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VALUE ADDED TAX AND VAT FLAT RATE SCHEME IN GHANA, ANY CASCADING IMPLICATIONS



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ABSTRACT

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Ghana in 2017 introduced a new VAT flat rate scheme (VFRS) of 3% for retailers as against the existing normal rate of 17.5%. Debate, similar to that VAT, as to the tax incidence and the cascading effect on businesses in the distribution chain ensued. The Revenue Authority and retail businesses are content that VFRS will mitigate the tax burden of consumers and simplify its calculation. Other business houses posit that the tax is upon tax with cascading effect on prices. Literature comparing charges of VAT and VFRS on a product in distribution is limited. Literature is reviewed with models testing any cascading effect of VFRS on consumers and the effect on tax revenue. The paper concludes that the incidence of VAT is on the consumer with no cascading effect. VFRS is charged onto the final consumer of the product. VFRS can mitigate the tax burden on consumers' dependant on the market orientation, type of industry and business environment. Government can use VFRS to stabilize the economic environment in the event of market failure for tax optimality. The paper will enhance policy on optimizing tax revenue with different tax rates at different production sectors of the economy.

Contribution/ Originality: The paper's primary contribution is finding that specific or direct tax and ad valorem tax ensures tax shifting effect on consumers in different market structures and how VFRS can protect consumers and ensure tax optimality.

1. INTRODUCTION

Ghana is confronted with the issue of charging a lower VAT rate of 3% known as the VAT flat rate scheme (VFRS) alongside an existing rate of 17.5%. The new tax policy was implemented on July 1, 2017 backed by, ACT 948, an amendment ACT to Value Added Act 870. The law known as VAT flat rate scheme (VFRS) targeting retailers and some wholesalers introduced a marginal rate of 3% charged alongside VAT rate of 17.5%. The policy objective of the law is to facilitate the tax deduction by traders who cannot keep proper records and cannot afford the services of professionals to do the calculations of the tax.

According to the Ghana Revenue Authority (GRA) the 3% VFRS is considered to be the marginal rate between the input and output VAT and when charged at the final stage of the distribution chain there cannot be an additional charge to the consumer. However, reaction to this position of GRA is mixed and has created debate between the Government, the Ghana Union Traders Association (GUTA), Association of Ghana Industries (AGI)

and other business trade unions in the country (ghananewsonline.com.gh, 2017). The bone of contention has been the incidence of the tax and anticipated inflationary impact on prices of goods. Industries players, manufacturers and importers argued that the introduction of the 3% VAT Flat Rate Scheme (VFRS) would see them paying 3% more (ghananewsonline.com.gh, 2017). However, The Ghana Union of Traders Association (GUTA) presented a counter petition to the Finance Committee of Parliament supporting the implementation of the 3% VAT rate (ghananewsonline.com.gh, 2017). Some experts agree that the position of GUTA supporting VFRS is normal, they are the last in the distribution chain therefore members of the group have no problem. The experts affirms that VFRS is for the traders in the informal sector who have problem calculating the tax, but could have cascading effect on prices of other business houses, saying since 3% VAT is not claimable it is added to the price and at each stage of the distribution. It is transferred to the next person in the chain of distribution. The position of cascading effect of VFRS is not empirically explained. VFRS can be a form of specific tax and not just ad valorem

This new VFRS may be to optimize tax revenue ensure welfare and some equity to the populace.

Taxes are imposed by governments generally to raise revenue in which case there should be some optimality to ensure equity in terms of tax bases and eligible persons subject to pay. Taxes can also be identified with welfare schemes of the citizenry through redistribution and allocation of resources (Diamond, 1973) and finally as an adjusting tool in the socio economic environment to ensure equilibrium in the market (Obeng, 2017b).

Government has to incur expenditure to satisfy its objective of serving the interest of the citizenry and the other stakeholders and partners in development. The expenditure is to be financed through taxes, loans or sale of Government assets (Obeng, 2017a). The preferred choice has always been to raise enough domestic revenue through taxes than through loans and sale of assets.

Tax may take a form or type of being either direct or indirect; that is the effect of incidence or burden on the payer. It can be ad valorem (volume/total) or specific tax (unit). The type or form of a tax imposed may be influenced by certain characteristics (Barzel, 1976) of the product, features and values of the subjects or the market structure.

Value Added Tax (VAT), has gained prominence in revenue mobilization and ensure optimality of the tax system (Kay and Keen, 1987; Delipalla and O' Donnel, 1998; Kotsogiannis and Serfesz, 2010). It is an indirect type of tax which is imposed on consumption or expenditure made by consumers for goods and services (Obeng, 2018). There are other types of tax like VFRS that may be seen as specific with direct burden on consumption and expenditure and income. Ad valorem tax and specific tax can be charged on the same product or transaction and in effect create tax shifting to be at advantage or disadvantage to consumers. The shifting of tax may also be influenced by the market structure

The market imperfections could generate both over and under-shifting of commodity taxes to consumer prices (Seade, 1987; Delipalla and Keen, 1992; Besley and Rosen, 1999; Anderson *et al.*, 2001; Gaarder, 2016).

