

Impact of Fiscal Policy on Poverty and Inequality in Uganda

Fiscal Incidence Analysis Using the UNHS 2016/17

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Abstract

This study analyzes the incidence of public revenues (tax collection) and expenditures (including direct and indirect transfers, indirect subsidies, and in-kind transfers) on the level of poverty and inequality in Uganda, using the internationally recognized methodology developed by the Commitment to Equity institute. The results show that Uganda's fiscal policy is moderately equalizing and lowers the Gini coefficient by 3.2 points. The personal income tax, followed by education in-kind transfers, are the biggest contributors to reducing inequality. Although equalizing, fiscal

policy is poverty-inducing in Uganda. Direct transfers are pro-poor in distribution but are not large enough to counteract the purchasing power reductions from indirect taxes; the poverty headcount ratio increases by 2.3 percentage points. Going forward, the combination of raising additional revenue by broadening the personal income tax base and removing valued-added tax exemptions while using the additional resources to increase the size and coverage of pro-poor direct transfers programs may alleviate poverty and reduce inequality.

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1. Introduction

Poverty in Uganda has fallen substantially over the past 20 years. From 1992 to 2005, the proportion of the population living in poverty declined from 56.4 percent to 31.1 percent. This can be partially traced to a “peace dividend,” or the impact of the restoration of political and economic stability following the conclusion of the Ugandan civil war, which raged from 1980 to 1986. Peace in the Northern region was accompanied by a package of liberalization reforms introduced by the new administration and engendered a positive response from firms and households to stability. Poverty continued to decline at a slower rate during the period 2005-2012, reaching 19.7 percent in 2012 (see Figure 1a). The average rate went down from 2 percent a year (for the period 1992-2005) to 1.5 percent a year (for the period 2005-2012) as pointed out by the latest Uganda Poverty Assessment Report (World Bank 2016), mainly as a result of slower overall economic growth.

The poverty headcount index increased modestly from 19.7 percent of the population in 2012 to 21.4 in 2016. The increase in the poverty headcount index measured at the international poverty line - \$PPP (2011) 1.90 per capita per day - was more noticeable, going from 34.6 to 41.6, indicating a considerable proportion of households clustered on both sides of this line. This represents a reversal of the downward trend observed since the early 2000s. Two factors can help explain this reversal. First, the overall sluggish economic growth observed since 2012; GDP per capita grew only 1.1 percent per year on average between 2012 and 2016 (while between 2005 and 2009 it grew at 4.5 percent per year on average). Secondly, the drought that affected the country for the better part of 2016 and 2017 negatively affected the consumption of rural households, and rural poverty went up.² Poverty in urban areas has remained unchanged since 2009, at a level of around 9 percent, which shows that the purchasing power of urban households has been stagnant for the last decade.

Going forward it seems that higher economic growth will not be enough for poverty reduction as the responsiveness of poverty reduction to growth has declined: poverty-growth elasticity³ fell from -1.24 for 2000 to 2016 to -0.5 for the period 2009 to 2016 (see Figure 1b). The implication is that even if economic growth recovers over the medium term, further poverty reduction will require a stronger focus on inclusive and equalizing policies.

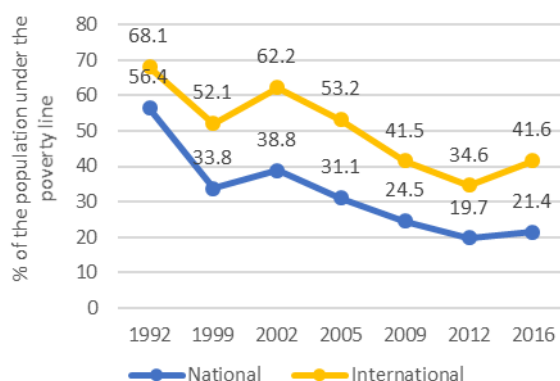
Consumption growth between 2012 and 2016 brought disproportionate increases for the middle class and rich households, contributing to a more uneven distribution of resources. Inequality, as measured by the Gini index, increased from 0.40 in 2012 to 0.43 in 2016 (see Figure 1c). This represents a shift away from the broad-based economic progress observed during the period between 2009 and 2012, when inequality declined. Overall, the country has not been able to make significant progress in reducing consumption inequality for over a decade. While inequality reduction is often pursued for its own sake, it has also been shown that elevated inequality slows economic growth and has negative effects on socio-political stability (Berg and Ostry, 2011; Ostry, Berg and Tsangarides 2014).

