

Distributional Effects of Ghana's Value Added Tax Regime

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Distributional Effects of Ghana's Value Added Tax Regime

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Abstract

This paper examines two distributional aspects of Ghana's Value Added Tax: the distribution of burden and benefits from VAT exemptions across different households, and the changes in prices of consumer goods across different consumption expenditure items. The results show that the VAT regime has evolved from being progressive to regressive. Strikingly, poor households have increased their expenditure on telecommunication, transport, housing and utilities despite the increase in prices. In terms of policy, the study concludes that the current exemptions are not well targeted considering the shifts in expenditure components over time. The government may either abolish them completely or shift the emphasis to reflect the consumption dynamics.

Keywords: Fiscal policy, Value added tax, Tax burden, Distributive justice, Incidence

JEL Classifications: D30, H22, H23, H25, H31

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Executive Summary

The Context: Equity aspects of fiscal policies have emerged as global concerns. The 4th target of SDG 10 enjoins nations to adopt policies, especially fiscal, wage and social protection policies that promote greater equality. Value-added tax (VAT) is a key component of Ghana's fiscal reform and has become an indispensable revenue mobilisation tool for the country. However, the tax has been faced with a number of public agitations since its first introduction in 1995. The concerns are premised on the long held notion that the tax is regressive and at the same time increases consumer prices. Together, these two concerns imply that the tax, not only exacerbate the cost of living but also imposes higher burden on individuals, especially the poor. In response to this concern, governments of Ghana have over the years differentiated goods and services believed to take up a greater proportion of the consumption expenditure of poor households as exempted and zero-rated. Although the desire to leverage the poor against the burden of VAT is laudable, it is not clear the extent to which Ghana's VAT is regressive/progressive. There is also concern as to whether the exemptions and reduced rates granted are well targeted in terms of the distribution of benefits across households.

The problem: Unfortunately, from both theory and empirics, opinions are divided regarding the incidence of consumption taxes and fiscal exemption policies. On one side, it is argued that to ensure equity, it reasonable to impose a relatively lower tax rate on goods consumed relatively more by poorer households. Critics, on the other hand, argue that differentiated consumption tax rates alter consumption choices and thus fail to absorb an equal share of consumption expenditure of tax payers.

While acknowledging the inconclusiveness of the literature, minimal research attention has been paid to the issue of the distribution of VAT burden and benefits from exemption among households in Ghana. Studies on Ghana's VAT so far have focused on its revenue buoyancy, taxable capacity and efforts and why VAT failed at its first introduction. This paper examines and describes two distributional aspects of VAT in Ghana. Specifically, it estimates how much consumer prices change across different household expenditure groups for the various episodes of VAT rates. It also examines the distribution of VAT burden and benefits from exemptions across different categories of households in Ghana.

Background: Given the large weight of VAT in Ghana's revenue mobilization effort, understanding its effects on prices and the distribution of the burden and benefits

from exemptions among households is critical to ascertain the potency of the tax regime in achieving the government redistributive goal, which is in line with Goal 10 of the Sustainable Development Goals (SDGs). Thus, understanding the distributional aspects of VAT has important equity implications because it can inform the design of pro-poor tax policies. Finally, there is a bill currently before Parliament seeking to abolish most of the exemptions under Ghana's tax regime. This study, therefore, contributes to this ongoing national debate.

The analyses are based on two sets of data. The first set comprises data from the last four waves (Rounds 4, 5, 6 and 7) of the Ghana Living Standards Surveys (GLSS). The GLSS is a nationally representative household data with detailed information on household consumption expenditure and other demographic characteristics, covering the periods April 1998 to March 1999, September 2005 to September 2006, October 2012 to October 2013 and October 2016 to October 2017. The second set of data is the input-output data for selected years in Ghana. This data is used to examine the changes in the consumer prices of the various household consumption basket. In this study, the various VAT rates are applied to primary inputs of the corresponding national input-output tables. Since the study focuses on four episodes of VAT (1998, 2000, 2004 and 2015), input-output tables for four (4) selected years that closely correspond to the various VAT episodes are used. Specifically, the 1999 input-output table (IOT) is used to simulate the price effects of the 1998 episode of VAT (rate was 10%). The 2001 IOT is used for the May 2000 episode (12.5%), the 2005 IOT for September 2004 episode (15%) and finally, the 2015 IOT for the January 2015 episode of VAT rate increase (17.5%).

Research Results: We find that each episode of VAT rate increase leads to an increase in prices of all consumer goods and services. However, the magnitude of the change varies among the goods. Particularly, the increase in the prices is found to be generally higher for post and telecommunications, utilities (electricity, gas and water), hotel and restaurants and transportation. Although expenditure on food and non-alcoholic beverages takes the greatest proportion of total expenditure of both the rich and the poor, the latter pays more relative to the former.

In terms of incidence, the results show that different VAT episodes give different distributions of burden and benefits from exemptions. Specifically, we find that the VAT regime has evolved from being progressive to regressive. The 10% and 15% VAT rates are found to be progressive, implying that VAT burden increases with household wellbeing, suggesting that rich households (relative to the poor) bear greater proportion of the VAT burden. Contrary to expectations, increasing the rate to 17.5% rather makes the VAT strongly regressive, implying that the poor are hit harder relative to the rich. Regarding the benefits from exemptions, we find that the poor (richer) households are worse (better) off in that they enjoy less (more) benefits from the exemptions provided to cushion them.

The change in the distribution of is driven strongly by dynamics in the components of household consumption expenditure, particularly, that of the poor. Strikingly, poor households have moved towards more expensive goods such as telecommunication and transport, and housing and utility despite the greater increase in their prices. The

picture that emerges from these findings is that poor households bear the brunt of the tax system in their attempt to improve their welfare.

Implications for Policy Makers: Two major conclusions emanate from the paper. The first is that the current VAT regime favours the rich more than the poor, as the latter still suffers from a high VAT burden but enjoys less of the benefit from exemptions. The reason is that the expenditure components of the poor households have changed over time, thus making exemptions generally ineffective. The second is that the increase in consumer prices are higher for items that are emerging to attract substantial proportion of poor households' expenditure. It is, therefore, important for policy makers to review existing exemption regimes provided under the VAT. Perhaps, a more appropriate and well targeted policy could be to abolish all exemptions but strengthen safety nets for the poor. If, for any good reasons, the government still finds the need for exemptions leveraging the poor against the negative impact of VAT, then it is critical to consider housing, utilities, telecommunication and transport for poor households as these are now taking high poor households expenditure.