It is important to establish the relationship between the ad valorem tax at 17.5% and the VFRS of 3% for tax optimality and to find out how the market structure can influence the achievement of these objectives. The work also look at the framework of VAT and VFRS, find out if 3% VAT Flat Rate Scheme (VFRS) would result in consumers paying more; the incidence of the type of taxes and influence on policy direction.

2. VALUE ADDED TAX (VAT) AND VAT FLAT RATE SCHEME (VFRS)

VAT and VFRS are flat percentage charges on value added by the business firm which the consumer is prepared to pay. The value added according to Tait (1988) is wages plus profit or output minus input. Better still value added is the direct business expenses (conversion cost) plus profit margin added to the cost of acquisition of inputs (Obeng, 2018). Capital expenditure does not form part of the value added except the part (depreciation) consumed during the period (Obeng, 2018). Sales tax is on all business turnovers (Tait, 1988) and on capital expenditure. VAT varies with the value added at any stage of the distribution chain and takes a constant portion of

that value (Obeng, 2018). Once the tax is imposed it remains same until the rate or value added is changed. The business firm cannot in anyway influence the amount to be charged because it is a separate charge and not part of its operational cost (Obeng, 2018). VAT flat rate scheme (VFRS) introduced in Ghana differs from normal VAT on the basis that it is charged once at the final stage of the distribution channel. Those persons eligible to charge VFRS do not qualify to take credit of input VAT but add it as part of cost to the consumer on which VFRS is calculated. It should be noted that VAT and VFRS can be charged on the same transaction of a product but at different stages and rates with VAT being a cost to the retailer before VFRS is calculated.

The issue of charging different VAT rates at different stages of a common transaction for a product can happen in rare circumstances. Comparing such rates to understand the effect and incidence on consumers in literature is limited. Delipalla and O' Donnel (1998) comparing Ad valorem and specific tax on cigarette observed that empirical comparison of the price effects of the two taxes is limited. There are no previous estimates of these effects derived from data displaying reasonable variation in both types of taxes. The work carried on by Delipalla and O' Donnel (1998) was on the same product with different tax strategy or regime in different market type and environment.

Crawford *et al.* (2010) carried on studies on value added tax and excise tax to find appropriate balance between direct and indirect taxation—between income taxes and taxes on goods and services. Their study on direct and indirect taxation revealed that a broad-based consumption tax implemented in parallel with taxes on income reduces the risk of revenue losses. Savings in tax revenue is made by spreading taxation across a number of sources, each of which, to some degree, independently enforced. Their consideration therefore was on tax optimality and efficiency in public finance.

In the case of VAT and VFRS it can be considered as being different tax strategy, ad valorem tax and specific tax that may be applied on the same product and transactions in the same market. VAT is part cost or value added in calculating VFRS. VFRS is implemented with the consideration of efficiency and mitigating a social problem of tax burden to cushion lower income consumers (Barzel, 1976) and simplify the tax calculation. There are two different rates that are applicable at the final stage of passing the product to the consumer. The choice of rate is at the discretion of the distributor, who may be a wholesaler or a retailer depending on number of factors (Kotsogiannis and Serfes, 2010) and at different stages of the distribution channel. Factors that can impede the smooth operation of the VFRS policy may include the type of industry, product type, production processes, distribution stages, value added, and cost-profit and market structures. Some industries are considered fundamental and of public good and security and may attract special dispensation in taxation. The product type, the number of production processes of the product and the number of distribution chain may add different values with different cost and profit structure. The stages to attract VAT and VFRS may differ and the effect and impact may equally differ. The market structure of being competitive or noncompetitive is another issue that needs greater consideration. Any serious price variation, value added, consumer welfare and tax shifting in products are greatly influenced by the competitiveness of the market. The uncertainties of these variables should be of concern in making any comparison (Barzel, 1976; Kay and Keen, 1987; Kotsogiannis and Serfes, 2010).

3. CASCADING TAX EFFECT OF VAT AND VFRS BEING INFLATIONARY

One of the problems cited by some experts and businesses in Ghana against the introduction of VAT flat rate scheme (VFRS) is the cascading effect of the tax (ghananewsonline.com.gh, July, 2017). Cascading tax effect in taxation is a situation where tax is charged or paid on tax. A good taxation regime always takes step to avoid “taxation over taxes” or “cascading-effect” of the incident taxes (Kumar, 2012). Cascading-effect adds to the cost to the final consumer, deadweight loss, and slump in total surplus of supply chain consisting of supplier, manufacturer, retailer and consumer (Kumar, 2012). Cascading-effect is prominent in situations of levying variety of charges in the governmental structure with each unit of government charging same tax as a product pass through their jurisdiction. State and union governments raised the tax-burden on products and made them less competitive in the

International market (Kumar, 2012). The resultant heavy taxes on corporate entities and similar business houses are motivating these entities to adopt tax-evasive practices (Kumar, 2012). This problem affects government revenue and attainment of tax optimality which the introduction of VAT seeks to correct. The proper implementation of VAT of any form cannot be inflationary or cascading. The question that comes to mind is why the panic? Tait (1988) in his study gave a summary of what he considered to be the fear expressed by persons opposing VAT as; regressivity of VAT, VAT as money machine, VAT being inflationary, intrusion of traditional preserve of authorities raising revenue and administrative nightmare.

