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PROGRESSIVITY OR REGRESSIVITY IN UGANDA'S TAX SYSTEM: Implications for the Fy2014/15 Tax Proposals

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ABSTRACT

The paper provides insights on the tax-benefit implications of the FY2014/15 tax proposals as well as the 2012/13 income tax reform. While the income tax reform enhanced the progressivity of pay-as-you-earn (PAYE), it resulted in significant loss of government revenue by nearly 0.2 percent of GDP. Interesting findings do emerge with the non-income tax. The study findings reveal that, Uganda's tax system comprises of a mixture of progressive (e.g. on fuel, pasteurised milk) and regressive taxes (e.g. on salt, piped water, kerosene). In terms of horizontal equity, the degree of progressivity varies across gender and geography. Notwithstanding these findings, the entire tax system becomes less progressive with the 2014/15 tax proposals but the negative impact is offset by the progressivity in public spending on health and primary education. As such focusing on progressivity or lack of it at individual item level could be misleading, calling for examining the tax system in its entirety. The paper calls for more evidence-based tax policy processes to minimise government's reversal of its proposed tax measures.

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1. INTRODUCTION

Uganda has maintained positive macroeconomic growth during the past 15 years albeit with a stagnation in the tax revenues. During 2002/3-2013/14 period, Uganda's gross domestic product (GDP) growth averaged 6 percent per annum driven by the surge in the services sectornotably telecommunication and financial services (Ministry of Finance, Planning and Economic Development (MoFPED 2014a). On the other hand, the country's tax to GDP ratio has stagnated between 12-13 percent since 2004/5 while government expenditure1 decreased from 19.4 percent in 2009/10 to 18.8 percent in 2012/13 of GDP. Indeed, Uganda compares poorly to its regional neighbours with regard to domestic tax revenue mobilization-for instance, the corresponding tax realization rates for Kenya, and Tanzania were 19 and 16 percent of GDP respectively in 2013 (World Bank 2014a). Important to note is the weak positive correlation between per capita GDP and tax to GDP ratio, a stronger correlation is observed between per capita GDP and the ratio of domestic indirect taxes to GDP.

Increase in domestic resource mobilisation is critical if Uganda is to reduce its reliance on aid to drive its development as articulated in its Vision 2040². Aid as a source of development financing is not reliable, especially as the traditional development partners continue to deal with the aftermath of the global financial crises (AfDB 2014). Uganda's reliance on aid to finance government budget has reduced – from 32.4 percent in 2009/10 to 28.7 percent in 2012/13 and estimated at 28.5 percent in 2014/15. However, this has to be interpreted with caution given the recent public finance mismanagement (including the misappropriation of public funds scandals in the Office of the Prime Minister) and the passing of a legislation which allegedly violates human right – which led to withdraw of funding by some development partners. In this case, domestic resource mobilisation is less volatile and more sustainable than aid; it promotes local ownership of development programs and at times likely to help in strengthening the local fiscal institutions (AfDB 2010).

With the dwindling budget support from the traditional development partners and failure to broaden the tax base, government has opted for concessional loans from the non-traditional donors (such as China). According to the Minister of Finance, Planning and Economic Development, these loans are earmarked for infrastructural development leaving the domestic tax revenue to fund other social programs such as Universal Primary Education (UPE) and health, among others. Despite all this, there are growing concerns on Uganda's growing public debt and its implications on the fiscal space. The ratio of external borrowing (excluding grants and oil) to GDP increased from 36.6 percent in 2009/10 to 51.2 percent in 2012/13 (MoFPED 2014a). As much as Uganda's debt remains within the recommended range (i.e. less than the 90 percent threshold stipulated by Reinhat and Rogoff 2010) there are already concerns from some MoFEPD's top officials (Observer December 3, 2014).

In the FY2014/15 national budget speech, government made several tax proposals/ measures towards increasing domestic tax revenuetofinancedevelopment.Specifically, the 2014/15 tax proposal targeted the

agricultural sector as well as products predominantly consumed by the poor (e.g. salt). However, a comparison of 2014/15 tax proposal to previous budget speeches reveals some level of policy inconsistences in the proposed tax regimes. This calls for a detailed analysis of the effectiveness of such proposals. Judging from the current debates on the proposed tax measures, there seem to be limited shared understanding of the government's overall fiscal objectives (income redistribution and/or increase in government tax revenue; expenditure priorities and efficiency/spending patterns). As such, the debates have focused mainly on the regressivity of the proposed tax proposals vis-à-vis MoFPED's emphasis on the progressivity of its public spending. While not guided by empirical evidence, MoFPED assert that the regressivity of tax would be offset by the progressivity of public spending – tax-benefit incidence.

Previous empirical studies on Uganda provided micro level insights on the incidence of the Uganda tax system. Most of these studies agree on the overall progressivity of Uganda's tax system, however, the same studies do point to the regressivity of some item-specific taxes (such as Ssewanyana & Okidi 2005; Sahn & Younger 2003). Yet, notable differences are observed in the measures of tax burden. Most studies have focused on the vertical equity of taxes (such as Ssewanyana 2008; Ssewanyana & Okidi 2005; Sahn & Younger 2003); and few on horizontal equity of taxes (Bategeka et al. 2008). While the focus on tax burden is common in past studies, there is a limited focus on tax-benefit incidence. Yet, bringing together the distributional impacts of taxes and public spending would have a stronger case to inform the design of future tax reforms as well as gaining public support for the proposed tax proposals.

Specifically, this paper focuses on domestic revenue mobilisation. While government embraced domestic has revenue mobilisation for development as articulated in its several national budget speeches, challenges still remain. Tax revenue to GDP remains low greatly attributed to limited success in broadening the tax base due to unchecked government tax expenditures³ (such as tax exemptions, tax incentives), pervasive corruption, limited attention to fiscal legitimacy⁴, growing informal sector as well as uncurbed tax evasion. Notwithstanding government efforts towards the strengthening of tax administration (through technological and infrastructural improvements, and fiscal education, among others), inefficiencies still remain.

It is against this background that this paper provides insights into the distributional impacts and implications for government tax revenue of the FY2014/15 tax proposals, as well as explores alternative domestic revenue raising options. Particularly, this paper seeks to provide insights on how government could broaden the tax base without decreasing the overall progressivity of the tax system. The paper focuses on the incidence of consumption taxes as well as personal income tax (PIT) based on the Uganda National Household Survey of 2012/13 (UNHS V). The paper also provides insights on the progressivity of the public expenditure via the benefit incidence analysis. In other words, the paper explores the tax-benefit analysis of the Ugandan tax system. The study findings are intended to inform the refinement or design of future tax reforms.

The rest of the paper is structured as follows: The next section presents the evolution of the Uganda tax system and its performance. Section 3 discusses the tax proposals/ measures as presented in the 2014/15 national budget speech. Data and methods employed to achieve the objectives of the paper are the subject of Section 4. Section 5 presents and discusses the results prior to conclusions in Section 6.

2. AN OVERVIEW OF THE UGANDA TAX SYSTEM

In a guest to improve economic performance, Uganda's tax system has undergone several reforms since 1980's (see Ssewanyana & Okidi 2005, AfBD 2010). The reforms have been driven by both internal and global factors. However, these reforms have contributed modestly towards Uganda's tax efforts. Consequently, government is yet to realise its Poverty Eradication Action Plan (PEAP) target set in 2004 to increase annually the tax to GDP ratio by 0.5 percent.⁵ This is largely explained by the structure of the Uganda's economy, which makes taxing difficult (see More 2013). The current ratio of tax to GDP of about 13 percent⁶ (MoFPED 2014a; see also Figure A 1) is well below the recommended threshold of 15 percent to ensure that the basic government functioning (Adam & Bevan 2004; IMF 2005). Further, Uganda's tax capacity/ potential is estimated at 19.5 percent (IMF 2009) translating into a tax effort⁷ of 66.1 percent in 2012/13.

The most significant recent reform targeting direct taxes in Uganda is yet to bear fruit. In particular, the GoU revised upward the

income tax thresholds in FY2012/13- from 4 to 5 income brackets at higher rates (MoFPED 2012). However, this reform has not increased the contribution of PAYE to overall tax revenue - the contribution remained at about 16 percent since 2010/11 (increased from 16.1 percent in 2010/11 to 16.7 percent in 2012/13) and the share of PAYE to GDP has remained around 2 percent since 2010/11. The plausible explanation lies around low creation of well-paying formal employment and growing informality of the labour marker. Furthermore, increasing the minimum tax threshold from UGX 130,000 to UGX 235,000 per month appears to have reduced considerably the population in taxable bracket and this was not compensated by the additional tax of 10 percent levied on individuals earning more than UGX 10 million per month. Yet, in absolute terms, PAYE taxes increased from UShs825bn to 1,196bn respectively. Looking back the share of PAYE in the total net tax collection shows an increasing but declining trend since 1990s. On average, the share increased by 5 percent in the 1990s compared to 13.8 percent in the 2000's. In the later period, the year-to-year changes have remained in the range of 17 to 23 (Figure 1).