1. Introduction

Globally, Value Added Tax (VAT) has become an important fiscal tool to improve efficiency of tax system to boost tax revenue. However, Ghana's first attempt to introduce VAT led to what has been described as the "worst street demonstration in recent memory, comparable in terms of the number of fatalities to the 28 February 1948 riots which had triggered the development of mass nationalism" (Osei, 2000). On 11th May 1995, hundreds of people demonstrated in the streets of Accra (Ghana's capital) to protest the introduction of VAT. The demonstration turned violent and in the process four people were reported dead while several others sustained various degrees of injuries (Osei, 2000; Africa Confidential, 1995; IRB, 1996). The subsequent increases in the VAT rate (12.5% in May 2000, 15% in September 2004 and 17.5% in January 2015) have all been met with similar public agitations. For instance, on 1st July 2014, several young business executives and professionals, perhaps with some political undercurrents, disregarded heavy rain downpour to go to the main streets in the national capital to protest against the new 17.5% VAT rate (Kokutse, 2014).

The key complaints underlying all these agitations is that upward adjustments in VAT rate raise consumer prices (exacerbate the cost of living) and impose higher burden on individuals, especially the poor. In response to this concern, governments of Ghana have over the years differentiated goods and services believed to take up a greater proportion of the consumption expenditure of poor households as exempted and zero-rated. Although the desire to leverage the poor against the burden of VAT is laudable, it is not clear the extent to which Ghana's VAT is regressive/progressive. There is also concern as to whether the exemptions and reduced rates granted are well targeted towards their intended beneficiaries. This, if not addressed, could undermine the 4th target of the SDG 10, which enjoins nations to adopt policies, especially fiscal, wage and social protection policies that promote greater equality.

Unfortunately, theoretical opinions are divided regarding the extent to which differentiated tax rates ensure fairness. From an efficiency view point, proponents argue that higher taxes should be levied on goods with low own price elasticities and goods complementary to leisure (Ramsey, 1927; Corlett and Hague, 1953). Similarly, from an equity point of view, it reasonable to impose a relatively lower tax on goods consumed relatively more by poorer households. Opponents, on the other hand, hold that differentiated consumption tax rates introduce new ones by altering consumption choices and thus fail to absorb an equal share of consumption

expenditure of tax payers (Besely and Jewitt, 1995; Tait, 1988; Deaton and Stern, 1986; Atkinson and Stiglitz, 1976) and Kaplow, 2006). It is further argued that richer households tend to spend more on food and other 'necessities' in absolute terms, hence redistribution through exemptions is often not particularly well targeted (Mirrlees et al., 2011). Copenhagen Economics (2007) adds that given the difficulty of separating goods consumed by low-income from those by high-income households, reduced consumption tax rates, as part of differentiated tax rate regime, though might fulfil its purpose of relieving the poor, has greater tendency of benefiting the rich even more. From a political economy view point, reduced rates or many exemptions usually lead to an *exemption creep*, a situation in which one exemption gives rise to requests for another (Bodin et al., 2001). There is also the argument that properly designed uniform consumption tax (such as VAT) is Pareto superior to an income tax. It is said to be either more horizontally equitable (horizontally); that is redistributive (holding efficiency constant), or more efficient (holding distribution constant), or both (Atkinson and Stiglitz, 1976), largely because it is broad-based and covers the informal sectors (Bird and Gendron, 2007).

Another dimension of theory relates to the issue of consumer prices. The seminar work by Sah (1983) shows that in examining the welfare effects of indirect taxation (such as VAT in this study), it is important to emphasize how much relative prices are affected. Theory shows that raising indirect tax rate generally affects relative prices, although the magnitude depends on the type of goods and the nature of market competition (see for example Bird and Gendron, 2007; Weyl and Fabinger, 2013; Delipalla and Keen, 1992; Stern, 1987; and Anderson, Palma and Kreider, 2001). Relevant empirical studies on the effect of VAT on consumer prices include Carbonnier (2007) and Trannoy (2011) for France; Smart (2011) for Canada; Crossley, Low and Sleeman (2014) for the UK; Carare and Danninger (2008) for Germany; and Batista and Mattos (2011) for Brazil. Others are Poterba (1996) and Basley and Rosen (1999) for US; Vrijburg, Mellens and Dijkstra (2014) for the Netherlands; and Ikpe and Nteegah (2013) for Nigeria. In the context of VAT, Harris et al. (2017) note that increase in consumer prices may be more severe for exempted products. When firms sell exempt goods and services, they cannot reclaim the VAT paid on their inputs, hence they are compelled to self-supply their inputs as they are not required to pay VAT on such inputs. They may, however, produce the inputs less efficiently relative to other firms who specialise in producing them, but have to charge VAT on their sales. This production inefficiency eventually raises the input cost and may be passed on in higher output prices, which can also cascade through production chains, raising the prices of other goods or services even further.

While acknowledging the mixed evidence from both theoretical and empirical literature, minimal research attention has been paid to the issue of the distribution of VAT burden and benefits from exemption among households in Ghana. Studies on Ghana's VAT so far have focused on VAT revenue growth dynamics (Andoh, Osoro and Luvanda, 2019), taxable capacity and efforts (Andoh, 2017) and why VAT failed at its first introduction (Terkper, 1996).

The objective of this paper is to examine the distributional aspects of VAT in Ghana. Specifically, it estimates how much consumer prices change across different household expenditure groups for the various episodes of VAT rate. It also examines the distribution of VAT burden and benefits from exemptions across different categories of households in Ghana. Given that VAT has emerged as the kingpin of Ghana's revenue mobilisation effort, understanding its effects on prices and the distribution of the burden and benefits from exemptions among households is critical to ascertain the potency of the VAT regime in achieving the government redistributive goal, which is in line with Goal 10 of the Sustainable Development Goals (SDGs). Specifically, the 4th target of SDG 10 enjoins nations to adopt policies, especially fiscal, wage and social protection policies that promote greater equality. Thus, understanding the distributional aspects of VAT has important equity implications because it can inform the design of pro-poor tax policies. Finally, there is a bill currently before Parliament seeking to abolish most of the exemptions under Ghana's tax regime. This study, therefore, contributes to this ongoing national debate.

The main findings of the paper are as follows. First, consumer prices are found to have risen with each episode of VAT rate increase, albeit variations exist, with the increase generally higher for goods and services such as post and telecommunications, utilities (electricity, gas and water), hotel and restaurants and transportation. Second, VAT has evolved from progressive to regressive: poor (relative to rich) households currently bear a greater proportion of the VAT burden. Finally, the current exemption regime is found to mostly benefit the richer households, thus making it generally mis-targeted.

The rest of the paper is organized as follows. Section 2 discusses the methodology and data. This provides a brief description of the input-output approach, the computation of the tax burden and benefit from the exemptions, and how they are distributed across the various households. Section 3 presents the results and discussions, and finally section 4 provides the conclusions and policy implications.

