COST REFLECTIVE PRICE REGULATION OF PETROLEUM: THE CASE FOR ZAMBIA

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ABSTRACT

This Paper focuses on the models of price regulation of Petroleum by the Zambian regulator, the Energy Regulation Board (the "ERB"), in a country characterized by periodic shortages and allegations of lack of transparency in pricing. It analyses the two principle models of Cost Plus Model and Uniform Pump Price Mechanism used in the regulation of the retail price of the petroleum product and considers the case for cost reflective pricing.

It argues that while the regulatory body has attempted to follow cost reflective pricing in the regulation of retail prices, the said principle is not strictly followed principally as a result of Government's desire to minimize price instability at the cost of providing subsidies. This results in a lack of transparency in the regulation of the petroleum product. As regards the Uniform Pump Price mechanism, although the same can be rationalized on numerous grounds, there is no empirical evidence that the benefits of such a measure outweigh the costs involved.

1.0 <u>Introduction</u>

Petroleum plays a pivotal role in the economic development of every developing country and Zambia is no exception. The price of these commodities is of interest to key stakeholders in the sector:the Government, seeking revenue; Oil Marketing Companies requiring an acceptable return on their capital investment; industry players needing reliability and price stability; consumers and the general public who ultimately rely on a pricing structure in line with inflation and affordability.

Balancing the competing interests of the various stakeholders becomes imperative. It is postulated that optimum price/rate design should result in the delivery and allocation of essential commodities:

effectiveness of revenue requirements for all stakeholders: predictability, efficiency, fairness, simplicity, lack of controversy and transparency.

This Paper focuses on the models of price regulation of Petroleum by the regulator, the Energy Regulation Board (the "ERB"), in a country characterized by periodic shortages and allegations of lack of transparency in pricing. It analyses the two principal models of Cost Plus Model and Uniform Pump Price Mechanism used in the regulation of the retail price of the petroleum product and considers the case for cost reflective pricing.

We begin the exercise by contextualizing the importance of petrol to Zambia.

2.0 The Role of Petroleum in Zambia

Petroleum products are important drivers of the economy the world over. For Zambia, like any developing country, petroleum products principally being petrol, diesel and kerosene are used to fuel industrial activity both at micro level, (i.e small shops use kerosene for lighting) and macro level, (ie to drive engines that dig copper).

Petroleum products are also useful at domestic level to fuel tanks of automobiles used by the majority of the middle class for convenience, especially in a setting where public transport sectors are not well-developed.

For developing countries, access to gas and petroleum play an additional role of stimulating development in less developed/rural areas. Once a fuel station is opened in a rural area, not only does it serve to provide the primary function of providing fuel, but it results in the mushrooming of other industries such as guest houses, entertainment spots and employment opportunities for the local population. In addition, local tourism may be enhanced.

Petroleum is an important factor in social interactions and without fuel many of the social amenities cannot be properly exploited.

Politically, petroleum and gas related issues have been known to usher in new governments and result in the exit of others. In Zambia, the acute shortages of commodities, including fuel, have been blamed for the loss of power by the former ruling party UNIP in 1991.

Petroleum is therefore important, economically, socially and politically.

Like Khan(2013), we do agree that oil is a commodity with huge strategic importance to all countries in the world including, and especially, a developing country like Zambia.

The pivotal role played by the petroleum industry in any country explains the reason behind the high degree of regulation in the industry the world over, Zambia being no exception.

3.0 The Regulator of Gas and Petroleum Prices in Zambia

In Zambia, regulation of gas and petroleum industry is undertaken by the Energy Regulation Board (the "Board").

The Board is created by section 3 of the Energy Regulation Act, Chapter 436 of the Laws of Zambia.