Nearly 95 percent of government revenue is through tax revenue with notable evolution in the structure of tax. During the past 20 years, VAT has emerged as an important tax head. Indeed, after the mid-1990s, there is a remarkable shift in tax structures away from international trade taxes towards VAT (Figure A 1) – partly reflecting the process of trade liberalisation (see also Baunsgaard & Keen 2010). As such since 2009/10 the domestic taxes have overtaken trade taxes as a ratio to GDP. The trade





Source: Author's calculations based on Uganda Revenue Authority (URA) official statistics.

taxes are largely driven by VAT on imports followed by petroleum duties. The latter has proven to be a common tax, with no clear policy objectives/intentions. From the literature elsewhere, fuel taxation seem to have different intentions for developed and developing countries. For instance, most developed countries impose such taxes to mitigate carbon emissions, reduce congestions as well as improve local urban development (see Sterner 2011). In Uganda, what is clear is that fuel taxation is not an environmental tax or even one of the means to mitigate climate change. Instead, it is a means of mobilizing government revenue. On the other hand, since the beginning of the 2000s, taxes on international trade contributed about 51 percent of the net URA tax revenue - a percentage well above that of South Africa of less than 1 percent. However, the contribution of these taxes is likely to decline further with the increased abolition of tariffs as the integration of the East Africa Community (EAC) is fast-tracked. By implication, this would require the domestic revenue to increase so as to cover the would-be forgone trade taxes.

Figure A 1 shows that the domestic tax revenue to GDP ratio has followed an increasing trend over time, partly driven by the domestic direct taxes. This finding confirms government's growing reliance on domestic tax revenues. After the major tax reforms in 1994, it is evident that government increased its reliance on domestic indirect taxes as share of GDP, though the share started declining at the beginning of 2000. In 2012/13, the share of domestic taxes including PAYE in net revenue stood at about 17 percent, the domestic indirect taxes contributed nearly a quarter of the net revenue collection and two-fifth of the domestic revenue (Table 1). In other words, Uganda remains dependent on domestic indirect taxes with VAT contributing more than 75 percent. Contribution of excise duties in total domestic indirect taxes is on a decline. The year-to-year change in VAT were lowest in 2003/4, 2008/9 and 2010/11 - the changes were below 10 percentage points; whereas the lowest changes in

		A/
Type of tax	Amount UShs. Billion	% of total tax revenue
Indirect tax		
VAT	1,279.17	17.9
Excise duties	451.80	6.3
Direct taxes		
PAYE	1,196.00	16.7
Other direct taxes	1,237.50	17.3
International trade taxes		
Petroleum products	794.84	11.1
Other trade taxes	2,275.67	31.8
Total (net tax)	7,149.48	100.0

Table 1: Tax composition in 2012/13

Source: Author's calculations based on URA official statistics.

international taxes were in 2009/10 and 2012/13 (Figure 1). This is partly explained by tax exemptions/avoidance.

3. PROPOSED TAX PROPOSALS FY2014/15

The Uganda tax code contains a number of exemptions and the discretionary offer of tax exemptions to private companies that has affected Uganda's revenue mobilization efforts - resulting in growing tax expenditures⁸. In the past 10 years, each budget speech appears to provide new and expanded tax exemptions. For instance, in the FY2005/6, government made interest on agricultural loans tax exempt; subsequently in 2007/8, expenditures on loses and bad debts for agricultural loans were made tax deductible. Also, in 2006/7, Liquid Petrol Gas (LPG) was made VAT exempt. Furthermore, in 2009/10, the Minister of Finance, Planning and Economic Development abolished the 5 percent VAT rate applied on sale of houses and made house sales VAT exempt. In 2010/11, ICT equipment and related software were also exempted. Estimates by the AfDB showed that Uganda was losing

about 2 percent of GDP of potential tax revenues to exemptions (AfDB 2010). Based on the 2013/14 GDP of UShs 60.5 trillion, a 2 percent loss of potential revenue amounts to UShs 1,210 billion—the figure is more than Ministry of Health's budget of UShs 1,127 billion in 2013/14. As such, it is possible that without exemptions, Uganda's tax revenues could match the regional averages in East Africa and the country would be in position to expand social services such as health.

Although tax exemptions were considered to be temporary measures-to kick start particular sectors and provide temporary relief to struggling sectorsrecent attempts to reverse exemptions have been challenged by the private sector and in some instances parliament. For instance, during 2012/13, the removal of VAT exemption on piped water created a wedge between the MoFPED and members of parliament (MPs)-with claims by MPs that taxing water would affect the poorest households, while the MoFPED indicated that VAT exemption on water payments would create a UShs 8 billion shortfall in the budget. More recently, during the 2014/15 budget, the proposed reinstatement of VAT

on agricultural inputs during the 2014/15 budget speech was contested by MPs and civil society organization (CSOs).

On the other hand, there have been a number of tax proposal geared towards increasing the tax effort. For instance, government in FY2014/15 reinstated VAT on processed milk products including pasteurised milk. Also, the GoU imposed new taxes on products in the service sector such as excise duty on bank charges and mobile money transfer fees as well as earnings from sports betting activities. Given the number of people using the new innovative products such as mobile money, taxes on mobile money transfer fees will ensure that more Ugandans are brought into the tax paying bracket.⁹ The government has also eliminated the corporation tax exemption for private schools.¹⁰ However, it widely viewed that taxation on education services may distort the provision of such services.

In summary, these tax proposals seem to deepen the existing tax reforms – in terms of removal of VAT exemptions, broadening the tax base, and simplification and better tax administration. This is consistent with past studies that have proposed alternative tax systems that widening the tax base by formalising the informal sector (Sennoga *et al.* 2009) and possible re-instatement of graduated tax, among others. However, there is no much discussion in those studies on the introduction of new taxes, probably due to their complexities.

There are notable policy inconsistencies in the proposed tax regimes, if not well managed it could deter investment and in turn affect the economy. While government has created a conducive environment for innovations in different sectors, such innovations have in turn become potential taxable areas to raise tax revenue. And at times limited analysis of the potential impacts of such taxes is done. Such areas include mobile money services that have significantly contributed to financial inclusion (see EPRC 2013). For instance, the government's proposal to remove VAT exemptions on agricultural inputs undermines the efforts to enhance agricultural production and productivity given the country's relatively weak growth in agriculture and limited use of agricultural inputs. It remains unclear whether the removal of VAT on inputs is intended to formalise the agriculture sector, which is largely informal.

Recent tax proposals have been partly premised on general improvement in the welfare status of Ugandans during the past 10 years. Specifically, income poverty reduced from 56 percent in 1992/93 to 20.7 percent in 2012/13 (Ssewanyana & Kasirye 2014a) ahead of 2015 millennium development goals (MDG) target. Such a significant improvement in the welfare of households may have precipitated the new tax proposals including removing exemptions on items mainly consumed by the poor – on the premise of improved standard of living among Ugandans. These proponents forget the transient nature of income poverty among Ugandans (Ssewanyana & Kasirye 2014b; MacKay et al 2014 forth coming) as well as limited progress as measured by the UNDP's human development indices (especially in educational attainment and limited improvement in health outcome indicators, among others). Others have argued that for government to avert taxpayers' apathy, the government needs to demonstrate the impact of the tax it collects. Moreover, the regressive nature of taxation would be legitimate as so long as the revenue is spent in a progressive nature. This is the practice in some developed countries such as Sweden. It is also important to note that tax reforms in Uganda seem to have addressed vertical (e.g. by income levels) and less on horizontal equity (e.g spatial, gender etc).

4. DATA AND METHODS

4.1 Data Sources

This paper draws largely on the most recent UNHS V data to provide insights into household tax liabilities and their progressivity and/or regressivity. UNHS V is a nationally representative survey that captured information on 6,888 households from June 2012 to June 2013. The survey is based on a two-stage stratified random sampling procedure where the enumeration area is the primary sampling unit and 10 households are randomly selected from each enumeration area. The information relevant for this paper include: household demographic information, consumption expenditure on food and non-food items quantities, values - and labour market and employment information.

The other source of data include the official administrative data as well as the 2012/13 Uganda's tax schedule from URA. The former include the fiscal year tax revenue collections by broad categories over time. However, this paper focuses on the tax revenues for FY2012/13 to make inference on the likely impacts of the 2014/15 proposed tax measures. The timing of the UNHS V data matches the fiscal year with the exception of few households that were visited in June 2012¹¹. The latter source provides information on the tax regime in a given fiscal year that were applied to the household survey level data. Information on actual government recurrent expenditures on health and education are obtained from MoFPED.

Data Caveat: The survey lumped some goods and services with different tax treatment. Such examples include other drinks (bottled water, juices etc), other alcoholic drinks (spirits and local brews), and fuels (petrol and diesel), among others. This level of aggregation could not allow for separation of these goods and hence a fair attribution of the corresponding tax liabilities. The survey excludes some population such as institutions (e.g. barracks, schools) that are major consumers of certain items - such as alcohol and tobacco, among others. Cigarettes and tobacco are excluded from the derivation of the household excise duties due to survey data limitations and complexities that are inherent in the tax regime. Notwithstanding this shortcoming, the VAT liabilities are derived based on consumption that takes place in the formal markets.