2. Methodology and Data

The input-output simulation is employed to examine the effect of each episode of VAT rate increase on consumer prices. This approach has been used by a number of studies, including Cornwell and Creedy (1996), Labanderia and Labeaga (1999), Proops, Faber and Wagenhals (1993). Using the input-output tables is appropriate for this study because it allows both the direct and indirect effects of tax on consumer prices to be traced (Thomas, 2015; Newhouse and Zakharova, 2007). Indeed, VAT has both direct and indirect effects on consumer prices. As a consumption tax, VAT is borne directly by final consumers. Secondly, when goods and services are exempted from VAT, suppliers of such goods are not entitled to VAT refund. However, suppliers may have paid VAT on the inputs used in the production of the good. Under such circumstances, the suppliers may, as part of cost recovery plans, pass the VAT on to the final consumers in the form of higher prices. In this way, VAT indirectly increases consumer prices. The Leontief input-output specifications for the analysis of the changes in consumer prices as VAT rate increases is provided in equations (1) and (2).

$$P = (I - A')^{-1}V \quad (1)$$

$$\Delta P = (I - A')^{-1} \Delta V \quad (2)$$

where P is the price, I is an identity matrix, A is the matrix of the technical coefficients, A' is the transpose and V is the vector of primary inputs. Equation 1 shows that the price vector can be expressed in terms of the matrix of technical coefficient and the primary inputs. Equation (2) shows that changes in prices occur when there are changes in the primary inputs. Since prices are expressed in terms of primary inputs, a change in the primary inputs as a result of VAT may translate into price change. In this study, the various VAT rates are applied to primary inputs of the corresponding national input-output tables. Since the study focuses on four episodes of VAT (1998, 2000, 2004 and 2015), input-output tables for four (4) selected years that closely correspond to the various VAT episodes are used. Specifically, the 1999 input-output table (IOT) is used to simulate the price effects of the 1998 episode of VAT (rate was 10%). The 2001 IOT is used for the May 2000 episode (12.5%), the 2005

IOT for September 2004 episode (15%) and finally, the 2015 IOT for the January 2015 episode of VAT rate increase (17.5%). For detailed treatment on the use of national input-output tables to trace the effect (both direct and indirect) of the tax to the final consumer see Cornwell and Creedy (1996) for Australia; Proops, Faber and Wagenhals (1993) for Britain and Germany; Labanderia and Labeaga (1999) for Spain; Thomas (2015) for New Zealand; Newhouse and Zakharova (2007) for the Philippines; and Brashares, Speyer and Carlson (1988) for the USA.

To compute the distributional effects of the VAT, we assume that as a consumption tax, the VAT is passed forward to consumers. This is the standard assumption made in the literature (see for example Younger et al., 1999; Alderman and Ninno, 1999; Fourie and Owen, 1993; Davis and Kay, 1985). This implies that the VAT liability of each household can be calculated by multiplying the statutory VAT rate by the household consumption expenditure on non-exempt and non-zero-rated goods and services. The tax liability is then computed as a percentage of total expenditure of each households and the results compared across consumption deciles. The tax is regressive if poorer households (relative to higher income households) pay proportionally greater share of their total expenditures as VAT. It is progressive if the shares are proportionally greater for the higher income households and neutral if the tax shares are equal over all expenditure distribution (Jasen and Calitz, 2017). The benefits of the exemptions from VAT are calculated in a similar manner. The expenditure on the zero-rated and exempted items are multiplied by the corresponding VAT rate. This gives the amount of benefits enjoyed from the exemptions. This approach is based on the assumption that exemptions are a form of in-kind indexed transfers to consumers. The amount of money that should have been paid on exempted and zero-rated products become savings for the households.

The key virtue of this approach is that it gives an accurate first-order approximation of the incidence of final consumption taxes such as a VAT. As such, taxes are assumed to be borne directly by the final consumer (Thomas, 2015; Leahy, Lyons and Tol, 2011; Decoster et al., 2010; Ahmad and Stern, 1991; Pechman, 1985; Musgrave, Case and Leodard, 1974). Moreover, the technique has the ability to isolate the VAT liability, and the benefits from exemption for each household. This easily allows for a comparison among different households to ascertain whether or not the VAT regime is more favourable to the poor as expected. The technique also works under the assumption that the supply of consumption goods is perfectly elastic, as is the case with perfectly competitive markets and constant returns to scale in production (Caspersen and Metcalf, 1994).

Data

Two sets of data are used in this study. The first set is the Ghana Living Standards Surveys (GLSS). The GLSS is a nationally representative household data with detailed information on household consumption expenditure and other demographic characteristics. The last four waves of the survey (Rounds 4, 5, 6 and 7) are used (and

can be accessed from www.statsghana.gov.gh). The fourth wave of the GLSS, which covers the period April 1998 to March 1999, is used to examine the distributional effects of the 10% VAT rate, which was effective June 1998 to May 2000. The fifth wave of the GLSS (which covers the period September 2005 to September 2006) and the sixth wave (covering October 2012 to October 2013) are used to examine the 15% VAT rate (which was effective from September 2014). Finally, the seventh wave (October 2016 to October 2017) is used to examine the current 17.5% VAT rate. The 12.5% VAT rate is not applied to any consumption data because the rate was in operation from June 2000 to August 2004, during which time no living standard survey was embarked on. The goods and services covered in the GLSS are based on the 'Classification of Individual Consumption According to Purpose' (COICOP).

The second set of data used Ghana input-output data for selected years. The input-output tables are sourced from Eora multi-region IO database (World Mrio, 2018).

3. Results and Discussions

This section presents and discusses the results for the two main questions of the study. To provide an important context to the results, we first present households' consumption patterns (from Ghana Living Standards Surveys). In terms of distribution, the evidence shows that food and alcoholic beverages take the largest proportion of households' consumption expenditure. Table 1 and 2 show the mean annual per capita cash expenditure of the various households in Ghana in 2006 and 2014.

Table 1: Average annual per capita cash expenditure (% of total expenditure) GLSS 5 (2006)

Expenditure groups	Quintiles				
	1	2	3	4	5
Food and non-alcoholic beverage	37.2	37.5	37.9	36.4	29.1
Alcohol beverage and tobacco	7.5	6.5	6.6	6.3	5.7
Clothing and footwear	6.6	6.8	6.5	6.5	5.3
Housing and utility (water, gas, electricity)	7.2	7.9	8.2	9.1	8
Household goods, operations and services	6.8	5.9	5.6	4.8	3.7
Medical care and health expenses	4.6	4.4	4.4	4.3	3.3
Transport	6.7	7	6.4	7.8	17.5
Communication	1.6	2.9	2.7	3.3	4.9
Recreation and culture	4.7	3	3	2.9	5
Education	4.6	5.3	5.6	4.8	3
Restaurants and hotels	5.1	6.1	7	7.6	7.5
Miscellaneous goods and services	7.4	6.9	6.2	6.3	7.1
Total	100	100	100	100	100

Source: GLSS 5 Report, Ghana Statistical Service (2006)

Table 2: Average annual household per capita cash expenditure (% of total expenditure) - GLSS 6 (2014)

Expenditure groups	Quintiles				
	1	2	3	4	5
Food and non-alcoholic beverage	43.9	45.5	44.3	44.4	38.8