The functions of the Board are provided under section 6 of the Act which states that the Board's mandate is to:

- (a) monitor the efficiency and performance of undertakings, having regard to the purposes for which they were established;
- (b) receive and investigate complaints from consumers on price adjustments made, or services provided, by any undertaking, and regulate such adjustments and services by the attachment of appropriate conditions to licences held by undertakings;
- (c) receive and investigate complaints concerning the location or construction of any common c arrier or any energy or fuel facility or installation or the carrying out of any works by any unde rtaking, and regulate such location and construction by the attachment of appropriate conditions to licences held by undertakings;
- (d) in conjunction with the Zambia Competition Commission established by the Competition and Fair Trading Act, monitor the levels and structures of competition within the energy sector with a view to promoting competition and accessibility to any company or individual who meets the basic requirements for operating as a business in Zambia;
- (e) in conjunction with the Zambia Standards Bureau established by the Standards Act, design standards with regard to the quality, safety and reliability of supply of energy and fuels;
- f) in conjunction with other Government agencies, formulate measures to minimise the;env ironmental impact of the production and supply of energy and the production, transportati on, storage and use of fuels and enforce such measures by the attachment of appropriate conditions to licences held by undertakings; and
- (g) make recommendations to the Minister as to the measures to be taken through regulations to be made under this Act.

The Board may also exercise such other powers and functions as may be imposed by other laws.

The Petroleum Act, Chapter 435 of the Laws of Zambia also confers powers on the Board. This Act makes provisions for regulating the importation, conveyance and storage of petroleum and other inflammable oils and liquids and other incidental matters.

By Section 3, the Minister responsible for Energy is empowered to make regulations for the following purposes:

- (a) prohibiting the importation or exportation of petroleum except to such ports or places and in such quantities and subject to such conditions as may be prescribed;
- (b) regulating the transport of petroleum whether by railway, road or inland navigation;
- (c) regulating the quantity of, mode of storage of, and the receptacles in which petroleum may be carried in any vessel, cart, truck, or other vehicle, and the quantities to be contained in such receptacles;
- (d) regulating the storage of petroleum and providing for the licensing of places in which petroleum is stored;
- (e) prescribing the powers and duties of officers appointed for the purposes of this Act;
- (f) providing for the search and inspection of any ship, vessel, vehicle, building or place in which petroleum is stored or carried or in which there may be reason to believe that petroleum is stored or carried;
- (g)prescribing the fees to be paid for any licence or permit issued or examination or other thing done under this Act;
- (h) generally for carrying out the purposes of this Act.

The regulations under the Petroleum Act are enforced by the Board.

In summary, the Board is responsible for the regulation of fuel prices in Zambia pursuant to the provisions of the two Acts referred to above.

There are principally two ways in which the Board regulates pump prices for consideration in this paper: the Cost Plus Model and the Uniform Pricing Model.

The Cost Plus Model for setting pump prices was imposed by the Board in 1998 and was briefly abandoned in 2004 for the Import Parity Pricing (IPP) methodology which was primarily adopted as a way of improving operational efficiencies at the Indeni Refinery by benchmarking with other international refineries. The Import Parity Pricing was in use until 2008 when there was a shift back to the Cost plus Model following a public outcry on the frequency of the monthly price adjustments under the IPP methodology. Since 2008 it is the Cost plus Model which is used for setting pump prices.

The Uniform Pump Price (UPP) System is yet another fuel price regulation mechanism adopted by the Board. Following a government policy directive, this was implemented in September 2010. The UPP requires that fuel prices be the same at all retail sites in the country. The UPP is managed through a transport cross subsidy mechanism.

The question is, do the two mechanisms for regulation of fuel prices implemented following cost reflective pricing principles? Before delving into the details of what the two mechanisms entail, it is important to address the issue of what cost reflective pricing really means as well as the two principles of efficiency and transparence.