4.2 Methods

4.2.1 Tax incidence

Measurement Issues: There are measurement issues that need to be highlighted. First, is the measure of income – most tax incidence or tax burden studies on developing countries have used consumption expenditure (such as Sahn & Younger 2003) as opposed to income (such as Faridy & Sarker 2011). It is evident from the available literature that these two measures could lead to different distributional tax impacts (see Blackman *et al.* 2009; Poterba

1989). Second, is the unit of analysis – individual or household. Some studies use income/expenditure per adult equivalent and others in per capita terms. This paper expresses consumption expenditure in per adult equivalent to account for the needs of different household members (see Appleton 2001) as well as being consistent with previous studies using consumption as a proxy for incomes. The analysis is done at household level.

Concerns of who bears the burden of tax have led to several studies as discussed above. The paper employs several indicators to provide insights into the incidence of type of tax – both vertical and horizontal equity. These indicators include:

- a. Effective tax rate which is derived as a share of actual tax paid to consumption expenditure multiplied by 100 (pre-tax and after tax income). A tax will be progressive, regressive or proportional if the rate increases, reduces or remains constant respectively, as one moves up the income distribution scale;
- *Relative tax burden:* a normalized measure of tax progression derived as the ratio between the share in total tax of a given socio-economic grouping to its share in total household consumption expenditure a value greater than 100 would imply that a given group is paying a greater share of its income in taxes. And progressive if the index increases with income;
- c. Concentration curve approach: where tax progression is graphically

represented - measures the cumulative tax paid per decile of the pre-tax income. Then tax progression over the entire income distribution will be progressive if the concentration curve lies consistently below the pre-tax income Lorenz curve. In addition, we examine the same measures by geographical location; and

d. Suits index: The Suits index is one of the most widely used measures of tax progressivity (Suits 1977). This index is bounded by -1 and 1. The tax is said to be proportional if the index is equal to zero, progressive if it is positive and regressive if the index is negative. The index is computed for the above 2014/15 tax proposals to provide insights into changes in the degree of progressivity of the Ugandan tax system among subgroups.

The household consumption expenditure is adjusted for spatial price variations as well as converting home production into market prices (for details see, Ssewanyana & Kasirye 2014a). The paper derives the tax liabilities based on the observed patterns of demand for taxable goods and services using consumption expenditure data and wage information data from the UNHS V. It follows the methodological approach in Chen et al (2001) and adopted in Ssewanyana & Okidi (2005), Sahn & Younger (2003) and Ssewanyana (2008). Some studies elsewhere (such as Sahn & Younger 2003) used the input-output tables to capture the intermediate tax impacts especially for taxes on fuel. Due to data limitations, the economy-wide tax

implications of the proposed tax proposals are beyond the scope of this paper. Given this data caveat, this present paper assumes supply for taxable products to be elastic and demand to be inelastic. Put differently, the paper considers two scenarios after a change in price due to tax (i) households consume the same quantity of goods and services after a change in taxes - own price elasticity to be zero; and (ii) consumption neutral after a change in taxes - own price elasticity of the goods and service to be unity. We further assume that the entire tax burden on final consumption is fully shifted from the producers to the final consumers - implying that those who are legally expected to pay tax (statutory incidence of tax) are quite different from those that bear the tax (economic incidence of tax). Data limitations especially on supply and demand elasticities could not allow for computation of the tax burden between production and consumption. As already discussed, there are concerns on the extent to which the tax burden is pushed to customers as economic incidence reduces their real income.

Derivation of taxes: The paper employs the statutory tax rates in force during the year for which this analysis is conducted to derive the tax liabilities – as first order approximation of incidence of taxes (see Sahn & Younger 2003) on final household consumption. In this paper the focus is on domestic taxes including indirect taxes (VAT, Excise) and direct taxes (PAYE and LST) as well as excise duties on petroleum products (petrol, diesel and paraffin). We assume that households that consume taxed goods and services pay the associated taxes. Otherwise, it is difficult to distinguish those taxable purchases done in the informal sector. The survey captured consumption information from

three different sources – consumption from own production, purchases and received in kind/gifts. Adjustments are made for those households that consume their own production of goods and services, for obvious reasons they do not pay taxes on such final consumption. We further assume that the consumption bundle remains unchanged. Below we present the derivation of taxes from household consumption data following the approach used in Ssewanyana & Okidi (2005).

Consumption expenditures data are captured at household level as after-tax expenditures (E_j) and we assume that all households pay taxes on all goods and services that attract taxes. We further assume that there is fair distribution of consumption among household members.

(i) VAT: There are three different VAT treatment as presented in the Table A 1 – zero rating, exempted and a uniform VAT rate of 18 percent on taxable goods and services. VAT is the last tax to be levied $(Vatrt_j)$ as a percentage of the pre-VAT price of the j^{th} goods or service. Hence the VAT liabilities paid by the i^{th} household is expressed as in Eq. (1):

$$VAT_{ib} = \sum_{j=1}^{n} \left(\frac{E_{ijb} * Vatrt_{b}}{1 + Vatrt_{b}} \right)$$
¹

For the purposes of policy simulations based on the tax proposals, we derive the amount of VAT paid under two scenarios - assuming constant quantities and consumptionneutrality. We take note that the pre-tax price might change due to changes in excise duties especially for those goods that attract both excise duties and VAT e.g. sugar.

Scenario 1: Constant quantities:

Under constant quantities – assumes households to continue to consume the same quantities even after a price change as a result of tax regime change, we calculate the amount of VAT paid by each household after a change in the VAT rate as expressed in Eq. (2).

$$VAT_{ia} = \sum_{j=1}^{n} \left(\frac{E_{ijb} * Vatrt_a}{1 + Vatrt_b} \right)$$
 2

The i^{th} household new consumption expenditure after a VAT rate change (E_a) is given as in Eq. (3), where subscript refers to after tax regime change whereas b refers to before changes in tax regime.

$$E_{ia} = VAT_{ia} - VAT_{ib} + E_{ib}$$

Scenario 2: Consumption-neutral:

Here we assume that consumption expenditure remains the same regardless of changes in the VAT rate. The amount of VAT paid is given as expressed in Eq. (4).

$$VAT_{ia} = \sum_{j=1}^{n} \left(\frac{E_{ijb} * Vatrt_a}{1 + Vatrt_a} \right)$$

$$4$$

ii) Excise duties: As already discussed, excise duties are imposed on selected items in addition to VAT (such as sugar, airtime, and cigarettes, among others). The exceptions are petroleum products (petrol, diesel and kerosene/paraffin). Some of these goods attract either an *ad valorem* or a flat rate. A flat rate of excise duty is imposed on quantity of goods such as a litre of petrol/diesel/kerosene, kilogram of sugar etc; whereas the *ad valorem* excise duty is expressed as a percentage of the retail price of a good or service such as on airtime.

For the derivation of excise taxes (Xcise) paid on petroleum products, it was necessary to have information on the average retail price per litre (Table A 4) during FY2012/13. We assume that households spend on petrol/ diesel products both directly (through motor vehicle ownership, generator/lawn mower ownership) or indirectly (via public transport fares of where fuel is used as an intermediate input). As much as there are price differentials between diesel and petrol, the survey captured information on these fuels as a lump-sum¹². The two fuels also have different tax treatment. Here we made two restrictive assumptions (i) that an increase in fuel tax will have uniform increase across petrol and diesel users; and (ii) that household's consumption of diesel is less common relative to petrol. In terms of the indirect expenditure on fuels, the paper assumes 20 percent expenditure on transport fares (on boda bodas, buses etc) to be devoted to diesel/petrol (as in Ssewanyana & Okidi 2005; Sahn & Younger 2003). However, this paper did focus on the distributional impact as an intermediate input¹³. Information on average retail prices¹⁴ was used together with expenditure information reported in the survey to derive the quantity of each of the above fuel types consumed by the households. These quantities were multiplied through by the flat rate (Xrts) to get the taxes due. The derivations are expressed mathematically in Eq. (5); where subscript f refers to fuel type (petrol, diesel and kerosene) and the rest of the variables are as defined before. To circumvent the data collection problem on fuel, the average price for both fuel types was derived, which in turn was used to derive the quantities consumed based on the survey consumption expenditure on fuels. The changes in fuel price might indirectly affect the household sector. The practise in the Uganda's transport sector has been to pass over such changes to the final consumers. For this matter, as already discussed we assigned a 20 percent excise duty on household consumption expenditure on transport costs as reported in the survey. In addition to petroleum products, sugar attracts a flat rate of excise tax per kilogram.

$$Xcise_{ib} = \sum_{j=1}^{m} \left(\frac{E_{ifb}}{P_f}\right) * Xrts_f$$
 5

For the goods that attract an *ad valorem* tax (Xrt_j) , the excise tax liabilities $(Xcises_j)$ are derived as given in Eq. (6). As with fuel types, we had difficulties in deriving excise duties on other alcoholic drinks such as spirits, waragi, and traditional beers, among others; and other tobacco to name a few.

$$Xcises_{ib} = \sum_{j=1}^{n} \left(\frac{E_{ijb} * Xrt_{ijb}}{(1 + Vatrt_{ib})(1 + Xrt_{ijb})} \right) 6$$

iii) PAYE: First, the paper assumes that the survey respondents were more likely to report net incomes as opposed to gross income. Second, all individuals in the formal sector are likely to pay taxes as per the statutory requirements. The analysis is based on those individuals that reported formal paid employment based on the main usual activity in the past 12 months prior to the survey. These include individuals working for government, state-owned enterprises, non-governmental organisations (NGOs) and international organisations. The other category of employees included were those individuals working with private businesses/ firms that employ five or more employees¹⁵. The information on employment earnings was collected through different modes of payment - but for this paper, all the different modes of payment were converted into monthly payments. In the 2012/13 UNHS, about 1,220 individuals were in formal sector employment with 78 individuals with missing earnings information - hence excluded from the analysis. The analysis focuses on the main usual activity. The income tax reform in 2012/13 revised the PAYE brackets from four to five, with higher rates as illustrated in Table A 2 and Table A 3. However, we endeavour to explore the extent of government tax revenue gained or lost due to the income tax reforms.

iv) Local Service Tax (LST): the tax is derived based on the earnings information of the same groups targeted for PAYE as in (iii) above. This is a local government tax revenue but collected and remitted to local governments by the employers. The paper assumes compliance by all employers.