Alcohol beverage and tobacco	5.4	5	4.2	4.2	4
Clothing and footwear	8	6.9	6.5	5.9	5.5
Housing and utility (water, gas, electricity)	9.3	9.3	10.3	10.4	10.7
Household equipment and maintenance	4.9	4.3	3.9	3.7	3.2
Medical care and health expenses	2	1.9	1.6	1.6	1.4
Transport	5.2	5	5.3	5.6	7.9
Communication	4.7	4.1	4.5	4.8	5.1
Recreation and Culture	3.6	3.2	2.9	2.7	2.6
Education	8.9	9.4	10.2	11	11.2
Restaurants and hotels	0.3	1.1	1.8	0.9	3.3
Miscellaneous goods and services	3.8	4.2	4.5	4.9	6.3
Total	100	100	100	100	100

Source: Compiled by author based on GLSS 6 report, GSS 2015

Tables 1 and 2 show that not only did food and non-alcoholic beverages account for the highest expenditure of all households in Ghana, its proportion has increased between 2006 and 2014. For example, it took almost 40% and 29% of total expenditure of the poorest and richest households, respectively, in 2006. However, the value increased to about 44% and 38%, respectively, for the poorest and richest households in 2014. It is also revealing that the poor (relative to the rich) spend a greater proportion of expenditure on food, alcohol and tobacco, clothing and footwear, household maintenance, medical care, and recreation and culture. This is not so with the rich who report high expenditure (relative to poor households) on transport, utilities and gas, communication and restaurants and hotels.

VAT and Prices changes

Having given the general idea about the expenditure distribution, we first examine the price change for each episode of VAT rate. The results from the input-output simulations are provided in Table 3. The key limitation here is that the input-output tables do not cover all the expenditure components as found in Tables 1 and 2. Therefore, the broad expenditure classifications are reported.

Table 3: Price changes from VAT increases

Major Expenditure Categories	Changes in price			
	10% VAT	12.5% VAT	15% VAT	17.5% VAT
Food and beverages	0.153	0.153	0.178	0.205
Textiles and wearing apparel	0.137	0.147	0.167	0.194
Electricity, gas and water	0.200	0.258	0.401	0.491

Construction	0.161	0.200	0.226	0.248
Maintenance and repair	0.110	0.135	0.164	0.194
Hotels and restaurants	0.118	0.153	0.210	0.261
Transport	0.078	0.320	0.356	0.422
Post and telecommunications	0.181	0.234	0.271	0.311
Education, health and other services	0.140	0.162	0.187	0.211
Others	0.116	0.144	0.171	0.200

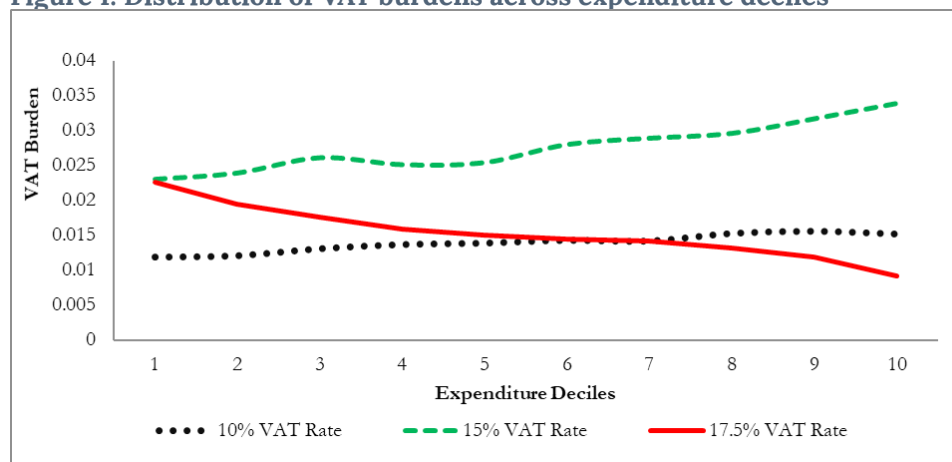
Source: Computed by author based on selected input-output tables for Ghana

As shown in Table 3, each episode of VAT rate led to an increase in prices of all consumer goods and services, albeit with variations. The general increase reflects the indirect effects of the taxes (Harris et al., 2017). For the 10% VAT rate, there is an increase in the price of post and telecommunications by 18.1%, and utilities (electricity, gas and water) by 20.0% compared to 15.3% for food and beverages sub-group and 13.7% for the textiles and clothing groups. Similar observations are found for the 15.0% and the 17.5% VAT rates. Specifically, for the 17.5%, the change in the price of transport and household utilities are 42.2% and 49.1%, respectively, compared to 20.5% and 19.4% for food and beverages and textiles and clothing, respectively.

How is the burden of VAT distributed across different households?

The results of the distribution of VAT burden for each of the three VAT rates are presented in Figure 1 (the detailed quantitative figures are presented in the Appendix Table 1). The dotted lines show the distribution for the 10% VAT rate (i.e. the 1998 episode of VAT rate). The broken line shows that of the 15% (i.e. the 2004 episode of VAT rate) and finally the smooth line shows the distribution of the burden for the 17.5% VAT rate.

Figure 1: Distribution of VAT burdens across expenditure deciles



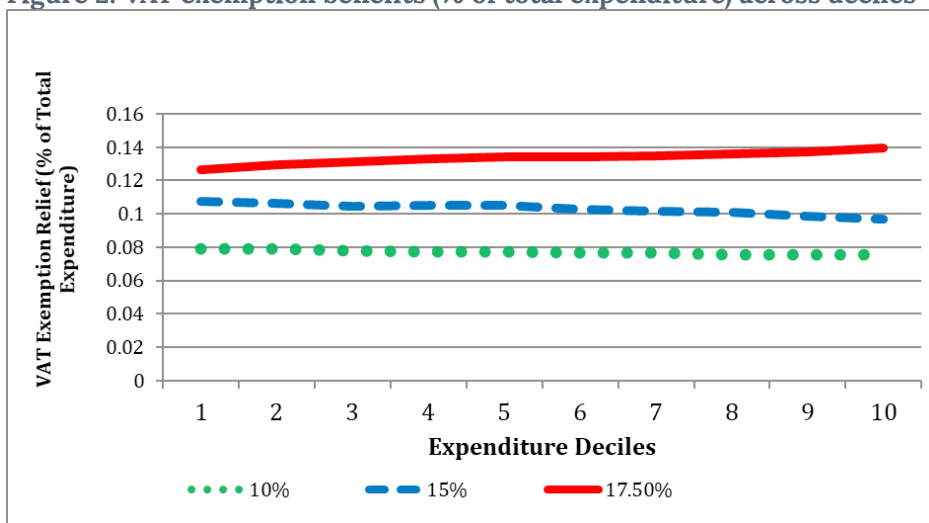
Source: Computed and constructed by author from the 4th, 5th and the 7th rounds of Ghana Living Standards Surveys

The results show variations in the distribution of the VAT burden across different VAT episodes and households. The distribution is progressive for both the 10% and 15% VAT rates (but more progressive for the 15%). Focusing on the 15%, the first expenditure decile (i.e. the poorest households) pays 2.3% of total expenditure as VAT. The figure increases to about 2.6% for the third decile, 2.9% for the seventh decile and 3.9% for the tenth decile. The progressiveness suggests that raising the standard VAT rate should result in a more redistributive pattern. However, on the contrary, increasing the rate to 17.5% rather makes the VAT strongly regressive, implying that the poor are hit harder relative to the rich. Specifically, the smooth red line in Figure 1 shows that about 2.3% of the expenditure of the lowest spending households goes into payment of VAT. This percentage, however, reduces to 1.45% for the sixth decile and further to 0.92% for the tenth decile (i.e. richest households).