4.0 What is Cost Reflective Pricing?

Cost reflective pricing is the term employed when the price of a good or service reflects its cost of production. It has several benefits, including:

- 1. Where a consumer values a good/service more than its cost of production, the consumer will purchase the good/service. This is a net benefit to society, because the production resources used are less than the consumer benefits gained.
- 2. Where a consumer does not value a good/service more than its cost of production, the consumer will not purchase the good/service. This avoids a net loss to society.
- 3. By sending signals about production costs, cost reflective prices allow consumers' and producers' resources to each be allocated to activities that have the greatest net benefit to society. This maximisation of welfare makes the prices efficient.

In relation to petroleum products, this principle entails that the cost of fuel paid by the consumer reflects the actual cost of procuring or producing the commodity. The government or other industry intermediaries must not subsidize the cost.

Other ancillary principles of cost reflective pricing are transparency and efficiency.

In terms Transparency, this principle requires the regulator in the regulation of the price at cost reflective margins to do the same transparently.

Transparency ensures that any changes in the prices must be predictable and based on known benchmarks capable of independent calibration.

Efficiency entails that the regulator must promote competitive business practices which enhance and encourage efficiency as opposed to encouraging inefficiency.

Cost reflective pricing is one of the premises of competition law, since it promotes market efficiencies. The Consumer Protection and Competition Commission Act (Act No. 24 of 2010) prohibits the sale of goods at less than cost price in accordance with sections 10 (1) and section 16 below:

10. (1) A vertical agreement between enterprises is prohibited per se, and void, to the extent that it involves re-sale price maintenance.

16. (1) An enterprise shall refrain from any act or conduct if, through abuse or acquisition of a dominant position of market power, the act or conduct limits access to markets or otherwise undulyrestrains competition, or has or is likely to have adverse effect ontrade or the economy in general.

(2) For purposes of this Part, "abuse of a dominant position" includes—

(g) selling goods below their marginal or variable cost.

It is thus safe to conclude that cost reflective pricing is not only an economically sound principle but also under competition law, a legal requirement.

5.0 Price Regulation Mechanisms by ERB

As already alluded to, the Board is responsible for the development of the Cost plus Model used to price petroleum products and the UPP.

In terms of regulation, the Board regulates the market players by setting ceilings at which the retail price of petroleum products are sold. This is regardless of whether the petroleum product has been imported as a finished product, (currently it is estimated that 50% of the country's fuel is imported),

or whether the product is procured as crude, (which is refined at Indeni Oil Refinery, the country's only refinery), which accounts for the other half of the country's fuel needs.

The Board does not regulate the wholesale price at which a distributor may choose to sell to another business.

There are essentially three categories of licensees regulated by the Board, these being:

- 1. Oil Market Companies which hold a distribution license;
- 2. Retailing license held by Companies which sell the commodity to the public at a pump station;
- 3. Petroleum Product Transportation license held by oil transporters.

It must be noted that vertical integration is allowed and as such a company can hold all the licenses listed above.

Being a regulated industry, the profit margins of the petroleum licenses are regulated by the Board and a company cannot exceed the set margins, but can recover any lower margin.

The Wholesale Price Build Up

The Board uses the CPM to determine the wholesale price of all the refined products at the Indeni Oil Refinery and the pump pricesfor petrol, diesel and kerosene. In arriving at these prices, the model takes into account the attendant costs incurred along the petroleum supply chain from the port of discharge in Dar-es-salaam to the Refinery where the feedstock is processed up to the Ndola Fuel Terminal where the product is stored and sold.

Table 1 below provides a tabular presentation of the different cost elements up to the wholesale.