4.2.2 Benefit incidence analysis (BIA) of public expenditure

The analysis here follows Demery (2000) and Lanjouw & Ravallion (1999) approach to provide insights into the distributional impacts of public social spending (focusing on education and health sectors) on different sub-groups. The distribution will depend on the level and composition of government spending to sectors - reflecting government behaviour - on one hand, and on household behaviour (e.g. sending their children in public schools) on the other hand. The BIA provides insights into the distribution of the expenditure benefits by combining information from government recurrent expenditures and survey-based information. In calculating the unit subsidy – dividing survey-based users of a given public service by government recurrent expenditure for a given sector by level – we assume that all users benefit equally from a given public service.

Each sector is further divided into levels: education into primary, secondary and post-secondary education; and health into health centres and hospitals. The results are presented via concentration curves to measure the degree of progressivity in benefits from government social spending. The paper compares the distribution of the benefit to the distribution of the population (see Sahn & Younger 2000). The benefits are said to be progressive if the benefit curve lies everywhere above the 45 degree line. In other words, the poorer households receive disproportionately large shares of the benefit. On the other hand, if the benefit curve lies below the 45 degree line, the benefits accrue disproportionately to the well to do households. Alternatively, the concentration curves are compared to the distribution of welfare (per adult equivalent). If the benefit curve dominates the Lorenz curve then the benefits are said to be progressive. Otherwise, there are regressive.

4.2.3 Description of socio-economic groups

The consumption aggregate is expressed in 2012/13 market prices (for details see Ssewanyana & Kasirye 2014a). Depending on the focus, the incidence of tax burden would take into account horizontal and vertical equity concerns. This paper focuses on both. In terms of vertical equity, the paper derived the expenditure deciles based on the per adult consumption expenditure expressed in 2012/13 prices. For horizontal equity, we considered the regional and rural/urban dimensions as well as household typologies (by headship).

5. RESULTS AND DISCUSSIONS

5.1 Share of households consuming selected taxable items

Based on the survey data, households consumed on average over 50 goods and services. Out of these, nearly half are taxable items. A greater proportion of non-taxable goods are food items - either VAT-zero rated or VAT exempted – probably for equity purposes. Table 2 presents results based on selected goods that attracted public debate after the FY 2014/15 national budget speech (MoFPED 2014b). On average, about 77 percent of the households consumed paraffin during the last 30 days prior to the survey interview. Paraffin is used primarily for lighting by 71 percent of the households mainly by households in the lower income groups and those residents in rural areas - and less for cooking purposes (less than 1 percent). Regardless of consumption purpose, the share of households using paraffin increases with incomes up to the 5th decile and thereafter reduces significantly. The relatively very low share by the poorest decile consuming paraffin (66 percent) needs to be interpreted with caution - it is likely to be an affordability issue.¹⁶ To this end, households' greater reliance on paraffin for lighting is not consistent with the expected shift to other forms of energy given the significant reduction in income poverty since the 1990s. The shift away from paraffin to say LPG Gas, solar and electricity, among others, is not happening. Overall, the reliance on paraffin for lighting reduced from 85 percent in 2002/3 to 70 percent by 2012/13. Furthermore, the VAT exemption of LPG gas in 2006/7 is yet to yield the expected outcomes as less than 1 percent of households use LPG for either lighting or cooking.

Turning to fuel consumption, households consume fuel both directly (through vehicle ownership) or indirectly (via public transport). On average, 6 percent of the households reported direct fuel consumption whereas 62 percent reported indirect consumption. Yet, in both cases the share of households consuming increases with income group (see Table 2).

A large proportion of Ugandan households still cannot afford to purchase items presumed as relatively cheap—which have recently attracted additional taxation. A case in point is the consumption of salt. Table 2 shows that nearly 92 percent of the households consumed salt in the past seven days prior to the survey. As much as salt might seem to be an inexpensive item, borrowing salt from neighbours or even going without it was cited as a common coping practise. Out of 7.1 million households in Uganda, about 2.5 million reported borrowing salt from neighbours, 3.8 million bought salt and 0.2 million went without salt when they last run out of salt in the last 30 days prior to the survey (not shown in the table). Lastly, there is a clear positive relationship between income and the consumption of airtime and piped water, the relation is inconclusive for sugar and maize flour.

5.2 Validation of survey-based tax calculations with URA official tax statistics

Despite the predominatly informal nature of economic activities, majority of Ugandan households pay some taxes—albeit

					_	Fu	ıel	
Decile	Maize	Salt	Sugar	Paraffin	Airtime	Direct	Indirect	Piped water
1	34.0	88.1	21.3	65.7	21.1	0.0	18.8	3.3
2	38.2	92.3	43.1	82.1	35.0	0.3	39.3	2.7
3	46.3	95.1	54.4	84.2	39.0	1.2	45.5	3.8
4	54.0	94.6	63.7	84.4	49.4	2.0	51.6	6.9
5	52.8	94.5	61.9	86.5	53.6	2.6	55.6	7.8
6	56.7	95.0	66.2	86.1	53.4	3.8	60.4	9.1
7	60.1	95.2	73.9	81.6	65.8	4.0	67.1	14.8
8	64.7	93.7	72.1	79.8	72.4	5.7	75.6	19.8
9	60.8	90.4	78.5	72.2	77.4	7.8	78.8	25.7
10	54.8	82.6	78.5	59.9	87.1	19.2	86.7	45.3
Uganda	53.4	91.5	64.1	77.0	59.4	5.9	61.8	16.9

Table 2: Share of households with no-zero expenditures on selected goods in 2012/13, %

Notes: Direct fuel consumption refers to vehicle owners whereas indirect refers to expenses on public transport

Source: Author's calculations based on UNHS 2012/13

indirectly. Table 2 confirms that households are subjected to more than a single tax. Indeed, the share that does not pay any of the taxes considered in this paper is less than one percent of the households. During 2012/13, total annual household income as proxied by consumption expenditure is estimated at UShs44,633 billion and total domestic indirect taxes amounted to UShs1,973 billion (Table 3 - summation of VAT and excise duties on non-petroleum products) – translating into a tax pressure of 4.4 percent. As discussed in the subsequent sections, the comparison of our surveybased tax liabilities with the official tax collections data provides confidence in the policy simulations that follow therefrom.

Domestic indirect taxes: Table 3 presents domestic tax liabilities/payments based on final household consumption as well as validating them with official tax revenue statistics from URA. The plausible explanations for observed discrepancies (see Table 3 column f) is as follows:

i. Ratio greater than 1: This could partly be capturing purchases made through informal means or tax leakages (see also Cawley & Zake 2010). To illustrate this point, the ratio for piped water is nearly two-fold which could be capturing illegal water connections, under reporting of usage by households or influenced by the disagreements between MoFPED and MPs on VAT being levied on water (see section 3). We further note that VAT on piped water was reinstated in FY2012/13 with revenue projection of UShs21.7 billion. However, the projection is well below the realised amount of UShs12.2 billion; and

Ratio less than one: This is could ii. largely be explained by the fact that household surveys do not cover institutions or firms. This is especially so for electricity tax payments which exclude industrial or institutional use. We further note that the ratios for some items that attract both VAT and excise duties are in the reverse order. This is true for sugar and airtime. Survey based VAT is greater than the official VAT collection whereas the reverse is observed for excise duties. Yet, in terms of total tax liabilities the survey based calculations are very close to the official tax collection statistics.

Turning to overall contribution in total domestic indirect tax revenues, the survey estimates corroborate (see Table 4) with official tax revenue collections in terms of the largest share of taxes accounted for by VATimplying that tax liabilities at household level are largely consumption based. This further confirms government's greater reliance on consumption tax for raising taxes from households. The share of VAT in total taxes reduces with income guintile. This holds for both before and after the proposed 2014/15 tax measures. However, the change in the poorest decile's VAT share increases by about 7 percentage points whereas it remains almost unchanged for the richest decile. The share of fuel increase with income decile except for the 7th decile; and the richest decile's share is more than three-fold that of the poorest decile.

