make hay while the sun shines, fuel prices in Nairobi are now among the highest in Africa and the developing world.

2.2 Theoretical Model on the PC Framework

The DD and SS are illustrated by graphs; graphs are like the harmer to the carpenters' work.

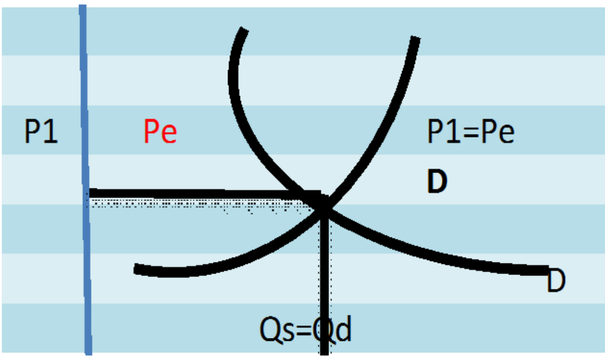


Figure 1: Demand and Supply Curve

The free market, Ceteris Paribus, requires that buyers are willing to buy when the price is at the equilibrium price (Pe) as shown in the figure 1 that, P1=Pe and quantity supplied (Qs) equals to quantity demanded (Qd) that is Qs=Qd. The violation of this law of DD and SS is like opening the Pandora's Box problems of which no one can solve it. This rule of DD states that buyer demand more of a good or service the lower the price, other things remain equal such as keeping constant tastes, the prices of other goods, and other factors that influence consumption.

3. Conclusion

This chapter expounds a conclusion constituting of the main findings and generic policy recommendations.

3.1. Major Findings

3.1.1. Impacts of Price Ceilings

A PCs fixed under the free market price has numerous consequences. Providers discover that they can't charge what they had been anticipated. Consequently, a number of sellers drop out of the marketplace. This decreases supply. Meanwhile, consumers find they can now buy the product for less, so Qd increases. This two actions cause Qd to exceed Qs, which cause a deficiency as enshrined in the principles of economics, unless portioning or other consumption controls are imposed as a temporal measure. It can also lead to various forms of non price competition so supply can meet demand. Generally, the effects are of twofold; negative and positive effects of price ceilings set out below;

3.1.2. Prevent suppliers from engaging in price gouging

PCs help prevent suppliers from engaging in price gouging, or charging outrageously high prices for limited goods or services simply because they are able to. PCs are also helpful for maintenance the cost of living affordable during periods of high inflation. Inflation illustrates the trend of prices for goods and services to steadily increase over time. During high inflationary periods, prices increase faster than earnings, which decrease the shillings/dollar purchasing power, making PCs necessary for consumers to sustain their standard of living.

3.1.3. Reduction in quality

Suppliers are disheartened from manufacturing more of an item when they can't lay down their own prices, therefore, supply of key resources will decrease, reducing accessibility to the market. To supply demand at the lawful price, the most apparent option is to lower costs. However, for the most part, to lower cost of production means lower quality. The item produced should posses the exchange value and use value, the former connotes price on the item while the latter utility derived by the consumer. When you reduce cost of item mean that the intrinsic value reduced. Say you reduce the price to the item of article of ostentation, like gold and silver the consumer will feel negatively on the quality of those item sold in the market. Conversely, the producers are attempted to reduce cost of production so as to match with the artificial price fixed by the Government. During 2nd World War, for example, food suppliers working under ceilings reduced portion size and used less expensive ingredients (e.g., more fat, flour, etc.).

3.1.4. Black markets

If somebody cannot attain needed supplies because PCs reduces the quantity through rationing, they may turn to the black market. Those who, by chance or good organization, obtain goods in short supply can profit by unlawfully selling at a higher price than the free market allows. The black market price is higher than the free market price because the quantity is less than in a free market deal, where more suppliers could meet up the expense of trading the manufactured goods. People are sometimes constrained to buy these at higher prices when a scarcity occurs and there is no alternative place to acquire these.
In Zimbabwe on October 2001, the government fixed price on various commodities including oil as a stepping stone to presidential campaign. They imposed PCs without looking at it with economic eye consequently the black or parallel market developed. In the other note, the goods sold in Zimbabwe were relatively cheap as compared to the neighbouring countries, also smuggling to other countries enlarged.

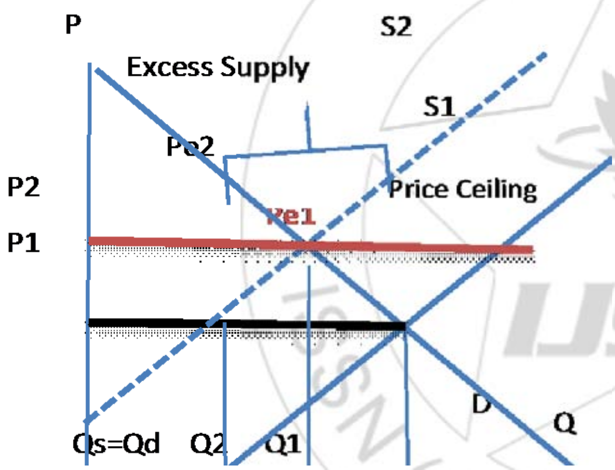
3.1.5. Consumers Evading PCs

Of no doubt the consumers might persuade the sellers that I am going to buy or pay more than the price fixed by the government without the knowledge of anyone about our deeds. Perloff, J.M (2004, p.37) asserts that, a consumer could go to a petrol station owner and say, "Let's not tell anyone, but I will pay you twice the price the government sets if you will sell me much gas as I want". What it is that despite of illegal persuasion from the customers against the gas stations to behave that way the so called shortage caused by excessive DD won't occur.