The decision of the six (6) countries of Gulf Cooperation Council (GCC) namely; The United Arab Emirates (UAE), Saudi Arabia, Kuwait, Bahrain, Oman and Qatar was met with similar concerns of VAT being inflationary and its incidence (Euromonitor International, 2016).

Euromonitor International's Industry Forecast Model (IFM), suggested VAT to have significantly different impact on different consumer industries and expected to raise consumer prices. John (2017) challenged the introduction of five per cent (5%) VAT across the GCC to have fundamental change in the way businesses operate and will impact most consumer sectors

Mukhopadhyay (2005) opposed the position that introduction of value-added tax would set in motion a spiral in which tax, prices and wages would feed on each other, that is, VAT would be inflationary. Mukhopadhyay (2005) opined that if the inflationary impact is taken to mean a sustained increase in the rate of inflation then the concern would be conceptually misguided.

Tait (1988) in analyzing the effect of VAT introduction for the first time in some countries found out that; VAT is never introduced in isolation, a number of variables are influencing price change, and therefore, it is difficult to empirically assess the effect and impact of VAT on prices. It cannot therefore, be strictly segregated from the general trend in inflation (Tait, 1988). The most important conclusion of the survey is that there seems to be nothing inherently inflationary about the use of VAT

Mukhopadhyay (2005) in a study clearly stated that VAT being inflationary is insignificant, or none at all (Obeng, 2018).

Besley and Rosen (1999) also found in their study that some commodities after tax prices increase by exactly the same amount of tax while others are over shifted- an increase in tax revenue (Kay and Keen, 1987; Delipalla and Keen, 1992; Kotsogiannis and Serfesz, 2010).

VAT and VFERS are indirect taxes chargeable to the final consumer at the final stage of the distribution channel. VAT is charged by a registered firm with a required turnover threshold. VAT or Goods and Services Tax (GST) as referred to in other jurisdictions, is charged on every point of sale in the supply chain (Kumar, 2012). The sellers or service providers collect the tax from their customer, who may or may not be the ultimate customer, and before depositing the same to the Revenue Authority, they deduct the tax they have already paid (Kumar, 2012). VFERS is charged at the final stage by eligible persons who do not qualify for deduction input credit but such persons take input VAT as an additional cost of their products before charging the rate of 3%. VAT and VFERS replaced sales tax which had cascading effect that is tax on tax (Tait, 1988). VAT was introduced to replace, reduce or abolish existing tax considered to be nuisance and inefficient in mobilizing revenue for the state (Kay and Keen, 1987; Tait, 1988; Delipalla and Keen, 1992; Kotsogiannis and Serfesz, 2010).

It is evidenced enough to say that VAT and for that matter VFERS cannot be said to be a major cause and basis for price increases after their introduction (Tait, 1988; Mukhopadhyay, 2005). At best the effect on price is the level of the tax (Besley and Rosen, 1999). Therefore it can be deduced emphatically that VAT and VFERS are not inflationary or cascading.

4. INCIDENCE OF VAT AND VFRS

Tax incidence is concerned with the effect of taxation upon prices and profits (Delipalla and O' Donnel, 1998). The incidence of VAT and VFRS is on the consumer. It is an appropriation of the consumers' income and not a charge on the profit of the business enterprise (Obeng, 2018). The Mirrlees Review as cited by Gaarder (2016) affirms the position that the incidence of VAT is fully on consumer prices. VFRS as a charge on the total cost of the product at the final stage plus input VAT has the incidence on the final consumer.

Gaarder (2016) citing Carbonnier (2007) on VAT reforms in France came out that majority of the tax burden is paid by consumers, especially in the competitive market for housing repair services.

VAT is introduced to ensure production efficiency, replace, reduce or abolish existing tax considered to be nuisance and inefficient in mobilizing revenue for the state (Tait, 1988). Business transactions on inputs or intermediate goods are not on target for VAT and VFRS but the final consumer. It is a key reason for the use of the VAT in preference to taxes that impact intermediate goods transactions (Crawford *et al.*, 2010). VAT ensures a chain of output tax and input credit which remains unbroken, that no net revenue is collected from the taxation of intermediate goods sales so that the ultimate base of the tax is final consumption (Crawford *et al.*, 2010; Kumar, 2012).

To adequately analyze the incidence of VAT at 17.5% and VFRS at 3%, the market structure should be appreciated. Shifting tax to the consumer may be over or under depending on the competitiveness of the market I applying VAT and VFRS. VAT is eligible for input credit, therefore in case output VAT is lower than input VAT the person qualifies for refund. This implies that there can be under shifting of VAT. VFRS does not qualify for input VAT credit, but add input VAT to the cost of the product at the final stage of consumption. The tax to be shifted can be higher or over shifted. When input VAT is higher than output VAT, VFRS add more to the price of the product.