Table 1: Cost Elements in the Wholesale Price

COST ELEMENT	UNIT COST	BASIS
Cost-Insurance-Freight (US\$/MT)		Contract/Supplier Invoice
Ocean Losses	0.30%	Best Practice
Wharfage	1.25%	Tanzanian Harbour Authority

Finance Charges	4.00%	Financier
Collateral Manager (US\$/MT)	0.39	Stock Monitoring Agreement
Insurance	0.15%	Insurer
TAZAMA Storage Fee (US\$/MT)	2.00	TAZAMA
TAZAMA Pumping Fee (US\$/MT)	54.00	Approved ERB Pumping Tariff
TAZAMA Pipeline Losses	1.48%	Determined by ERB
Agency Fee (US\$/MT)	5.00	Agency Agreement
Refinery Fee (US\$/MT)	60.38	Approved ERB Processing Fee
Refinery Processing Losses	9%	Determined by ERB
Terminal Losses(LPG, Petrol,		
Diesel/Kero/Jet A1)	1%, 0.5%, 0.3%	Best Practice

The Board explains each component as follows:

i. Cost-Insurance-Freight

The Cost-Insurance-Freight (CIF) of the petroleum feedstock cargo is the landed cost of the cargo at the port of Dar-es-Salaam. The quantities of the constituent components of the petroleum feedstock, which include Crude Oil, Condensate, Naphtha and Gas oil, are multiplied by the unit costs to derive the total monetary cost of the feedstock.

The information is obtained from the supplier's invoice which is based on the contract between Government and the oil supplier and ultimately used to develop a profitability statement.

ii. Ocean Losses

The 0.3% ocean loss is based on international best practice. This is the acceptable loss incurred in the loading and offloading of petroleum feedstock and petroleum products from a vessel.

iii. Wharfage

The Tanzania Harbour Authority levies a statutory charge on the importation of petroleum and petroleum products. At present, this is 1.25% of the CIF Dar-es-Salaam cost.

iv. Finance Charges

A financing charge of 4% to cover the cost of financing the cargo, particularly the letter of credit (LC) costs, and the cost of refinancing for liabilities that remain un-discharged after payment has been effected through the LC.

v. Collateral Management Fees

Collateral management fees are set at US\$0.39/MT. The financier employs the services of a collateral manager in order to secure their interests. The financier usually holds the petroleum feedstock and petroleum products as collateral, so the collateral manager has to manage the stocks. The basis for providing the fees is stipulated in the "Stock Monitoring Agreement" signed between the collateral manager, the financier and the Government agent.

vi. Insurance

The ;insurance costs set at 0.15% of CIF. The insurance covers the cost of insuring the feedstock from the Dar-es-Salaam to Ndola.

vii. TAZAMA Storage Fee

TAZAMA charges US\$2/MT/month to the importer for any petroleum feedstock quantities that are stored at the Dar-es-Salaam tank farm on the last day of the month. The amount was agreed upon between TAZAMA and the Government.

viii. TAZAMA Pumping Fee

TAZAMA charges US\$54.00/MT to the importer for transporting petroleum feedstock through the pipeline from the Dar-es-Salaam tank farm to the Refinery in Ndola.

ix. TAZAMA Pipeline Losses

Consumption and losses for TAZAMA are currently set at 1.48%. The losses comprise of consumption at 0.83% based on the consumption level of 10litres/MT of petroleum feedstock for the pumping engines at the pumping stations and allowable losses at 0.65%.

x. Agency Fee

The Government appointed TAZAMA as agents to discharge specific duties in the procurement of petroleum feedstock. The Agency fee is currently US\$5/MT, the fee is agreed between the Government and TAZAMA. The key function of the agent, amongst others, is to ensure compliance by the supplier to the terms and conditions of the supply contract.

xi. Processing Fee

INDENI charges a processing fee of US\$60.38/MT to the importer for refining (processing) petroleum feedstock.

xii. Refinery Losses

Some petroleum feedstock quantities are lost during the refining process due to:

- i. Normal processing losses; and
- ii. Consumption, as some quantities are consumed as fuel in the process.

The consumption and losses figure are set at 9%, 8.4% relates to consumption with the balance of 0.6% relating to losses.

xiii. Terminal Losses

These are terminal losses as prescribed by international norms. A loss level of 0.5% is allowed for petrol whilst a loss level of 0.3% has been allowed for kerosene and jet A-1, diesel and Heavy Fuel Oil (HFO) covering handling and storage losses. A loss of 1% is provided for liquefied petroleum gas (LPG).