VAT relief from exemptions

Being regressive is one side of the story, which may not constitute adequate grounds to “crucify” a tax regime. It may be possible for a group of households to bear a greater burden of a tax but at the same time enjoy the greatest share of the benefits from any exemptions. The effect may therefore be offset or even welfare improving depending on the magnitude of the exemptions. To ascertain this, we examine the relative distribution of the benefits obtained from VAT exemptions across the different VAT episodes and households. The results are shown in Figure 2. The diagrams show the proportion of total expenditure that would have been spent on the VAT exempt products if those products not exempted are computed for the 10%, 15% and 17.5%. Since the products are VAT exempt, it becomes a form of “VAT relief” or “VAT benefits” to the consumers.

Figure 2: VAT exemption benefits (% of total expenditure) across deciles



Source: Constructed by author based on GLSS 4,5 and 7

Under the 10% VAT rate, the benefits enjoyed from VAT exemption as a percentage of total consumption is somehow flat (neutral), hovering around 7.7%. The trends, however, become more regressive for the 15% VAT rate, suggesting that poorest households benefit slightly more than the richest. For example, the first decile gets about 10.7% of total expenditure as exempted, but this declines slightly to 10.5% of total expenditure for the fifth decile and further to 9.7% of total expenditure for the tenth decile.

On the contrary, the latest consumption expenditure (GLSS 7) data shows that the distribution of the benefits from VAT favours the richer households relative to poorer households. As shown by the smooth line in Figure 2, the first decile gains 12.63% of their total expenditure in the form of VAT exemptions. This increases to 13.47% for the seventh decile and to about 14.00% for the tenth decile. It therefore means that, until recently, the low spending households were better off in that they enjoy more benefits from the VAT exemptions compared to the high spending households, and at the same time they bear relatively lower VAT burden.

Discussion

The findings that prices of goods and services increase with the VAT rate in Ghana is consistent with Young and Bielinska-Kwapisz (2002), Delipalla and O'Donnell (2001), Delipalla and Keen (1992) and Besley (1989). All these studies found higher consumer share of indirect taxes, although they found consumer share of specific taxes to be higher than that of *ad valorem* taxes. The fact, however, remains that VAT rate increase is associated with higher consumer prices, although with different degrees. Specifically, the greater increase found in the prices of goods and services consumed by the rich for each episode of VAT increase is consistent with both reality and theory. In reality, most of the goods consumed by the rich are subject to VAT. Harris et al. (2017) show that in Ghana, more than half (i.e. 53.4%) of the rich household expenditure is on goods and services that are in principle subject to VAT. In terms of theory, under perfect competition, due to perfectly elastic demand, tax shifting tends to be lower compared to imperfect market (Katz and Rosen, 1985; Stern, 1987; Besley, 1989). In Ghana, the market for goods consumed by the rich households tends to be more imperfect compared to that of goods consumed by poor households. As shown earlier, the rich (relative to the poor) spend a higher proportion of expenditure on utilities and gas, communication and restaurants and hotels. On the contrary, as observed from the GLSS reports, food and non-alcoholic beverages account for the highest expenditure of poor households in Ghana. While this is typical of developing countries such as Ghana, it underscores the Engel's Law, which states that the poor spend a larger proportion of their income on consumption of food. Perhaps this forms a good basis for the exemptions provided under Ghana's VAT regime. Another observation from the trends in price changes is that although the differences in the VAT rate is 2.5%, the increase in the price is found to be greater over time. For example,

the price of textiles and apparel increased by 13.7%, 14.7%, 16.7% and 19.4% for the 10% VAT rate, 12.5%, 15.0% and 17.5% VAT rate, respectively. This reflects the non-uniformity in market reactions to tax policies in different times.

The observed progressive distribution for the 10% and 15% VAT are consistent with Poterba (1989; 1991); and Metcalf (1994a) who found consumption taxes to be less regressive. In the case of Ghana, this finding reflects the fact that during the time of the two surveys, a greater proportion of goods and services that make up a relatively larger portion of the consumption expenditure of poorer households were zero-rated and exempt under VAT. They were applied to many basic foodstuffs (if raw or simply prepared and domestically produced), health, education, domestic passenger transport, water, electricity, kerosene, petrol, diesel, pharmaceuticals, agricultural inputs, and textbooks. Moreover, during this period, it is documented that a greater proportion of the food expenditure of the poor came from either own production (usually cereals), which do not attract VAT, or are purchased unprocessed agriculture foods stuffs.

The legitimate policy relevant question arising from the findings is why does the increase in the VAT rate from 15.0% to 17.5% reverses the progressive distribution of the VAT burden to a regressive one? These regressive results challenge earlier studies (Decoster et al., 2010; Poterba, 1989; 1991) which found VAT to be progressive with respect to consumption expenditure. However, as shown by Kaiser and Spahn (1989), under first best welfare-optimal taxation, where resources are transferred to government without affecting the relative prices of goods and factors, taxation has only an income effect and no distortive substitution effect. In this case, raising taxes does not change consumption decisions. There is a more realistic world of “second-best” in general in which tax instruments are used to drive a wedge between producer and consumer prices or between consumer prices of different bundles of goods (with regard to consumption taxes). With relative prices biased, taxation will have distortive effects on rates of substitution, and hence on economic decisions.

We verify the two scenarios to ascertain which of them could have reversed the distribution. If the former is the case, then applying different VAT rates on the same household consumption expenditure dataset should give different distributions of VAT burden. However, if the latter is the case, then applying the same VAT rate on different rounds of consumption expenditure data should give different distribution patterns (otherwise the same pattern should be observed for all the different expenditure data). Once confirmed, it will be an indication that changes in consumption basket (through consumption substitution) rather than changes in the VAT rate are responsible for the reversal of the distribution from progressive to regressive. We verify the first scenario by applying both 15% and 17.5% (for the sake of simplicity) on the GLSS 5 and also on the GLSS 7. The results are presented in Figure 3 (A & B).