Delipalla and O' Donnel (1998) opined that since perfectly competitive firms earn zero profits, under perfect competition there is only a price effect. For normal VAT at 17.5% and VFRS of 3%, price rising by more than the amount of the tax is not a possibility.

Under imperfect competition there are both price and profit effects. Since prices are set above marginal cost, an increase in cost due to a change in taxation need not be reflected in an identical increase in price. Over shifting occurs when price rises by more than the amount of VAT and under shifting when it rises by less (Seade, 1985; Stern, 1987). In situations where value added is below the optimal level cost to the consumer would be lower and cost to the consumer under VFRS is higher giving more tax revenue. As observed by Kotsogiannis and Serfes (2010) specific taxation, in this case VFRS might dominate ad valorem in terms of tax revenues. Ad valorem taxation might dominate in terms of profits and consumer surplus (Kotsogiannis and Serfes, 2010) in cases where value added is above the optimal level, cost to the consumer would be higher and cost to the consumer under VFRS would be lower, giving lesser tax revenue.

5. EFFECT (INCIDENCE) OF VAT AND VFRS AND THE CASE OF MARKET FAILURE

This section looks at the market structure and how it can influence the achievement of tax objectives and policy direction through the introduction and working together of value added tax (VAT) as ad valorem and VAT flat rate scheme (VFRS) as a specific tax.

Individual private members of society carry on various economic activities motivated by their self interest to make profit at the expense of others and the society if not checked. In the free market system the price mechanism or the invisible hand of demand and supply ensures efficiency in production and the distribution of resources. Price rising by more than the amount of the tax may indicate imperfection of the system a situation that is not a possibility in perfect competition (Delipalla and O' Donnel, 1998). If the system worked perfectly there would be no market failure (Slavin, 2002). In the free market there is competition whereby participants cannot control the

market except the price bidding offered by the market (Obeng, 2018). When resources are not allocated efficiently there is market failure. Market failure could occur in monopoly or oligopoly instances (Slavin, 2002). In such cases the price mechanism is broken down (Eaton *et al.*, 2005). Uncertainty of information may distort business transactions and the market will fail to make maximum gains from trade (Eaton *et al.*, 2005; Kotsogiannis and Serfes, 2010). For the reason of production efficiency and allocation of resources and limiting the factors of externalities and market failure government collects taxes, provide services and issues regulations (Slavin, 2002) to control the economy. VAT that does not affect intermediate goods but charges the final consumer is a best tax strategy for maintaining the price mechanism and ensuring perfect competition and efficiency in the business environment (Kay and Keen, 1987; Tait, 1988; Delipalla and O' Donnel, 1998; Kotsogiannis and Serfes, 2010; Atkinson, 2013).

The cost of the business operations is established to be separate from VAT which is a charge to the consumer (Obeng, 2018). The VAT is not part of the pricing policy of the firm and qualifies to claim credit for input VAT. VAT flat rate scheme (VFRS) of 3% is a charge on cost of the product at any stage of the distribution chain plus the input VAT from the previous stage of the distribution channel. The final price of a product to the consumer may differ from stage to stage depending on the amount of the total tax to be shifted at a given stage and the market structure.

The preference, acceptance or rejection of VFRS by any party; firms and businesses or the Government depends on their respective objectives. Adding input VAT to the cost of a product at final stage of the distribution chain before charging 3% flat rate make VFRS to be more specific than ad valorem. In this case we can make a comparison between ad valorem tax at 17.5% and marginal rate 3% between output and input VAT to see the effect and incidence in different market structures

In environments which rely more heavily on specific taxation, there is under shifting of ad valorem and full shifting of specific taxes. In the environments where there is greater reliance on ad valorem taxation, there is full shifting of the ad valorem and over shifting of the specific tax. In both cases, the specific tax has, significantly, greater effect on price than the ad valorem (Cremer and Thisse, 1994; Delipalla and O' Donnel, 1998; Kotsogiannis and Serfes, 2010). Government in its effort to ensure tax optimality, efficiency and welfare of society can adopt strategy of combining VAT rate and VFRS at different rates contingent on prevailing circumstances and not all time specific rates.

The under, full and over shifting of taxes is further explained by models in the subsequent sections.

6. MODELS EXPLAINING 3% MARGINAL VAT AS AGAINST 17.5%

This section addresses the 3% marginal VAT rate charged by selected businesses or eligible retailers offering goods and services or imports to the consumer in Ghana. The 3% marginal VAT could be seen as specific tax, an intervention adjusting the 17.5% VAT rate. The VFRS is considered to help under-privileged persons affected by Government policies and control of inefficiencies in the system. It also simplifies the tax calculation of nonprofessionals and small businesses. Consideration is given to the VAT rate of 17.5% and the VFRS rate of 3% and their effect on prices and VFRS models to establish the optimum value added level to explain the effect of VAT and VFRS in tax shifting and in different market orientations.