		Scenario			
	Base	Consumption	Quantity	2012/13	Ratio
(a)	(b)	(c)	(d)	(e)	(f) = (b)/(e)
Total household					
expenditure	44,633.74	44,633.74	44,936.19		
Tax liabilities	3,079.05	3,288.98	3,381.97		
Indirect liabilities	1,818.31	1,995.76	2,027.57	1,730.97	1.05
Direct liabilities	733.68			1,196.50	0.61
Indirect domestic liabilities:					
VAT	1,368.08	1,539.06	1,571.06	1,279.17	1.07
Sodas	51.98	51.98	51.98	34.90	1.49
Beers	54.06	54.06	54.06	97.37	0.56
Cigarettes	11.84	11.84	11.84	2.54	4.66
Sugar	119.89	120.14	121.02	109.80	1.09
Airtime	180.65	180.65	180.65	142.03	1.27
Piped water	28.02	28.02	28.02	12.20	2.26
Electricity	35.40	35.40	35.40	135.31	0.26
Salt	-	14.53	17.15		
Other VAT	886.63	1,042.83	1,070.95	745.02	1.19
Excise duty					
Petroleum products	527.06	559.55	620.25	794.84	0.66
Petrol/diesel - direct	115.62	128.74	132.37		
Petrol/diesel - indirect	411.44	411.44	467.10		
Paraffin	-	19.37	20.78		
Non-petroleum products	449.85	456.31	456.51	451.80	1.00
Sodas	33.22	33.22	33.22	53.52	0.62
Beers	112.62	112.62	112.62	170.72	0.66
Cigarettes				9.91	0.00
Sugar	6 29	12 47	12 59	7 35	0.86
Airtime	91 24	91 24	91 24	147 56	0.62
Others	206.47	206.76	206.84	62 74	3 29
	200.47	200.70	200.04	02.74	5.25
Direct tax liabilities	733 68				
ΡΔΥΕ	715 00			1 196 50	0.60
IST	12 50				0.00
LUT	10.55			-	
Milk (pastourized)		10 07	77 20		
Maize flour	-	10.97	1/0 00		

Table 3: Domestic tax liabilities & expenditure, 2012/13 (UShs Billion)

Notes: Column (b) refers to the base scenario; column (c) assumes consumption neutral and column (d) assumes constant quantities consumed. Column (f) shows the extent to which the survey estimates compared with the actual administrative revenue from URA in column (e).

Source: Author's calculations based on UNHS 2012/13

		Bas	se scenario			After t	ax measur	es	
0	Decile	VAT	Excise	Fuel	All	VAT	Excise	Fuel	All
	1	72.9	18.5	8.6	100.0	79.4	12.1	8.6	100.0
	2	69.6	19.3	11.2	100.0	72.1	15.7	12.2	100.0
	3	67.8	18.1	14.1	100.0	70.1	15.0	14.9	100.0
	4	67.1	18.6	14.3	100.0	69.2	15.7	15.1	100.0
	5	65.1	19.0	15.9	100.0	67.1	16.3	16.6	100.0
	6	63.5	18.2	18.3	100.0	64.9	16.0	19.1	100.0
	7	63.3	19.4	17.3	100.0	64.9	17.0	18.1	100.0
	8	61.6	18.3	20.1	100.0	62.8	16.3	20.9	100.0
	9	57.8	19.9	22.3	100.0	58.0	18.4	23.7	100.0
	10	53.4	19.3	27.3	100.0	53.2	18.0	28.9	100.0
	Mean	58.3	19.2	22.5	100.0	59.3	17.3	23.4	100.0

Table 4: Share of tax type in total household tax liabilities (%), 2012/13

Notes: Estimates "after tax measures" done for constant quantities.

Source: Author's calculations based on the UNHS 2012/13.

Fuel taxation: Based on the final household consumption, households pay UShs527 billion as excise duties on fuel consumed both directly and indirectly (Table 3) – direct consumption accounts for 22 percent of total fuel taxes. It is evident that the survey-based fuel taxes are 66 percent of the official collection statistics. This is largely explained by the fact that household surveys exclude fuel usage by firms/industries/organisations.

Domestic direct taxes: Due to data limitations, this paper was only able to focus on PAYE among the domestic direct taxes collected by the Central government. Based on the survey data, there are about 1.1 million formal paid employees from less than one million households – with the richest decile accounting for 35.5 percent compared to 3.7 percent for the poorest decile. The richest decile accounts for 63.2 percent of the total earnings from formal employment (Table 5). The PAYE based on the survey is estimated at UShs 715 billion (see Table 3) – which is only 60 percent of the official PAYE collections¹⁷. The most plausible explanation for this finding is the fact that the survey based PAYE estimates capture taxes for formal employees and the fact that PAYE also includes levies on auxillary incomes such as employee bonus which are ordinarily not stated by survey respondents. In addition, about 6 percent of these employees in our sample had missing earnings information.

Next we consider the implications of 2012/13 income tax reform in relation to salaries as discussed above. As earlier mentioned, the Income Tax (Amendment) Bill, 2012 increased the monthly PAYE threshold from UGX 130, 000 to UShs 235,000. In addition, it increased the number of tax bands from 4 to 5 by creating a new category— employees whose monthly income is more than UShs 10 million. In the following analysis, we assume the pre-2012/13 income tax brackets and we compare the estimates

with the revised income tax brackets. Table A 3 reveals that nearly half of the formal employees earned below UShs235,000 per month whereas less than one percent earned above UShs10 million from their respective main usual activity. The income tax reform of 2012/13 reduces the share of employees with taxable earnings from 68.5 percent to 48.0 percent based on the survey data. This reduction had unfavourable implications for government tax revenue as illustrated in Table 5. Evidently government lost about Shs124.9 billion (almost 0.2 percent of GDP) as a result of the income tax reforms in 2012/13. Yet, it is not clear from the available information how government compensated for the forgone revenue. Given the government's narrow tax base, there is no doubt that this was not a wellthought through reform. This result seem to suggest that increasing direct domestic tax revenue remains limited largely explained by low creation of paying jobs in the formal sectors as well as the structure of the labour market.

The results in Table 5 further reveal that PAYE is extremely progressive as illustrated by the effective PAYE tax ratio that tend to increase with income groups - except for the 9th decile. Yet, the decile's share in total PAYE reduces with the revised 2012/13 income brackets except for the richest decile - where the share increases from 79.5 percent pre-2012/13 to 85.1 percent after the reform. Similar results are noted for the relative burden of PAYE. The burden for the richest decile is more than 100 implying that the decile paid a greater share of its income in taxes. That said, the reforms of 2012/13 led to more progressivity of the PAYE as depicted in Figure 2 - much as the concentration curve does not lie everywhere

below the Lorenz curve. This is largely explained by the progressivity of the tax schedule as well as the fact that most formal sector employees tend to be significantly better off than other Ugandans. Overall, the richest decile accounts for a large share of total income from salaries as well as income taxes paid. The extent to which the revisions in income taxes could have impacted on private investments is beyond the scope of this paper.

In Uganda, taxes are collected at different levels: national, local government and municipal levels. Yet, tax revenue collection capacity at lower levels remains limited. This is not surprising since the central government has greater tax instruments compared to the lower levels. To illustrate this point, the LST collection from formal employees is estimated at UShs18.59 billion (Table 3) and increases with income. However, the collections are too low to complement central government support towards service delivery at district level. Instead, local governments depend heavily on the centre for fiscal transfers.

5.3 What are the implications of the new proposed taxes?

5.3.1 At Aggregated level by type of tax

Table 3 further presents the implications of the 2014/15 tax proposals. It presents both the lower and upper bound effects – columns (c) and (d) respectively. The upper bound tax effect assume that supply is elastic and demand is perfectly inelastic – households do not adjust their consumption of goods and services because of the tax. Broadly speaking, the above proposal on selected items would increase the amount VAT collected by at most UShs202.6 billion

	Number of	PAYE, US	Shs (Bn)		% tota	I PAYE		
Decile	employees '000	Before	After	%in total employees	After	Before	Effective PAYE rate, %	Relative tax burden, %
1	40.8	1.0	0.1	3.7	0.0	0.1	0.3	6.0
2	45.5	1.0	0.2	4.2	0.0	0.1	0.3	7.6
3	53.4	3.8	1.3	4.9	0.2	0.5	1.6	11.1
4	51.4	5.6	2.3	4.7	0.3	0.7	2.2	14.5
5	65.0	9.0	4.5	6.0	0.6	1.1	3.2	19.9
6	77.8	16.8	10.2	7.1	1.4	2.0	5.1	27.8
7	73.5	29.1	19.4	6.7	2.7	3.5	7.6	35.4
8	125.6	57.1	39.6	11.5	5.5	6.8	8.4	66.1
9	171.5	49.2	28.8	15.7	4.0	5.9	5.5	73.3
10	387.8	667.4	608.8	35.5	85.1	79.5	18.9	449.6
All	1,092.2	840.0	715.1	100.0	100.0	100.0	14.1	

Table 5: PAYE by decile, 2012/13

Notes: (a) Column with **'After**" refers to survey-based estimates assuming the 2012/13 income tax reform whereas the column marked **'Before**" refers to income tax regime prior to the 2012/13 reform. (b) Effective PAYE rate is the share of a given decile's PAYE to its earnings; (c) Both effective and relative tax rates are estimated based on "**after**" reform.