The Pump Price Build-up

The build up to the pump constitutes the terminal fee, respective statutory excise duty on the different products, the OMC, Dealer and transporters margins which are all determined by the ERB, the ERB fees of 0.7% of turnover, the strategic reserves fund (for infrastructure development in the sector and procurement of strategic reserves) and VAT on products. Table 3 below gives an outline of these costs up to the pump.

Table 2: Cost Elements in the Pump Price

1	WHOLESALE PRICE TO OMC		а
2	Terminal Fee	K0.025/litre	b
3	Excise Duty (incl.) road levy		С
4	Ex Refinery Gate		D=(a+b+c)
5	Transport Margin (To LSK)	K0.20/litre	е
6	Transport claim/charge	+ve/-ve	f
7	OMC Margin	K0.42/litre	g
8	15 days stock cost-line	-	h
9	TOTAL (Excl VAT)		J=(d+e+f+g+h)
10	Dealer Margin	K0.28/litre	k
11	PRICE TO DEALER		L= (j +k)
12	ERB Fees	0.7%	m
13	Strategic Reserves Fund	K0.15/litre	n
14	Price before VAT		Q=(l+m+n)
15	VAT	16%	r

16 UNFORM PUMP PRICE K/litre S=(q+r)	16 UNFORM PUMP PRICE	K/litre	S=(q+r)
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Uniform Pump Price (UPP) System

The Board implemented Uniform Pump Pricing (UPP) in September 2010 following a Government policy directive. The UPP requires that fuel prices be the same at all retail sites in the country. The UPP is managed through a transport cross subsidy mechanism.

Oil Marketing Companies (OMCs) or independent dealers delivering fuel to retail sites within the Copperbelt are required to remit transport differential for each liter of fuel into the UPP fund. OMCs or independent dealers delivering fuel to retail sites within the Copperbelt are required to remit the transport differential for each litre of fuel into the UPP fund. OMCs or independent dealers delivering fuel to sites out of the Copperbelt are refunded the transport differential for each litre of fuel.

The UPP has meant that the country now has the same price of fuel at all retail sites in country. The Government established the UPP fund, administered by the Board, to facilitate the cross-subsidization of "rural" consumers by "urban" consumers. An independent UPP Manager was engaged to verify the remittances and claims on the UPP fund.

6.0 Movement of the Factors in the past 5 years

Below is a synopsis of trends of the factors being the cost of fuel at the international market and exchange rate compared to the domestic pump prices as regulated by the Board.

Fuel Price Adjustments From Jan 2011 to Feb 2016 12 10 **Unleaded Petrol** Price (ZMW) 8 ZMK/L 6 Diesel ZMK/L 4 Kerosene 2 ZMK/L 0

Jan-14

Jan-15

Jan-16

Table 3:Trends in Domestic Fuel Pump Price, Jan 2011 – February 2016

Source: ERB website: www.erb.zm accessed on 16th February, 2016

Jan-13

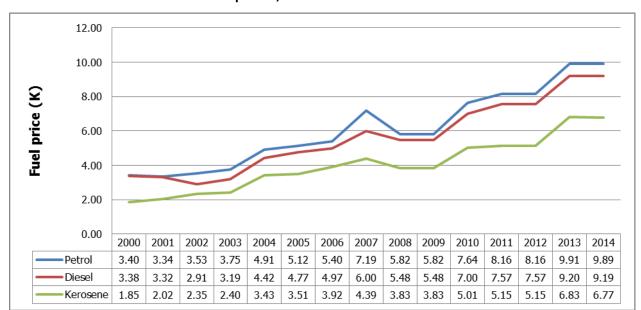


Table 4: Trends in Domestic Fuel Pump Price, 2000 - 2014

Jan-12

Jan-11

Note: Prices used are end year prices.