6.1. Rate Payable as VAT and as NHIS Levy

The Value Added Tax (VAT), Act 2015, Act 870 Section 3 as amended has a rate of 15% (Initial VAT of 12.5 and GET-Fund of 2.5%) plus NHIS levy of 2.5% and is charged on;

- a. Supply of goods or services made in the country other than exempt goods or services and
- b. Import of goods or import of services other than exempt import.

1.1. VFRS Rate of 3% and Effect on Prices and Taxes

The introduction of the 3% tax rate to be charged by retailers and other selected businesses have created the impression that;

- a. Consumers will pay more and be inflationary, as compared to the 17.5%
- b. The incidence of the tax is cascading
- c. The VFRS is an additional tax

These submissions and concerns lend themselves for critical study and analysis to establish the reality or otherwise of these positions and models presented to see how VFRS is used to optimize value added.

6.1.1. The VFRS Model Optimizing Value Added

VFRS is charged at a marginal rate of 3%, a policy direction that it is the difference between output and input VAT. VFRS is optimized when tax effect recognizes a greater benefit to the consumer, where the final cost to the consumer is lower at 3% VFRS or equal to VAT rate of 17.5%. In effect government loses tax revenue that satisfies the objective of mitigation of tax burden on consumers. There is under shifting signifying a competitive market where output VAT at 3% is lower than output vat at 17.5%. Full shifting of tax in a perfect market should occur when output VAT minus input VAT would give a marginal rate of 3% and value added peak at a point where output VAT at 3% equals output vat at 17.5%. Where output vat at marginal rate of 3% (specific tax) exceeds output VAT at 17.5% (ad valorem) there is over shifting of tax and indication of imperfect market and more tax revenue is earned.

The three scenarios of VFRS effect of under shifting, full shifting and under shifting of the tax in competitive and non competitive markets are expressed in functions (models) below;

$$\frac{0.175(OVA - IVA)}{OVA} = VFRS (0.03)$$

$$0.175(OVA - IVA) = 0.03(OVA)$$

$$0.175 (IVA) = 0.175(OVA) - 0.03(OVA)$$

$$0.175 (IVA) = 0.145 (OVA)$$

$$OVA = \frac{0.175 (IVA)}{0.145}$$

$$0.145$$

$$\frac{0.175(OVA - IVA)}{OVA} \leq VFRS (0.03) \Rightarrow \text{competitive market}$$

$$OVA$$

$$\frac{0.175(OVA - IVA)}{OVA} > VFRS (0.03) \Rightarrow \text{noncompetitive market}$$

$$OVA$$

$$0.175(OVA) = 0.03(OVA + VAT_1) \Rightarrow \text{full shifting of tax}$$

$$0.175(OVA) < 0.03(OVA + VAT_1) \Rightarrow \text{over shifting of tax}$$

$$0.175(OVA) > 0.03(OVA + VAT_1) \Rightarrow \text{under shifting of tax}$$

Where;

OVA = output/current value added

IVA = input/initial/previous stage value added

Value added (VA) = total of intermediate (conversion) cost, profit and other expenses

VAT₁ = Value added tax from the previous stage

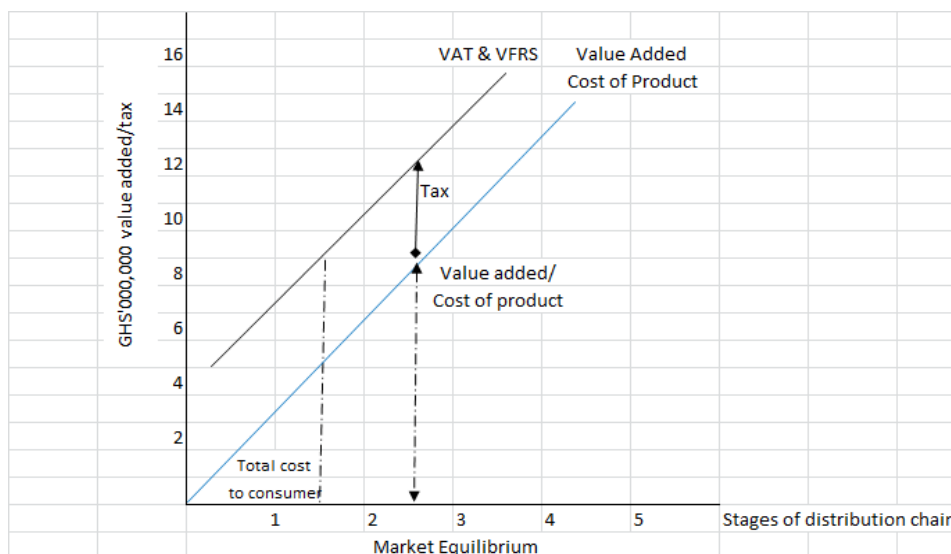
6.1.2. VFRS Optimization of Cost to the Consumer

The VFRS optimization has the function $0.175(OVA) = 0.03(OVA + VAT_1)$ which implies full shifting of tax. In this case the policy objective is achieved where the tax effect ensures that the final cost to the consumer under