Figure 3A: Comparing burden of different VAT rates on 2005 consumption expenditure

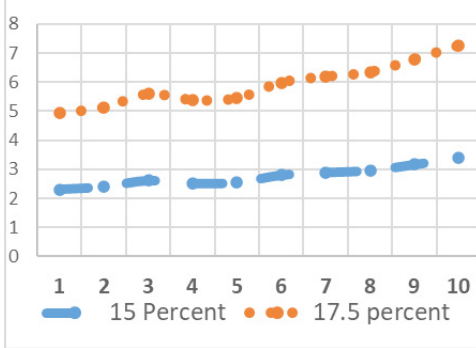
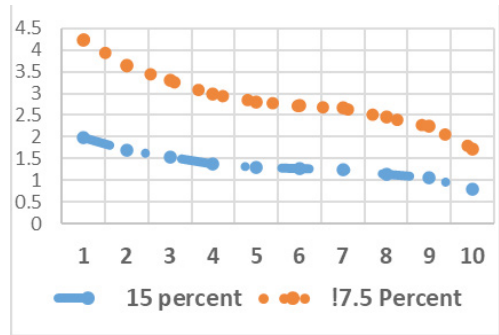


Figure 3B: Comparing burden of different VAT rates on 2017 consumption expenditure



Source: Author based on results generated from GLSS 5 and 7

Figure 3A shows the distribution of VAT burden when both 15% and 17.5% VAT rates are applied to the fifth wave of the GLSS while Figure 3B shows the distribution for the same set of rates for the consumption expenditure of the GLSS 7 (the most recent survey). Figure 3A shows that both VAT rates are progressive. Similarly, applying both rates on 2017 consumption expenditure data gives the same pattern of distribution for both rates. The results, thus, fail to uphold the proposition that reversal of the distribution of the VAT burden from progressive to regressive could be driven by substitution in consumption following increase in VAT rate from 15% to 17.5%.

We then go ahead to verify the second scenario. We apply the same 15% VAT rate (and also the 17.5% for robustness checks) on consumption expenditure data from different years. Again, for simplicity, we consider the three most recent household surveys (2005, 2013 and 2017). The findings are presented in Figures 4A and 4B. Figure 4A shows the distribution of VAT burden for the various years of consumption expenditure for 15% VAT rate while Figure 4B shows the distributions for the current 17.5%.

Fig 4A: Distribution of burden of 15.0% VAT rate on different years of consumption expenditures

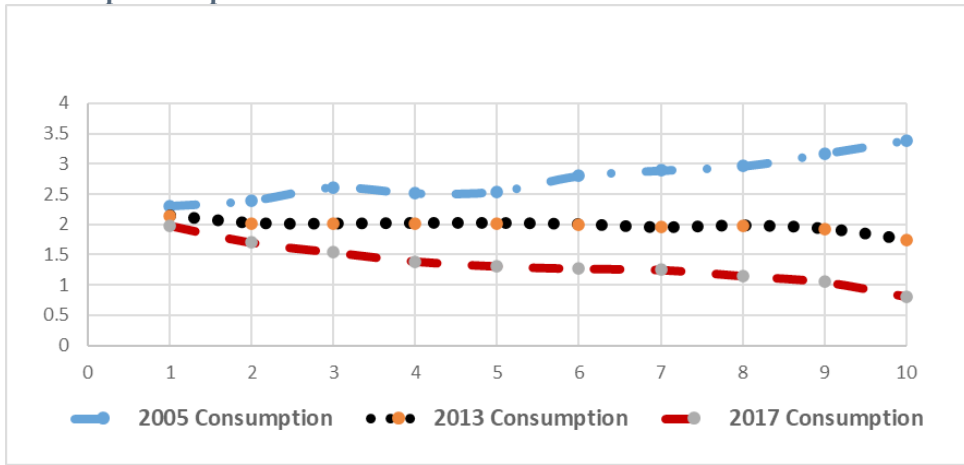
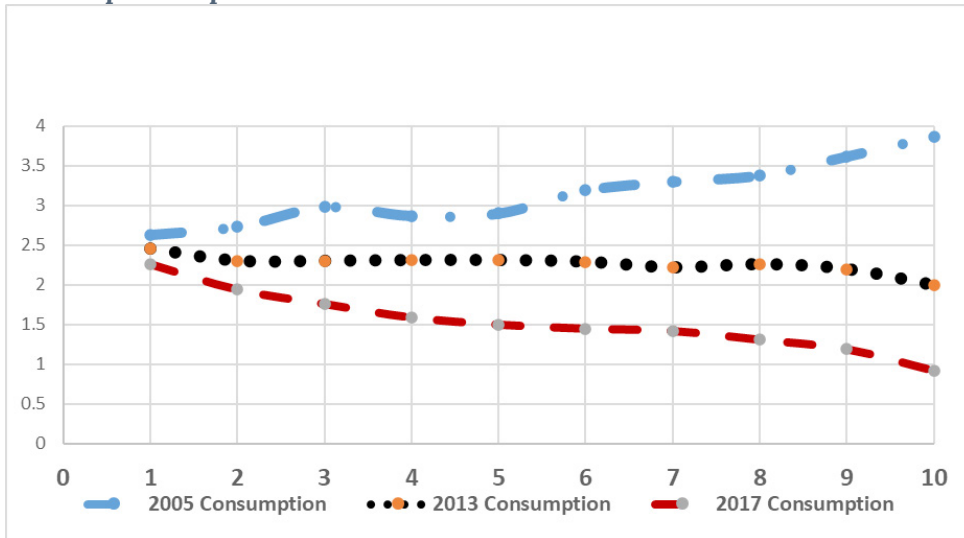


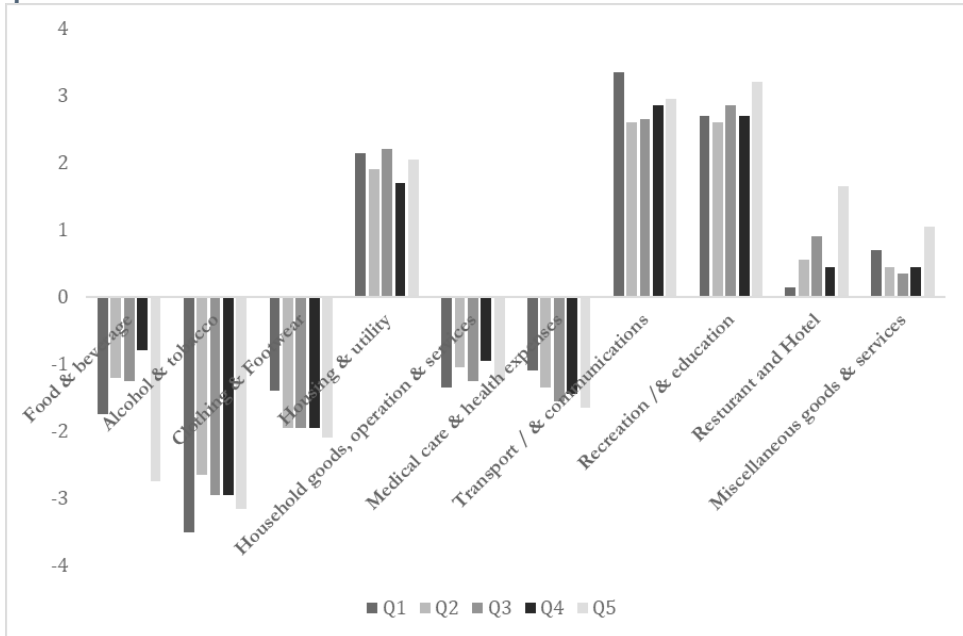
Fig 4B: Distribution of burden of 17.5% VAT rate on different years of consumption expenditure



Source: Author based on results obtained from GLSS rounds 5,6 and 7

Figures 4A and 4B show that maintaining the same VAT rate but changing the consumption expenditure data changes the distribution of the burden. Specifically, the VAT changes from being progressive to more regressive as consumption expenditure data changes from 2005 to 2017, thus underscoring the dynamics of the components of household consumption expenditure over time. To understand the nature of the dynamics, we further examine the growth in household consumption expenditure for the various consumption components between the 5th and the 7th waves of the living standard surveys. The results are shown in Figure 5. The bar graphs above the horizontal axis show a positive growth in household expenditure while those below show a reduction in the growth of consumption expenditure.