Exchange rate for the same period

Table 5:Trends in Exchange Rates from 2008 – 2016

2008 2010 2012 2014 2016 SOURCE: WWW.TRADDINGECONOMICS.COM. | OTC INTERBANK

ZAMBIAN KWACHA



SOURCE: WWW.TRADINGECONOMICS.COM | OTC INTERBANK

Cost of crude oil at international market

Table 6:Trends in Crude Oil Prices on the International Market from 2008 - 2016



7.0 Analysis of the Regulation in the light of cost reflective pricing principles

The Board reviews the retail prices of petrol every six weeks which period which period is supposed to coincide with a new cargo of crude oil procured. As a rule, the Board will only adjust the price if the cost margins escalate beyond 2.5% threshold.

However, in practice, the Board usually does not adjust the price as often as every six weeks as Table 3 above clearly shows. The reason is not because the 2.5% threshold is not breached as the same is usually breached on account of exchange rate fluctuations, but because for political and economic reasons price instability is not favoured.

When the exchange rate fluctuations (ZMW/US\$) result inexchange losses which affect the ability to finance new shipments, these are then met by the Government, which is a form of subsidy.

It must be noted that officially, Government terminated the policy for fuel subsidy in May, 2013, but Government subsidy still subsists in form of financing losses for procurement of fuel. It does not favourGovernment to pass on every cost to the consumer for fear of political instability which comes with constant changes in the price of fuel.

According to Deck and Wilson¹, who were investigating different phenomena in the United States that may have an impact on pump prices, they identify the concept of **rockets and feathers.**

The "rockets and feathers" phenomenon postulates that retail prices rise faster than they fall, which has been proven by empirical studies.

In Zambia, the rockets and feathers phenomenon is equally present.

From various newspaper articles, it does appear that the public generally viewsthe Board with suspicion when prices do not fall quickly enough, especially when world prices are generally low.

On the Uniform Pump Price Mechanism, it must be noted that the practice of compensation, or price adjustment, is not confined to the developing world, and examples can be observed in Europe, as per McKinnon² who explores how to level the playing field between UK and EU diesel prices for hauliers and proposes methods of compensation.

In a World Bank Research Paper³ on developing countries' reactions to fluctuations in crude oil prices since 2009, the report summarizes price control mechanisms and respective advantages and disadvantages in the table set out below:

Table 7: Types of price control		
Mechanism	Advantages	Potential problems
Price ceilings	There is scope for price	If price ceilings are too high,
	competition. Divergence from	there is little incentive to
	ceilings suggests emerging	improve efficiency. If they are
	competition. There is less need	too low, fuel business may cease

¹Does "anti–price gouging" legislation really help gasoline consumers? Economics at the Pump BY CARYA. DECK, University of Arkansas and BART J. WILSON, George Mason University

²Increasing fuel prices and market distortion in a domestic road haulage market: the case of the United Kingdom Alan C. McKinnon (*Logistics Research Centre, Heriot-Watt University, Edinburgh*)

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³Petroleum Product Pricing and Complementary Policies Experience of 65 Developing Countries Since 2009, World Bank Working Research Paper No. 6396, Masami Kojima, The World Bank Sustainable Energy Department, Oil, Gas, and Mining Unit, April 2013, WPS6396 Public Disclosure

	to get the prices "exactly right"	to be financially viable.
	than controlling price levels.	
		There is no scope for price
Price levels	Greater control.	competition. If price levels are
		set too high, there is little
		incentive to improve efficiency,
		and if set too low, fuel business
		may cease to be financially
		viable.
Control at retail	Easy for consumers to check	More assumptions are needed
	compliance.	to calculate prices than
		controlling retail prices.
		Compliance is more difficult to
		monitor because the number of
		points to be checked is the
		largest at retail.
Control at wholesale or	More transparent because of	If competition is inadequate,
elsewhere upstream of retail	greater correlation with	margins could grow and retail
	benchmark international prices,	prices could be markedly higher
	easier to monitor compliance	than otherwise. If upstream
	because there are fewer points	prices are set too low, oil
	of sale.	companies may try to recover
		losses by increasing retail prices
		to compensate.
Uniform prices	Sense of national unity: one	Freight equalization introduces
	country, one price. Easy for	additional scope for inefficiency
	consumers to check compliance.	as well as corruption. The size of
		cross-subsidization could
		become very large, to the point
		of making the cost of
		compliance unacceptably high.