Source: Author's calculations based on UNHS 2012/13.

and about UShs93.13 billion from fuel taxes. However, if households decide to keep their current expenditure levels, government would lose tax revenue. Although the loss of taxes would be compensated by the removal of VAT exemptions on processed cereals (in this case maize flour), processed milk, salt and piped water.

Base scenario: Comparing base and after reform scenarios, Table 6 shows that households in the richest decile earned 32 percent of the national income compared to 33 percent after reforms - almost thirteen fold that of the poorest decile of 2.5 percent. The distribution of income is almost similar to that based on earnings from formal employment.

The share in VAT of the poorest decile (of 1.4 percent) is well below its group's share in national income (of 2.5 percent) (as proxied by household consumption expenditure)

whereas the reverse is observed for the topmost two deciles. To illustrate this, the richest decile's share in VAT stood at about 41.7 percent compared to 32.7 percent share in national income. This is greatly explained by differences in the consumption patterns with poorer households more likely to spend less on taxable goods and services. The average effective rate is 3.1 percent and the rate increases as we move from the lower to higher income deciles. The richest decile bears a VAT burden (of 3.9 percent) that is greater than the average rate. In other words, lower income groups seem to enjoy less VAT burden – in aggregate form than their counterparts in higher income groups.

Table 6 further shows that higher income households pay more taxes in absolute terms, as well as a proportion of their total income. In actual amounts of tax payments, the VAT burden increases with income decile, with

	Тах	as share c	of income		Тах	type as %	in total tax		Share in	R	elative tax	rate, %	
Decile	Total	VAT	Excise	Fuel	Total	VAT	Excise	Fuel	Income	Total	VAT	Excise	Fuel
Base scenario:													
1	2.4	1.7	0.4	0.2	1.1	1.4	1.1	0.4	2.5	45.2	56.5	43.5	17.3
2	3.1	2.2	0.6	0.3	2.3	2.7	2.3	1.1	3.8	58.8	70.1	59.1	29.2
ε	3.3	2.2	0.6	0.5	3.0	3.5	2.8	1.9	4.8	62.4	72.5	58.9	39.2
4	3.5	2.4	0.7	0.5	3.8	4.3	3.7	2.4	5.6	67.0	77.1	65.0	42.8
Ю	3.7	2.4	0.7	0.6	4.6	5.1	4.5	3.2	6.6	69.4	77.4	68.8	49.2
9	3.9	2.5	0.7	0.7	5.8	6.3	5.5	4.7	7.8	73.9	80.4	70.3	60.1
7	4.3	2.7	0.8	0.8	7.6	8.2	7.7	5.8	9.2	82.2	89.1	83.1	63.4
8	4.6	2.9	0.9	0.9	10.1	10.6	9.6	9.0	11.4	88.2	93.1	84.0	79.0
6	5.5	3.2	1.1	1.2	16.3	16.2	17.0	16.2	15.5	105.3	104.3	109.5	104.3
10	7.3	3.9	1.4	2.0	45.6	41.7	45.9	55.2	32.7	139.3	127.5	140.5	168.9
Mean	4.1	3.1	1.0	1.2	100.0	100.0	100.0	100.0	100.0				
After reform:													
1	3.7	2.9	0.4	0.3	1.6	2.1	1.1	0.6	2.5	62.1	83.1	43.4	22.7
2	3.9	2.8	0.6	0.5	2.5	3.1	2.3	1.3	3.9	65.5	79.6	59.6	34.2
c	4.0	2.8	0.6	0.6	3.3	3.9	2.9	2.1	4.8	68.5	81.0	59.7	43.6
4	4.3	2.9	0.7	0.6	4.1	4.7	3.7	2.6	5.6	72.2	84.2	65.7	46.4
ß	4.3	2.9	0.7	0.7	4.9	5.5	4.6	3.4	6.6	73.6	83.3	69.4	52.2
9	4.5	2.9	0.7	0.9	6.0	6.5	5.5	4.9	7.8	76.5	83.7	71.0	62.4
7	5.0	3.2	0.9	0.9	7.8	8.6	7.7	6.0	9.2	84.7	92.8	83.5	65.3
∞	5.3	3.3	0.9	1.1	10.2	10.8	9.6	9.1	11.4	89.4	94.7	84.3	79.7
6	6.1	3.5	1.1	1.4	15.9	15.6	17.0	16.1	15.5	102.9	100.6	109.8	103.9
10	7.9	4.2	1.4	2.3	43.8	39.3	45.6	53.9	32.7	134.0	120.1	139.6	164.9
Mean	4.5	3.5	1.0	1.4	100.0	100.0	100.0	100.0					

Table 6: Effective and relative tax burden

Notes: Fuel includes fuel & paraffin; Source: Author's calculations based on UNHS V.

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the richest decile's burden almost three fold of the poorest decile's. This is not surprising since the poorest decile spend nearly 60 percent of its income on those goods and services excluded in the taxable basket. Most of their category of goods and services consumed are either tax exempted or zero rated - whether this creates distortions against poverty reduction efforts remains an empirical issue that is beyond the scope of this paper. Progressivity of these broad taxes is further confirmed by the relative tax burden ratio with the top two deciles paying a greater share of their income in taxes and the index increases with income group. Further supported in Figure 2 (a)-(c) The discussion that follows focuses on the upper bound scenario.

Implications for the 2014/15 tax proposals: It is evident that the new tax proposals (considered in this paper) seem to affect the tax distribution across the income groups. The most notable change is the rather higher tax burden for the lower deciles. In terms of horizontal equity, the burden of VAT and excise duties falls on those households whose heads are males and those households resident in urban areas and in the central region. Although overall VAT on food falls more on those households resident in the eastern region (Table 8).

How is the progressivity of the tax system?: The results in Table 7 present the Uganda tax system based on Suits index at the national as well at disaggregated level. The tax system was progressive with a Suits index of 0.178 prior to application of the FY2014/15 tax proposals. At sub-group level, the tax system is more progressive at rural than at urban level; female headed households than for male headed households; for the northern region relative to other regions. However, tax system becomes regressive with the new tax proposals considered in this paper – with a Suits value of -0.062 (see Table 7 column marked Model 1). This implies that the new tax proposals seem to have a regressive impact – though the magnitudes are small. Similar results are noted for sub-groups. The only exception is for central and northern regions where progressivity is maintained though lower than the base scenario.

As discussed above, maize is a major staple food for a majority of Ugandans. It is evident from Table 7 that maintaining VAT exemption on processed maize brings back the progressivity of Uganda's tax system. However, the system becomes slightly less progressive without VAT exemption. At national level, the Suits index reduces from 0.178 to 0.153. Worth noting, the system becomes more progressive for urban areas and the central region; and less progressive for other geographical areas. By extension, there notable changes in regional ranking. The impact on male headed households is negligible. Notably, these findings partly reflect the different consumption patterns across these sub-regions.

5.3.2 At disaggregated level for selected items

Reinstatement of VAT on salt: The removal of VAT exemption on salt will yield tax payments in the range of UShs14.5-17.2 billion. The concentration curve in Figure 2 (d) reveals that VAT on salt is regressive – the poorer will pay a greater proportion of their income in salt taxes relative to their counterparts in richer households. In terms of horizontal equity, the results in Table 8 reveal that households with

		After simulations
Sub-group	Base	Model 1 Model 2
Uganda	0.178	-0.062 0.153
Place of residence:		
Rural	0.137	-0.105 0.046
Urban	0.115	-0.025 0.179
Regions:		
Central	0.133	0.031 0.176
Eastern	0.140	-0.181 0.029
Northern	0.217	0.034 0.127
Western	0.151	-0.029 0.092
Household headship:		
Female	0.186	-0.069 0.101
Male	0.176	-0.060 0.172

able 7: Suits Indices o	f progressivity for the	Ugandan tax system	by sub-groups
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Notes: Scenario 1 includes VAT on processed maize; whereas Scenario 2 leaves processed maize as VAT exemption. Both scenarios includes the other new taxes discussed in this paper.

Source: Author's calculations based on UNHS V data.

female heads have a greater share in total VAT relative to their share in total income compared to their counterparts with male heads. Put differently, the relative tax burden is greater than 100, implying that female headed households are paying a greater share of their income in taxes on salt. This would imply that the burden on VAT on salt falls more on the households with female heads compared to their male counterparts. Similarly, the burden is greater on rural households relative to their urban counterparts. Regionally, the central region is the only region where its share in total VAT on salt is less than its share in total income.

Increase excise duty on Sugar from UShs25 to UShs50 per kilogram: During FY2011/12 the excise duties on sugar were reduced by half on the premises of it being a key welfare item consumed by many households (MoFPED 2011). Yet, increasing the excise duty on sugar will also increase the amount of VAT levied on sugar. This proposal is estimated to increase excise duties from its current level of UShs6.29 billion to about UShs 12.59 billion – an additional excise tax of UShs6.29 billion (compared to the projection of UShs7 billion in 2014/15 prices (MoFPED 2014b). The VAT on sugar also increases from UShs119.89 billion to UShs121.02 billion. Overall, increasing excise on sugar will raise an additional UShs1.13 billion in total government tax revenue. It is evident in Figure 2 (e) that the findings are inconclusive on who bears the sugar tax burden.