VAT at 17.5% on output or current value added plus the intermediate or conversion cost is equal to VFERS rate of 3% on the current value added plus the value added tax from the previous stage added to the gross or the prime cost

$$(0.175(OVA)+OVA) = 0.03(OVA + VAT_1) + (OVA + VAT_1) \text{ or}$$

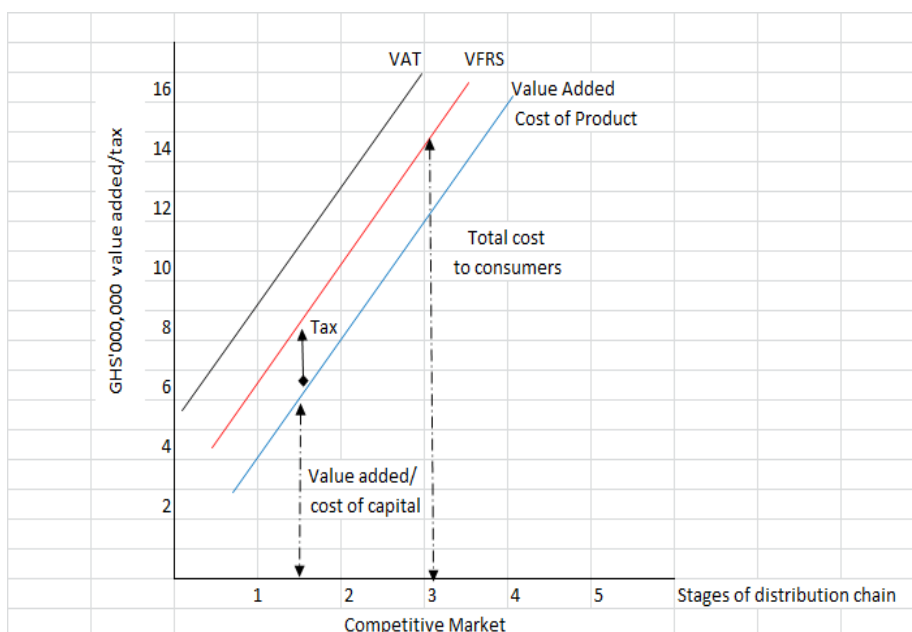
$$0.175(OVA) - 0.03(OVA + VAT_1) = 0$$



This is in competitive environment bringing the market in order and VAT & VFERS are equal at equilibrium for optimum tax level. Total cost to consumer is tax + cost of product. Cost of the product and VAT is equal to cost of product and VFERS, representing full shifting of tax (VAT)

6.1.3. Cost with VAT (17.5%) Exceeding Optimal Value

The VFERS under shifting has the function $0.175(OVA) > 0.03(OVA + VAT_1)$ which implies under shifting of tax. In this case the policy objective is achieved where the tax effect ensures that the final cost to the consumer under VAT at 17.5% on output or current value added (total of intermediate (conversion) cost, profit and other expenses) plus the intermediate or conversion cost is greater than VFERS rate of 3% on the current value added plus the value added tax from the previous stage added to the gross or the prime cost $(0.175(OVA)+OVA) = 0.03(OVA + VAT_1) + (OVA + VAT_1)$ or $0.175(OVA) - 0.03(OVA + VAT_1) = \text{Positive value}$



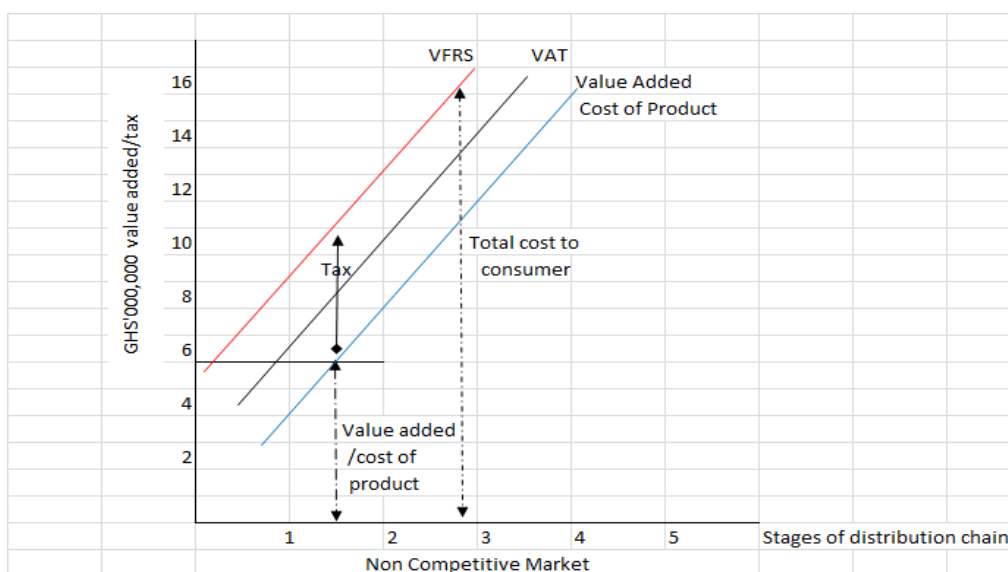
In the competitive environment there is under shifting of VAT by the VFERS. This also ensures welfare of society and tax optimality. Total cost to consumer is VFERS plus cost of product. VAT at 17.5% plus cost of the product is higher than VFERS plus the cost of the product. Firms or products which charge VAT instead of VFERS may end up pricing high as VAT is under shifted. Firms may have to adjust their cost structure to ensure internal efficiencies to bring down prices and avoid attraction of substitute product.