Pricing by location	Costs are better reflected.	Consumers in remote areas may
		compare themselves to those in
		major cities and feel a sense of
		injustice. If costs of serving
		remote areas are too high, some
		remote areas may not be
		served.

What is lacking in the Zambian experience is empirical evidence to justify that the benefits of the adopted mechanisms outweigh the cost. Without such empirical evidence, it will always be a challenge to gauge the sustainability of the adopted measure.

12. <u>Conclusions</u>

12.1 Summary of principle findings

While the Board does attempt to follow cost reflective pricing in general through its Cost Plus Model for retail price regulation, Cost reflective Pricing is not currently being strictly implemented in Zambia.

Although to a much lesser extent than prior to May, 2013, the Government still subsidizes the cost of fuel on behalf of the consumer in order to avoid price instability, which is inevitable where cost reflective pricing is followed strictly.

While the Board has a clear benchmark about how prices are supposed to be set, transparency in the regulation of the cost of fuel remains low because the set prices are not capable of independent calibration by consumers and industry players, which is a hallmark of transparency.

The Board still maintains the price despite substantial changes in the procurement cost as fuel price stability is often favorable for political expediency and the cost differential is met by the Government.

As feared by other authors, the Uniform Pump Price, although justifiable for a number of reasons, does not encourage efficiency on the part of the oil dealers, hence it is inherently anti-competitive but also results in subsidization of the cost of fuel by one set of consumers (i.e those

closest to the source). Whilst it is easy to rationalize such subsidization, there is lack of empirical evidence that as a whole the country is better off than if each consumer paid only the cost to supply them, as opposed to the cost for supplying everyone else in the country.

Cost reflective pricing is not currently implemented in Zambia, and the distribution and sale of petroleum products is highly regulated. The Petroleum Act mandates that all OMCs should obtain a license and the Board endorses and implements Government Policy. Currently, the cost plus model sets pump prices and OMCs are not able to sell beyond the price set by the Board. The second level of regulation is the UPP, whereby the OMCs effectively subsidize the transport cost of supply in areas far from the refinery.

At present, this regulation protects the consumer and the economy from price fluctuations which could create instability. The UPP prevents inaccessibility to fuel in the rural and underdeveloped areas, where transportation is costly.

The distribution value chain in Zambia is not the only model, and in other countries there may be more players (ie. wholesalers and retailers, independent retailers and independent distributors). Some research suggests that where there are more players, regulation may be detrimental to consumer price.

The current scenario in Zambia leads to a pricing gap as set out above, which is compensated by Government subsidies.

The World Bank comparative study points out the danger of subsidies, these may a) disadvantage certain players and b) ultimately lead to shortages, strife and inefficiencies. The report encourages the play of free market forces in order to promote sustained economic development and efficiency.

12.2 Implications for the Future

The question to be addressed is at what point should principles of free and fair competition and the imposition of cost reflective pricing prevail over regulation? Achieving the balance for a developing country which does not produce fuel is not an easy task. However, a balance must always be struck by use of empirical evidence which clearly shows that leaning in one direction is better than the other. As a general rule, free competition and cost reflective pricing are principles which underlie a free market economy, growth, development and prosperity.

The rationale behind the imposition of uniform pump prices is to create equality and development across the country where it would otherwise have been too expensive to invest or set up a filling station, as a stimulus for development. Though noble, there is need for research to establish empirical evidence that the benefits of the Uniform Pump Pricing outweigh its costs.