Figure 5: Growth rate in household expenditure by COICOP categories by quintile between 5th and 7th rounds of GLSS



Source: Constructed by author based on GLSS 5 and 7 data

Figure 5 shows that households in Ghana, over the period, are reducing the proportion of expenditure on food and beverages; alcohol and tobacco; and clothing and footwear while there is an increase in expenditure on housing and utility, transport and communication, recreation and education, and hotel and restaurants. The highest quintile, i.e. the richest household (Q5), experienced the largest reduction in expenditure on food and non-alcoholic beverages sub-category.

It is, however, striking to observe that the poorest households (Q1) saw the highest growth in expenditure on housing and utility and transport and communication. Although these goods are relatively expensive (their prices have increased more than others), these goods and services have become basic necessities of life. For example, a recent report on the Ghanaian mobile telecommunication sector reveals that the country is one of Africa’s largest mobile markets, with about 34.57 million subscribers (exceeding the country’s population of 29 million) and a penetration rate of 119% (Ghanaweb, 2018). This is the focus of SDG 9c; that by 2020, there should be significant increase in access to information and communications technology, and affordable internet in least developed countries. Again, there is an emphasis on access for all to adequate, safe and affordable housing and basic services (SDG 11.1), and safe, affordable, accessible and sustainable transport systems for all, through expanding public transport (SDG11.2). The findings, therefore, imply that poor people are accessing these services not only at higher prices but are also compelled to bear a greater tax burden. There could be other reasons why VAT has become regressive. In a typical developing economy, it is assumed that the poor purchase a larger proportion

of goods and services from the informal retail sector where the goods are either not taxed at all, or are more lightly taxed. In such situations, it is reasonable to believe that the tax burden of the poor will be smaller relative to the rich. However, with the high pace of urbanisation taking place in Ghana (; Naab et al., 2013), low income households may be compelled to purchase largely from retail outlets that are likely to fully comply with the tax rules. As a result, the share of consumption subject to VAT for lower income households may tend to be greater.

This regressivity in the exemptions in favour of the poor under the 10% and 15% VAT rates corresponds to the progressivity observed from the VAT burden. This could be attributed to the fact that, in 2004, when the rate was increased to 15%, the government saw the need to introduce several pro-poor exemptions. As such, the VAT exemption list was expanded to include many more goods and services, which took a relatively larger proportion of the consumption expenditure of poorer households. Other exemptions granted include the removal of VAT on irrigation pumps in line with the government's priority of modernizing agriculture and to increase international market share, particularly for non-traditional crops and rice, the zero-rating of industrial raw materials to leverage manufacturers against the upfront cash flow problems associated with the VAT component of large imports of industrial raw materials, and the removal of VAT on inputs for the production of fishing nets and fishing ropes to reduce the operation cost of fishermen (Republic of Ghana, 2004). All these pro-poor exemptions may have culminated in increasing the benefits under the 15% VAT rate.

While the consumption dynamics of household is a contributory factor, the situation can also be largely blamed on abuses in the exemptions regime. Ghana's statutes contain numerous exemption schemes. In 2012 alone, direct tax and VAT exemptions amounted to US\$ 876 million, representing approximately 67% of all exemptions (Republic of Ghana, 2012). What is worrying is that most of these exemptions are abused, thereby denying the targeted beneficiaries the benefits thereof. As explained by Gale and Harris (2010), granting of exemptions and zero-rating is fundamentally ineffective since middle-income and wealthy taxpayers consume these exempted and zero-rated products more than low-income households do. Moreover, this practice generates complexity in administration, thereby providing incentives for tax avoidance as consumers substitute between zero-rated/exempt goods and fully taxable goods. Thus, under such conditions, it is reasonable to expect the bottom deciles to benefit less directly from exemptions (Harris et al., 2017).

4. Conclusions and Policy Implications

In this paper, we have found that each episode of VAT rate increase led to an increase in prices of all consumer goods and services, albeit with variations. Increase in the prices was generally higher for goods and services such as post and telecommunications, utilities (electricity, gas and water), hotel and restaurants and transportation. Although expenditure on food and non-alcoholic beverages takes the greatest proportion of total expenditure of both the rich and the poor, the latter pays more relative to the former.

Another important conclusion from the study is that the VAT regime has evolved from being progressive to regressive. This is driven strongly by dynamics in the components of household consumption expenditure, especially the poor. Strikingly, poor households moved towards more expensive goods such as telecommunication and transport, and housing and utility despite the greater increase in their prices. The picture that emerges from these findings is that poor households bear the brunt of the tax system in their attempt to improve their welfare. Finally, the study shows that the poor (richer) households are worse (better) off in that they face higher (smaller) tax burden but at the same time enjoy less (more) benefits from the VAT exemptions. This development undermines the principle of equity and therefore the SDG 10, which calls for reduction in inequalities.

The key policy implication of the findings, therefore, is that the current exemptions are not well targeted, considering the shifts in expenditure components over time. The poor still suffer from a high VAT burden and benefit less from exemptions. It is, therefore, important for policy makers to review existing pro-poor exemption regimes, particularly those provided under the VAT. Perhaps, a more appropriate and well targeted policy could be to abolish all exemptions but strengthen safety nets for the poor. If, for any good reasons, the government still finds the need for exemptions leveraging the poor against the negative impact of VAT, then it is critical to incorporate current dynamics in household consumption pattern which points to housing, utilities, telecommunication and transport. Otherwise, such pro-poor responses have the risk of not achieving their goal.