Termination of VAT zero rating on processed milk: Government proposed removal of VAT exemptions on processed milk products. Due to data limitations, the paper focuses on pasteurised milk. According to Mbowa *et al.* (2012), about 28 percent of the milk consumed by households is in pasteurised form. Consequently, VAT on pasteurised milk would generate revenue in the range of UShs19-22 billion and this tax would be progressive as illustrated in Figure 2 (f) – with the better of households paying more taxes. Spatially, the burden of VAT on milk will fall more on households resident in urban areas and those resident in the central and western regions (see Table 8).

Termination of VAT zero rating on maize flour: Again one of the tax measures was the removal of VAT exemptions on processed cereals. However, the available household survey could not permit analysis for all processed cereals. Instead, the focus of this paper is on maize flour, which is consumed by more than one half of the households¹⁸. Consequently, VAT on maize flour would generate about UShs129-148 billion. However, Figure 2 (g) suggests some degree of inconclusiveness of who would bear the VAT burden. This is not surprising since maize flour is a staple food to a majority of Ugandans regardless of income level (see also Table 2). Table 8 reveals that removal of VAT exemption on maize flour would fall on households whose head is a female, as well as those households that are resident in rural areas and in the eastern and western regions. VAT on processed maize would be counterproductive from the food security angle.

Reinstatement of excise duty of paraffin/ kerosene: During FY2011/12 excise duties on kerosene were removed to reduce the burden of households that would arise from increased prices (MoFPED 2011). However, government proposed its reinstatement in FY2014/15 at UShs200 per litre. While the public, in particular women groups, contested the reinstatement of the taxes on paraffin, the government has maintained its position – claiming that maintaining the status quo will promote the adulterations common with diesel. This fear is not peculiar to Uganda. The NCAER (2005) report confirms the same practise in other developing countries. The reinstatement of excise duties on paraffin will raise revenue tax between UShs19.4-20.8 billion (in 2012/13 prices). These estimates are above the projection of UShs15 billion (MoFPED 2014b). That said, these excise duties are regressive as illustrated in Figure 2 (h). This finding corroborate with previous studies such as Ssewanyana & Okidi (2005). Additionally, the results in Table 8 reveal that the burden of reinstated excise duty on paraffin will fall on households whose heads are female, and those households that are resident in rural areas and in the eastern region. These social groups pay a higher share of their income in taxes relative to their counterparts in other groups.

Increase in fuel taxes: Increasing the excise duties on petrol/diesel by UShs50 per litre will yield an additional tax revenue of UShs93.19 billion from households – on the assumption that households do not adjust their fuel consumption patterns. Otherwise, the incremental revenue might be lower if households were to maintain the same level of consumption expenditure. Meanwhile, direct spending on fuel will yield an additional UShs 16.76billion (upper bound). We note extreme progressivity of the fuel taxes partly explained by the fact that fuel consumption is more concentrated among the better off households (see also Table 2 and Figure 2 (i)). Progressivity of fuel tax corroborate with those findings reported by Steiner (2011) for developing countries.

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Table

				Share ir	i tax type, %					Share, % in	
Socio-grouping	VAT	Excise	Food	Non-food	Maize	Milk	Salt	Water	Paraffin	Income	Population
Effective tax burden:											
Female	24.8	23.6	26.1	24.1	27.9	27.2	30.5	31.8	30.9	27.0	31.5
Male	75.2	76.4	73.9	75.9	72.1	72.8	69.5	68.2	69.1	73.0	68.5
Rural	54.4	49.6	57.1	53.1	72.8	51.4	79.4	24.5	74.8	63.3	73.3
Urban	45.6	50.4	42.9	46.9	27.2	48.6	20.6	75.5	25.2	36.7	26.7
Central	46.4	53.0	42.1	48.5	23.0	46.0	22.9	53.2	32.2	39.8	29.7
Eastern	19.8	16.1	23.0	18.2	39.9	17.9	27.2	14.2	34.2	21.3	26.6
Northern	12.6	10.4	14.8	11.5	9.7	9.9	20.3	5.8	11.9	13.6	20.2
Western	21.2	20.6	20.1	21.8	27.3	29.5	29.7	26.8	21.7	25.3	23.5
Relative tax burden:											
Female	91.7	87.4	96.8	89.3	103.3	100.8	113.2	117.8	114.6		
Male	103.1	104.7	101.2	103.9	98.8	99.7	95.1	93.4	94.6		
Rural	85.9	78.4	90.1	83.9	114.9	81.2	125.3	38.6	118.1		
Urban	124.4	137.4	117.1	127.9	74.2	132.5	56.3	206.0	68.8		
Central	116.5	133.0	105.6	121.7	57.8	115.4	57.4	133.6	80.9		
Eastern	92.6	75.2	107.7	85.4	187.2	84.0	127.3	66.4	160.3		
Northern	92.8	76.5	109.5	84.9	71.8	48.6	149.5	42.6	87.6		
Western	84.1	81.5	79.5	86.3	108.1	116.8	117.5	106.2	85.9		
Source: Author's calculations based	d on UNHS V.										

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5.4 Benefit incidence analysis of the public expenditures results

As earlier discussed, while MPs argued against the regressivity of the proposed tax measures, government maintained its position of the progressivity of its public Consequently, spending. this section provides insights into the distributional impacts of government social spending focusing on health and education in 2012/13. The results are presented in Figures 2 (a & b). As discussed above the benefit curves are evaluated against the Lorenz curve and 45 degree line. It is evident that government spending on primary education is progressive and somewhat inconclusive for secondary education. For the latter, regressivity is observed at lower percentiles relative to the higher ones. Turning to postsecondary education, the Lorenz curve and 45 degree line dominate the benefit curve, indicating that public spending on postsecondary education is regressive (Figure 3). The poorest quintile's share in total education spending of 16.9 percent is well above their share of household consumption expenditure of 4.3 percent. The richest quintile received 8.2 percent of the total education public spending though less than its share in total household expenditures

(59 percent). The richest quintile's share in total education spending increases from 5.5 for primary education to 8.2 percent for post-secondary education. In contrast, for the poorest quintile, it reduces from 16.9 percent for primary to less than 1 percent for post-secondary. The poorest rate of participation in public primary education is higher compared to the richest quintile – this is not surprising since the poorer households are more likely to enrol their children in public schools.

Turning to health, the benefits curve for health centres is well above the Lorenz curve and the 45 degree curve (Figure 4), indicating that the public spending on health centres is progressive. The reverse is noted for public spending on hospitals. This finding is not surprising since most of these hospitals are located in areas that are more accessible to the well to do households, especially in cities and/towns. The poorest quintile's share in total health spending is 17.6 percent well above its share in total household expenditures. On the other hand, the share in health spending on hospitals for the richest quintile is almost twice that of the poorest quintile's.







Figure 4: Concentration curve for public spending on health by level

Overall, these results imply that progressivity of public spending depends on the level of usage. The poorer households are likely to benefit from public spending on primary education and on public health centres whereas public spending on public hospitals benefits the better of households. By implication the seemingly less progressivity nature of the Uganda tax system due to the above proposed 2014/15 tax measures is partly offset by the progressivity of public spending.

6. CONCLUSIONS

Unlike the previous studies on the incidence of tax, this paper has provided insights into the tax-benefit incidences of a selected set of the FY2014/15 tax proposals. The analysis draws on the most recent nationally representative household survey of 2012/13 and administrative data on revenue and government expenditure. The choice of the tax measures of focus was guided by the data availability. The analysis focused on the final household consumption following a static approach. The paper did not explore the intermediate tax or consider the whole range of taxes paid by households. Nevertheless, the evidence from this analysis presents a compelling evidence on the tax-benefit impacts of the proposed tax measures. The results are corroborated by the previous studies.

In relation to the direct domestic taxes, the paper explored the implications of the 2012/13 income tax reform on government tax revenue as well as its distributional impacts. The reform resulted in government tax revenue loss to the tune of 0.2 percent of GDP in 2012/13 prices. On distributional impacts, the reform enhanced the progressivity of PAYE with a greater tax burden on the richest decile. The forgone revenue is worrying given Uganda's narrow tax base against its several unfunded longterm development programs - especially if the enhanced disposable incomes of the low income earners did not translate into higher consumption taxes.

There is no doubt that the government has to increase its domestic revenue mobilisation if it is to support its development programs. However, the choices are limited. The potential to increase the current VAT rate of 18 percent is limited given the ongoing tax harmonisation efforts at the EAC level. The worst scenario would be when Uganda is pushed to reduce its current rate of 18 percent to about 16 percent. Instead, government efforts are focused on broadening the tax base through a reduction in the number of tax exemptions on basic goods and services. The results have demonstrated that VAT would become less progressive though government would raise additional revenue of UShs202.6 billion in 2012/13 prices. In addition, it would raise UShs93.19 billion in excise duties. The total additional tax revenue remains well below the overall estimated revenue loss due to exemptions (of Shs1,210 billion as discussed see section 3).