3.1.6. PCs Set above Market Price

The calculation of the artificially price to be set on the consumers have to be carefully sought economically. The Government being pressurised by the Consumers on DD side and SS side by the producers might set a price above the market price. The logic suggest that, the Government intervene process is too long as they start from the crude oil to the petrol stations, and therefore find themselves trapped into this horrible decision that frustrate the consumers contrary to their expectation. One might expect that when you PCs meant decrease of price of goods or services, now then when it doesn't fulfil this expectation then why PCs for. It is well known that, the Greece was faced economic down turn currently, where the consumers demonstrated on the failure of Government to contain live expenses in a country. In this regard they found themselves set prices of fuels above the market price which is contrary to the commandments of economics laws. Mindova [http://www.grreporter.info/en/price_ceiling_gasoline_higher_market_price/2411 retrieved on 08/11/2011], 2010 added that, the Greek government imposed a price ceiling for the gasoline as a temporary measure for the prevention of speculation on the fuel market. Graph 2 shows the price set above the equilibrium price, the horizontal line coloured red, unexpectedly it is economically harmful to the consumers of gasoline/petrol. Before imposing PCs the buyers were willing to buy at P_1=Q_1 at equilibrium price (Pe_1). After imposing PCs the buyers are forced to buy at P1=Qs=Qd as moved from Q_1 of the same price but small quantity. One could have expected that buyer will be able to buy goods at P_2=Q_2 at Pe_2 where there is an excess supply because PCs is set above market equilibrium which has a higher price compared to P_1. The consumers will resort into demonstration as result of economic crisis caused by government failure.

Graph 2: PCs Set above Market Price



Source: own construction

3.1.7. Social Unrest – Bread and Revolution

As it is said earlier that PCs is not a new phenomenon in the history of mankind. The PCs started in the 20th century well documented by the economist Henry Bourne (1793) on effects of PCs following the French Revolution. The consumers faced it hard to buy grain, the grain shortages were not of any agricultural problems, and the France was rich in agricultural products and capable of supply for its general public. The government caused the internal problems in terms of procurement and distribution that led to the struggle of accessing grain, the agents for city of Paris, the military and government had to struggle for the same. The struggle on grain resulted into local shortages and piloted to social unrest, as said earlier to countries like Italy and Greece.

The government of France decided to subsidize the price of flour, the same pressed bakers from neighbouring towns to go to Paris to buy flour, smuggling increased as was the case of Zimbabwe, and this too complicated the shortage problem in the city. In response to these protruding economic distress the government tried plan B as plan A failed by establishing price floor for grain in order to stimulate production to cover the gap present but the farmers didn't cooperate with the government passed regulations and further shortages increased as the urban riots persisted.

3.1.8. Distorting the Equilibrium Price

The equilibrium price occurs when Qs=Qd, it can maintain indefinitely given that no one impose pressure to alter the price. Perllof (2004, p30) added that shifts the DD curve or the SS curve. These curves shift if one of the variables we were holding constant changes. It is true that, when the government policies are imposed on goods and services among other things the equilibrium price will be shocked in the short run, but in a long run will stabilize to its normal equilibrium as postulated in the figure above.

3.2. Policy Recommendations on PCs

The PCs are not a panacea to the problem of price increase of goods because it is temporal measure to the time of economic crisis. When the setting is not careful sought the country will enter into the political crisis even the collapse of government as was the case to the Soviet union and currently political pressure to the Greece government experiencing the demonstration. The PCs normally creates the distorted prices, shortage of goods leading to the black market, low quality goods, consumer's evasion on prices set by the government through collusion with the sellers, encouraging business smuggling to the neighbouring countries as was the case in Zimbabwe.

More importantly, the PCs led to the discrimination of customers in the market environment where one might decide to sell goods to his friends, famous people and other buyers of the sort.

Additionally, the government should attack the problem at the right angle by issuing the strategic oil reserve into the market like the recent approach done by Tanzania Petroleum Development Corporations (**TPDC)** following the collusion done by the oil companies' refrained from selling oil at the price set by EWURA.

It is also important that, the government invest more the efforts going on of exploration of oil refinery in the respective country. At policy level to prohibit the coordinated effort done by cartels to increase prices arbitrarily which it affect the consumers by applying the microeconomic models in forecasting the same. Applying all these narrated economic theory the government won't face the political as well as economic pressure from the consumers, and the government will be honoured too.

It is thought that, it should be applied in the short term borrowing the knowledge of welfare economics which allow government intervention in regulating the economy when it is not moving while thinking the long term measure against the problem at hand.

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