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Appendix

Classification of exempt supplies under Ghana's VAT act 870

1. Agricultural Food Items in the Raw State and Selected Live Animals
 - All live animals, animal products in raw state.
 - Agricultural and aquatic food products in the raw state produced in Ghana: these include: maize, sorghum, millet, tubers, guinea corn, rice, fish, (other than ornamental fish), crustaceans, molluscs, vegetables and fruits, nuts, coffee, cocoa, shea butter; and edible meat and offal of the animals provided that the processing is restricted to salting, smoking or similar processes, but excluding pate, fatty livers of geese and ducks, and similar products.
 - Some live animals bred or raised in Ghana: cattle, sheep, goat, swine, and poultry.
 - Salt for human consumption, including table salt.
2. **Selected Agricultural Inputs**
 - Agricultural chemicals, feed and feed ingredients: fertilizers, acaricides, insecticides, fungicides, nematicides, herbicides, growth regulators, pesticides, veterinary drugs and vaccines, feed and feed ingredients other than food, drugs and vaccines for domesticated animals generally held as pets.
 - Seeds and seedlings: seeds, bulbs, rooting, and other forms of propagation of edible fruits, nuts, cereal crops, tubers and vegetables, including the seedlings and cuttings.
 - Fishing equipment: gear designed exclusively for fishing, including boats, nets, floats, twines, and hooks, raw material for use in the production of nets and twines and goods produced for fishing.
3. **Educational Inputs and Services**
 - **Educational inputs:** textbooks and supplementary readers on the Ministry of Education approved list, newspapers, atlases, charts, maps and music (does not apply to imported newspapers, architectural and similar plans, and drawings, scientific and technical works, periodicals, magazines, trade

catalogues, price lists, greeting cards, almanacs, calendars, diaries and stationery).

- **Education services:** services supplied to students as part of the education programme provided by any one of the following establishments that is duly registered or licensed by the Minister for Education: (a) a day care, including adult day care, provider; (b) a pre-primary, primary, or secondary school; (c) a technical college, community college or university; (d) an educational institution established for the promotion of adult education, vocational training or technical education; or (e) an institution established for the education or training of physically or mentally challenged persons.

4. **Medical Services and Supply**

- . Medical supplies: means equipment and accessories for the supply of medical services as determined by the Minister responsible for health.
- . Medical services: supply of a medical, dental, nursing, midwifery or paramedical service where the service is performed by or under the supervision and control of a person who is registered as being qualified to perform that service by the Minister for Health, other than spa, gymnasium and similar services.
- . Locally produced pharmaceuticals.
- . Mosquito nets, whether or not impregnated with chemicals.

5. **Transportation**

Domestic transportation of passengers by road, rail, water, but not including the supply of haulage or the rental or hiring of passenger and other vehicles.

6. **Utilities**

Water (excluding bottled and packaged water), domestic use of electricity.

7. **Housing, Land, Construction Services**

- . (a) Immovable property, including land, attributable to a dwelling, but excluding the sale of immovable property by an estate developer; (b) land used or to be used for agricultural purposes; and (c) civil engineering public works, including roads and bridges.
- . Accommodation in a dwelling: any building, premises, structure or any place or any part of these which is not a commercial rental establishment and which is used predominantly as a place of residence or abode of a natural person or which is intended for use as a place of residence or abode of a natural person, together with any appurtenances belonging to the place and enjoyed with the place.

8. **Accommodation**

- . accommodation in a hotel, motel, inn, boarding house, guest house, hostel or similar establishment in which lodging is regularly or normally provided to five or more persons on a daily, weekly, monthly, or other periodic charge;

- (b) accommodation in a house, flat, apartment, or room: (i) which is regularly or systematically leased or held for lease as residential accommodation for continuous periods of not more than forty-five days in the case of each occupant of the house, flat, apartment or room; or (ii) which is leased with utilities and furnishings provided by the lessor;
 - (c) accommodation in a house, flat, apartment, room, caravan, houseboat, tent or caravan or camping site which constitutes an asset, including a leased asset of a business undertaking or a separately identifiable part of a business undertaking carried on by a person who: (i) leases or holds for leasing as residential accommodation, a house, flat, apartment, room, caravan, houseboat, caravan or camping site in the course of the business undertaking; and (ii) regularly or normally leases or holds for lease as residential accommodation, the house, flat, apartment, room, caravan, houseboat, caravan or camping site for continuous periods of not more than forty-five days in the case of each occupant; or
 - (d) any other accommodation designated by the Minister by Regulations to be a commercial rental establishment other than the accommodation specified under (e), (f) and (g).
 - (e) accommodation in a boarding establishment or hostel operated by any employer solely or mainly for the benefit of the employees of that employer or of a related person of that employer or their dependents, if the establishment or hostel is not operated for the purpose of making profits from the establishment or hostel for the employer or a person related to the employer;
 - (f) accommodation in a boarding establishment or hostel operated by a local authority or an educational establishment approved by the Minister for Education otherwise than for the purpose of making profits from the establishment or hostel; or
 - (g) accommodation in a registered hospital, maternity home, nursing home, or clinic.
 - Dwelling: any building, premises, structure or any place or any part of these which is not a commercial rental establishment and which is used predominantly as a place of residence or abode of a natural person, or which is intended for use as a place of residence or abode of a natural person, together with any appurtenances belonging to the place and enjoyed with the place.
- 9. Financial services:** financial services, excluding financial services rendered for a fee, commission, or a similar charge; and (c) life insurance and reinsurance, whether or not rendered for a fee, commission or a similar charge.
- 10. Petroleum products:** crude oil and hydrocarbon products: (a) petrol; (b) diesel; (c) liquefied petroleum gas; (d) natural petroleum gas; and (e) kerosene.

- 11. Machinery, appliances and parts:** machinery and parts of machinery specifically designed for use in the following activities: (a) agriculture, **veterinary practice**, fishing and horticulture; (b) mining as specified in the mining list; (c) manufacturing; (d) railway and tramway; (e) upstream petroleum operations as specified in the petroleum list; and (f) dredging.
- 12. Crude oil and hydrocarbon products:** petrol, diesel, liquefied petroleum gas, natural petroleum gas, and kerosene.
- 13. Zero-Rating**
- Exports
 - Goods shipped as stores
- 14. Institutional Reliefs**
- President
 - Diplomatic Missions (imports)
 - Technical Assistance Schemes with Agreements
 - Emergency relief

Source: www.gra.gov.gh

Table A1: VAT burden and benefits from exemption (% of household total expenditure)

Expenditure Deciles	10% VAT Rate		15% VAT Rate		17.5% VAT Rate	
	Burden	Exemption Benefits	Burden	Exemption Benefits	Burden	Exemption Benefits
1	1.19	7.90	2.30	10.74	2.26	12.63
2	1.21	7.88	2.39	10.65	1.94	12.95
3	1.31	7.78	2.61	10.43	1.76	13.14
4	1.37	7.72	2.51	10.53	1.59	13.30
5	1.39	7.70	2.54	10.50	1.50	13.40
6	1.43	7.66	2.80	10.25	1.45	13.44
7	1.42	7.68	2.89	10.15	1.42	13.47
8	1.53	7.56	2.96	10.08	1.31	13.58
9	1.56	7.53	3.17	9.87	1.19	13.70
10	1.52	7.57	3.39	9.66	0.92	13.97

Source: Computed by authors based on Ghana Living Standard Surveys 4, 5 and 7



Mission

To strengthen local capacity for conducting independent, rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.

The mission rests on two basic premises: that development is more likely to occur where there is sustained sound management of the economy, and that such management is more likely to happen where there is an active, well-informed group of locally based professional economists to conduct policy-relevant research.

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