Next we consider who bears the tax burden as a results of the proposed tax measures. The results are mixed at disaggregated level. On one hand, removal of VAT exemption is progressive for some goods (e.g pasteurised milk), regressive (e.g. salt) and inconclusive for others (such processed maize). On the other hand, excise duties on paraffin would push the tax burden to the poor whereas fuel taxes will remain progressive. The results reveal that the pass-through of fuel taxation on poor households is mainly through public transport and via intermediates e.g. probably through cost of food especially for urban households - which was beyond the scope of this paper. Overall, the Uganda tax system comprises of a mixture of progressive and regressive taxes - at goods level. This holds true for the pre-reform and after-reform scenarios.

The results based on the Suits index revealed that progressivity of some taxes offset the regressivity of other taxes – making Uganda's entire tax system progressive prior to the reforms. However, the tax system becomes less progressive with the removal of VAT exemptions of the goods considered in this paper excluding processed maize. Further, removal of exemptions on processed maize, shifts the entire tax system from being progressive to being regressive. While the overall tax system becomes slightly less progressive with the proposed tax proposals, the benefits from public spending accrues greatly to the poorer households. This implies that the poorer households receive back more in public spending than they pay in taxes.

Considering horizontal equity, the results based on the Suits index revealed that the entire tax system is rendered less progressive for female headed households and at rural level as a result of the new tax measures (but maintaining VAT exemptions on processed maize). Similar results were noted for all regions with the exception of the central region. By implication, the tax burden has gender and spatial dimensions, which are always ignored in the formulation of tax policies.

Over the years, the government has retreated on some of its proposed tax measures. This practise has benefited the producers but not the final consumers as the former do not adjust their pricing thereafter the announcement of such measures. The prime examples include paraffin and piped water as discussed in this paper. It also threatens public confidence in government policies. This calls for a more detailed analysis of such measures on tax revenues and their implications prior to being considered in the budget. Future research is also needed to critically evaluate the effectiveness of the current coordination and cooperation between URA and other government bodies, private sector and CSOs.

The results have shown that LST collections remain low. Graduated tax, though it was faced with administrative challenges, incentivised Ugandans to work and local government had a meaningful source of tax revenue – by implication less pressure on the central government budget. Its abolition, prior to 2006 presidential elections, created undesirable social behaviours (e.g. increased engagement in drug and crime activities, alcoholism and idleness, etc) as well as directly constraining service delivery at the local government. This paper calls for the reinstatement of graduated tax to not only generate revenue at local government level but also reduce pressure on the central government budget. This policy reversal will further reduce on the above mentioned undesirable behaviour.

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Table A 1: VAT and excise tax schedules in FY2012/13

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Code	ltem	VAT	import	excise	Code	ltem	VAT	import	excise	code	Items	VAT	import	excise
135	Onions	0	0	0	502	medicines	0	0	0	411	jewelry watches	0.18	0.15	0.1
136	Tomatoes	0	0	0	503	hospital/clinic charges	0	0	0	501	plastic basin	0.18	0	0
137	Cabbages	0	0	0	504	traditional doctors	0	0	0	502	plastic plates tumblers	0.18	0	0
138	Dodo	0	0	0	505	transport - health	0	0	0	503	jerry cans	0.18	0	0
139	Other vegetables	0	0	0	506	others	0	0	0	504	enamel, metallic utensils	0.18	0.15	0
140	Fresh beans	0	0	0	601	sports	0	0	0	505	switches plugs cables	0.18	0.15	0.1
141	Dry beans	0	0	0	602	dry cleaning	0	0	0	506	others and repairs utensils	0	0	0
142	Unshelled groundnuts	0	0	0	603	house maids	0	0	0	601	school fees	0	0	0
143	Shelled groundnuts	0	0	0	604	barber	0	0	0	602	boarding lodging	0	0	0
144	Pounded groundnuts	0	0	0	605	expenses in hotel	0	0	0	603	school uniform	0	0	0
145	Peas	0	0	0						604	books supplies	0	0	0
146	Sim sim	0	0	0						605	Transport	0	0	0
147	Sugar	0.18	0	25						606	other education expenses	0	0	0
148	Coffee	0.18	0.07	0						701	expenses on household functions	0	0	0
149	Теа	0.18	0.07	0						702	insurance premium	0	0	0
150	Salt	0	0.07	0						703	other services	0	0	0
151	Soda	0.18	0	0.13										
152	Beer	0.18	0	0.6										
153	Other alcoholic drinks	0.18	0	0										
154	Other drinks	0	0	0										
155	Cigarettes	0.18	0	0										
156	Other tobacco	0	0	0										
157	food in rest	0	0	0										
158	Soda from rest	0.18	0.15	0.13										
159	Beer from rest	0.18	0.15	0.6										
160	Other juice	0	0	0										
161	Other foods	0	0	0										

Table A 2: PAYE schedule in FY2012/13

2012/13 Schedule		Prior-2012/13 Schedule	
	Rate	UShs	Rate,%
< 235,000	0	< 130,000	0
235,000 - 335,000	10	130,000 – 235,000	10
335,000 - 410,000	20	235,000 - 410,000	20
410,000 - 10,000,000	30	> 410,000	30
> 10,000,000	40		

Table A 3: Distribution of persons in formal employment by PAYE schedule, 2012/13

2012/13 Schedule	%	Pre-2012/13 reform Schedule	%
Below 235,000	52.0	Below 130,000	31.5
235,000 - 335,000	19.0	130,000 - 235,000	20.5
335,000 - 410,000	8.0	235,000 - 410,000	27.0
410,000 - 10,000,000	20.9	>410,000	21.0
>10,000,000	0.1		
	100.0		100.0

Table A 4: Monthly average petroleum products pump prices, UShs

	Date	Petrol	Diesel	Paraffin
2012	Jul	3,640	3,129	2,711
	Aug	3,534	3,066	2,620
	Sep	3,524	3,203	2,603
	Oct	3,583	3,358	2,692
	Nov	3,650	3,398	2,790
	Dec	3,685	3,398	2,808
2013	Jan	3,748	3,441	2,822
	Feb	3,898	3,408	2,803
	Mar	3,855	3,473	2,829
	Apr	3,844	3,419	2,874
	May	3,743	3,285	2,788
	June	3,667	3,166	2,772
	Jul	3,603	3,101	2,774
	Aug	3,575	3,133	2,774
	Sep	3,579	3,144	2,828
	Oct	3,601	3,205	2,839
	Nov	3,610	3,229	2,846
	Dec	3,567	3,189	2,851
2014	Jan	3,539	3,173	2,846
	Feb	3,579	3,185	2,835
	Mar	3,666	3,277	2,836
	Apr	3,678	3,254	2,812
	May	3,660	3,228	2,770

Source: UBoS Statistical Year Book



Figure A 1: Trends in the share of net tax type to GDP, %

Notes: These figures exclude government taxes and tax refunds.

Source: Author's calculation based on URA data and UBoS, Statistical Year Book

ENDNOTES

- 1 Excludes domestic arrears repayment
- 2 Government of Uganda (2013), Uganda Vision 2040
- 3 Tax expenditures are revenue losses attributable to tax provisions that often result from the use of the tax system to promote social goals without incurring direct expenditures, according to the Tax Policy Centre.
- 4 Taxes as part of the social contract between a state and its citizens. That tax payers would like to know that everyone pays their fair share and that the money they hand over to the state is put to good use and delivers a return in form of public services. In doing so, the tax payers are likely to comply with paying taxes and accepting new forms of taxes if they consider the taxes to be legitimate, AfDB 2014, pp65.
- 5 MoFPED (2004), Poverty Eradication Action Plan 2004/5 2007/8.
- 6 This figure reduces to 11.9 percent tax-to-GDP based on the re-based figures.
- 7 Tax effort defines as a share between actual and potential taxto-GDP ratio.
- 8 Government spending through the tax code.
- 9 According to the 2014/15 Budget speech, at least 14 million persons used mobile money services during 2013/14 with a transaction value of UShs 18. 6 trillion (about US\$ 7.5 billion).
- 10 Analysis based on the UNHS data during 2005/6 2012/13 reveals a declining trend in the utilization of public primary schools and a reverse is observed for secondary schools.

- 11 This figure translated into less than 1 percent of households covered in June 2012.
- 12 The authors were not able to get information on households usage mix between diesel and petrol.
- 13 This would require application of general equilibrium model see such studies as Blackman *et al.* (2011).
- 14 The expenditures on fuel and transport are expressed in 2012/13, yet the simulations need to be made as per the FY2014/15 tax proposals. In FY2013/14 there was an increase of UShs50 per litre in the 2012/13 prices. This would imply that between 2012/13 and 2014/15, the fuel taxes increased by UShs100 per litre in the 2012/13 prices.
- 15 Authors assume that all those employers whose private businesses employ more than five employee comply with the statutory PAYE requirement.
- 16 Based on the 2012/13 UNHS, at least 29.3 percent of households in the bottom decile state use firewood and grass for lighting compared to only 3.5 percent for the general population.
- 17 We should also be able to note with concern that a greater share of PAYE follows on formal sector employees.
- 18 Studies on the maize value chains (such as Mbowa et al forthcoming) reveal that margins are higher at the processing stage.

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