The Cost PlusModel as implemented by the Board ensures predictability of prices and stability in the face of the volatility of exchange rates (and other factors which are beyond the control of developing countries). Instability could be detrimental to growth and the attraction of much needed foreign indirect investment, but does this policy result in a serious drain on national resources with the ensuing danger of inability of the Government to purchase fuel due to fiscal deficits?

One suggestion would be to explore an interim solution of imposing cost reflective pricing in areas where the consumer has affordability (in urban areas and on industrial players). The regulation which is intended to create favourable conditions for development in under privileged areas could remain to promote economic empowerment, but free market forces could be at play where this is more appropriate. Although the cost of business may increase, the converse effect would be that consumers would benefit when crude oil prices are lower. Further, currently competition, profitability and productivity are being distorted due to fuel subsidies. Where profit-making entities are forced to factor cost reflective prices of fuel products into their business models and consumers in urban areas who have access to employment and markets to support the informal sector no longer benefit from subsidies, the positive impact on the fiscal deficit may lead to a beneficial outcome in the long term.

Consistent with the above suggestion, there is also need to examine the concept of targeted subsidization whereby areas for development will benefit from much needed subsidies, whereas those with the deeper pocket will pay a cost reflective price, (eg. assistance to transport companies, farmers and fisheries as per Kojima in the World Bank Report cited above).

REFERENCES

Petroleum Product Pricing and Complementary Policies Experience of 65 Developing Countries Since 2009, World Bank Working Research Paper No. 6396, Masami Kojima, The World Bank Sustainable Energy Department, Oil, Gas, and Mining Unit, April 2013, WPS6396 Public Disclosure

Dewenter, Ralf; Heimeshoff, Ulrich (2012): Less pain at the pump? The effects of regulatory interventions in retail gasoline markets, DICE Discussion Paper, No. 51, ISBN 978-3-86304-050-5

Does "anti-price gouging" legislation really help gasoline consumers? Economics at the Pump BY CARYA. DECK, University of Arkansas and BART J. WILSON, George Mason University

SeverinBorenstein, A. Colin Cameron, Richard Gilbert, "Do Gasoline Prices Change Asymmetrically to Crude Oil Price Changes?" Working Paper National Bureau of Economic Research, Cambridge Massachusetts, August 1992

Increasing fuel prices and market distortion in a domestic road haulage market: the case of the United

Kingdom Alan C. McKinnon (*Logistics Research Centre, Heriot-Watt University, Edinburgh)*

Pricing, Subsidies, and the Poor: Demand for Improved Water Services in Central America , World

Bank Policy Research Working Paper No.2468

Ian Walker , Fidel Ordoñez , Pedro Serrano and ,Jonathan Halpern ,2004 University of Warwick

Oil and Economy: Factors Influencing Crude Oil Prices and the Significance of these on the Global Economy Ahmed Sohaib Zafar Khan, 2013 Independent

Pump and circumstance Why the oil companies stayed silent during the fuel crisis Greg Muttitt and James Marriott Wednesday October 4, 2000 The Guardian

PRICE ADJUSTMENTS AND ASYMMETRY IN THEPHILIPPINE RETAIL GASOLINE MARKET JOHN MICHAEL IAN S. SALAS University of the Philippines School of Economics April 2002

FUEL TAXATION Andrew Leicester THE INSTITUTE FOR FISCAL STUDIES Briefing Note No. 55

Policy Forum: Tax-Included Pricing for HST—Are We There Yet? David M. Sherman

UK Gasoline Prices: How Fast are Changes in Crude Prices Transmitted to the Pump? Robert Bacon

Oxford Institute for Energy Studies EE2 1986

The Consumer Protection and Competition Commission Act, (Act No. 24 of 2010)

The Petroleum Act, Chapter 435 of the Laws of Zambia.

The Energy Regulation Act, Chapter 436 of the Laws of Zambia.