6.1.4. Cost with VAT (17.5%) Lower than Optimal Value

The VFERS over shifting has the function $0.175(OVA) < 0.03(OVA + VAT_1)$ which implies over shifting of tax. In this case the policy objective is abused whereby the tax effect imposes more taxes and that the final cost to the consumer under VAT at 17.5% on output or current value added plus the intermediate cost is lower than the VFERS rate of 3% on the current value added plus the value added tax from the previous stage added to the gross or the prime cost

$$(0.175(OVA) + OVA) = 0.03(OVA + VAT_1) + (OVA + VAT_1) \text{ or}$$

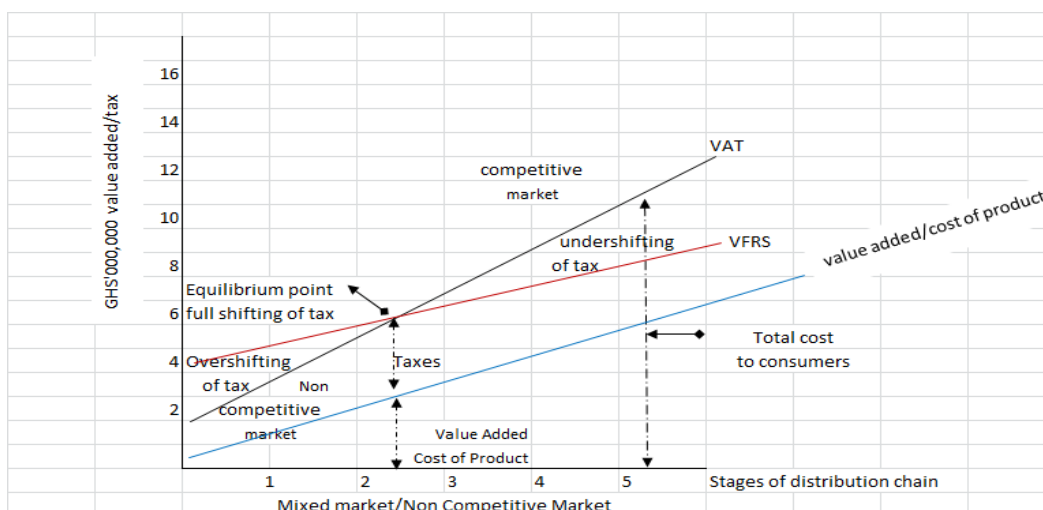
$$0.175(OVA) - 0.03(OVA + VAT_1) = \text{Negative value}$$



In the non competitive market there is over shifting VAT (ad valorem) by VFERS. The market is free for all and VFERS can be used to absorb abnormal profits to bring VAT and VFERS at equilibrium.

6.1.5. Mixed Reaction Effect of VFERS in Mixed Market

There is the possibility of having the three effects in a given economic market depending on the strength of the forces of demand and supply or the invisible hand controlling and directing the market participants and their economic leaning and stakes. Tax optimality, under shifting and over shifting are operational in such a situation.



In a mixed market the effect of VFRS is mixed depending on the slope of value added. In the case where actual value added exceeds optimum/equilibrium value added output VAT will be higher and tax at VAT 17.5% is higher than VFRS at 3%. If VFRS is less than VAT there is under shifting of tax in competitive market. In a mixed market where actual value added is below the optimum value cost to consumer is higher under VFRS an over shifting of VAT in the non competitive market. Where the actual value is lower than the optimum level cost to the consumer is lower under VFRS and under shifting of tax in the competitive market.

The VFRS optimization function of $0.175(OVA) = 0.03(OVA + VAT_1)$ which implies full shifting of tax is marked at the equilibrium point where the VAT line crosses the VFRS line. In this case the policy objective is achieved where the tax effect ensures that the final cost to the consumer under VAT at 17.5% on output or current value added plus the intermediate or conversion cost is equal to VFRS rate of 3% on the current value added plus the value added tax from the previous stage added to the gross or the prime cost;

$$(0.175(OVA)+OVA) = 0.03(OVA + VAT_1) + (OVA + VAT_1) \text{ or}$$

$$0.175(OVA) - 0.03(OVA + VAT_1) = 0$$

The VFRS under shifting function of $0.175(OVA) > 0.03(OVA + VAT_1)$ which implies under shifting of tax is marked as the area above the equilibrium point. This area is lying between the VAT line and VFRS line. The VAT line lies above the VFRS line. In this case the policy objective is achieved where the tax effect ensures that the final cost to the consumer under VAT at 17.5% on output or current value added plus the intermediate or conversion cost is greater than VFRS rate of 3% on the current value added plus the value added tax from the previous stage added to the gross or the prime cost;

$$(0.175(OVA)+OVA) = 0.03(OVA + VAT_1) + (OVA + VAT_1) \text{ or}$$

$$0.175(OVA) - 0.03(OVA + VAT_1) = \text{Positive value}$$

The VFRS over shifting function of $0.175(OVA) < 0.03(OVA + VAT_1)$ implies over shifting of tax. This position is marked as the area below the equilibrium point. This area is lying between the VAT line and VFRS line. The VAT line lies below the VFRS line. In this case the policy objective is abused whereby the tax imposes more taxes and that the final cost to the consumer under VAT at 17.5% on output or current value added (total of intermediate (conversion) cost, profit and other expenses) plus the intermediate or conversion cost is lower than the VFRS rate of 3% on the current value added plus the value added tax from the previous stage added to the gross or the prime cost $(0.175(OVA)+OVA) = 0.03(OVA + VAT_1) + (OVA + VAT_1)$ or $0.175(OVA) - 0.03(OVA + VAT_1) = \text{Negative value}$

7. CONCLUSION

We have considered two situations of VAT and VFRS their effect or impact at the market place;

the relationship between the ad valorem tax at 17.5% and the VFRS of 3% for tax optimality; how the market structure can influence the price of products and Government position and policy direction.

Relationship between VAT of 17.5% and VFRS of 3% has been established as ad valorem tax and specific tax respectively. VAT of 17.5% qualifies for input tax credit and is not tax on tax or inflationary. VFRS charges 3% on cost (value added) of the product plus input VAT. This does not qualify VFRS for input VAT credit and makes it more specific. It is charged at the last stage of consumption. It is also not inflationary or cascading. The effect of VFRS 3% charged alongside VAT 17.5% and their implications are mixed. Factors or variables that underpin this uncertainty include; market structure, cost structure, slope or gradient of flow of value added and stage of distribution. However when these factors are dealt with and narrowed down it ensures tax optimality and efficiency. In a competitive market cost to the consumer is perched at the total of VFRS plus cost/value added of the product ensuring under shifting of tax emanating from higher charge of VAT plus cost of the product. This can lead to welfare of consumers as addressed by Gaarder (2016), Cremer and Thisse (1994) a small uniform tax is always welfare-improving over the no-tax equilibrium.

In non competitive market VFRS price will exceed VAT of 17.5% over shifting the ad valorem tax to make the product expensive. This may encourage substitution and firms have to adjust their cost structure for internal efficiencies to prevail and not be kicked out of the market. In case of value added moving in opposing direction, (decreasing or increasing) the effect depends on the calculated standard or optimum value added compared to the actual value added.

In situations where actual value added is higher than the optimum level value and VFRS tax is lower than VAT, it is an under shifting of tax in competitive market. When actual value added is lower than the optimum value added, VFRS is higher and there is over shifting of tax in the non competitive market. The under and over shifting caused by the relationship between VAT and VFRS confirms the observation made by Delipalla and O' Donnel (1998) under imperfect competition that there are both price and profit effects. With prices above marginal cost $[0.175(OVA) = 0.03(OVA + VAT_1)]$, an increase in cost due to a change in taxation need not be reflected in same amount in increase in price. Over shifting occurs when price rises by more than the amount of the tax and under shifting when it rises by less (Seade, 1985; Stern, 1987; Delipalla and O' Donnel, 1998).

8. IMPLICATIONS AND RECOMMENDATIONS

In industries producing or trading in consumables and perishable goods may see large numbers of people involved in the distribution channel especially at the last stage.

Such persons have little value added and margins. In most cases estimating the true value added is a problem to the trader either the calculation may be complex, a trade practice or economically not feasible to measure the value added and charge VAT. Such simple and consumable items demands small amount of capital to be in business and can pass through many hands or stages. It is difficult to control prices or the goods involved and traders have no choice but accept price in some cases as dictated by the consumer. It is suggested that such businesses or persons should be excluded from charging VAT but it is good to charge VFRS.

When actual value is higher than the optimum value prices under VFRS is lower than VAT. This may happen in noncompetitive markets where businesses control the market and can charge arbitrary and discretionary strategically to ward off new entrants. The cost of doing business may be too high as value added for imports, manufacturing or in wholesale cost to the retailer higher than normal. Multinationals and group of companies with associate relationship may use such abnormal valuations in a tax avoidance scheme where the parent or principal entity is controlling the agent to the advantage of the parent or principal entity. Charging VFRS will compel such businesses to absorb part of the tax with their abnormal profit

VFRS may be necessary in managing the economic pressures as a deliberate attempt to check abuse and inflationary effect occasioned by arbitrariness in pricing and over valuation of the business operations. These may contribute to market failure and policy initiative through VFRS can the check abuse for tax optimality, equity and efficient revenue mobilization.

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