² This is linked to the fact that many of the rural poor depend on their agricultural production for their own subsistence.

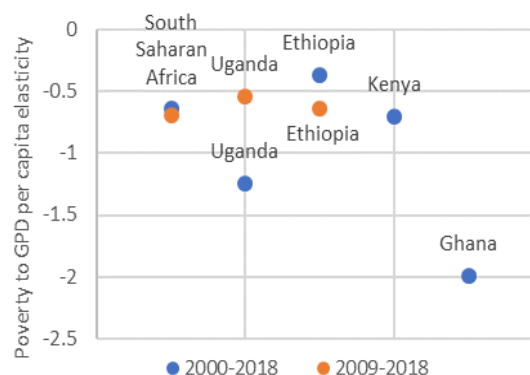
³ The elasticity of the poverty headcount rate under the international poverty line to GDP per capita growth.

Figure 1. Poverty and inequality trends in Uganda

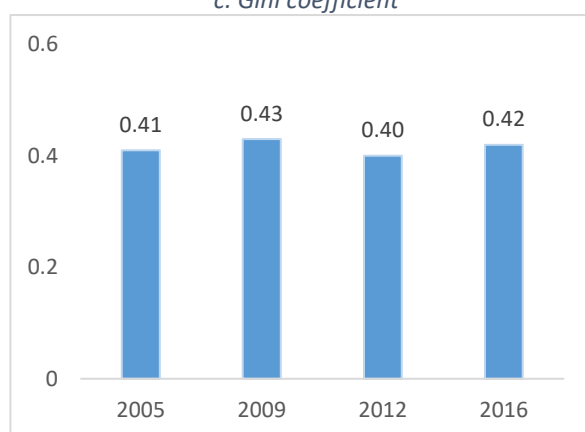
a. Poverty headcount rate



b. Poverty to GDP per capita elasticity



c. Gini coefficient



Source: Own calculations based on UNHS 2016/17.

Note: a) International poverty rate is calculated at the \$1.90 a day (in 2011 PPP \$) poverty line.

Considering these recent trends, it is crucial to understand how Uganda's fiscal system affects poverty and inequality. Note also that reducing poverty and inequality are two foundational pillars of Uganda's Second National Development Plan covering the period in between 2015 and 2020 (NDPII). Understanding of how fiscal policy is (or is not) expanding opportunities and accelerating poverty reduction is critical for budget deliberations also. This report analyzes the incidence of both public revenues (tax collection) and expenditures (including direct and indirect transfers, indirect subsidies and in-kind transfers) on the level of poverty and inequality in Uganda, using the internationally recognized methodology developed by the Commitment to Equity (CEQ) institute.⁴ It builds on the previous fiscal incidence exercise done for Uganda (Jellema et al. 2017) using the 2016/17 Uganda National Household Survey and fiscal data from the same year.

The exercise estimates both the combined impact of taxes and expenditure as well as the marginal contributions of individual fiscal interventions. Considering fiscal policy as a whole – both revenues and

⁴ For details on the methodology, please see Lustig (2018).

expenditures – is an important aspect of the analysis, given that policy decisions should be guided by net fiscal incidence. Inchauste and Lustig (2017) point out that a particular measure that might be rejected *in isolation* based on equity considerations (such as the increase in the value added tax rates), may be reconsidered if the transfers that the resulting revenues are financing have a large equalizing impact. The marginal contributions of each fiscal intervention presented are therefore estimated in the context of all the other fiscal activity. The use of an internationally consistent methodology allows the comparison of Uganda’s results to those of other countries in the Sub-Saharan Africa region: Ethiopia, Tanzania, South Africa, Ghana and Kenya.⁵

In addition to development targets summarized in the NDP II, Uganda has re-committed to increasing internal revenue mobilization. The country has one of the lowest ratios of revenue-to-GDP in the region. In 2015/16, the 13 percent ratio was lower than the average of the 21 African countries by 5.1 percentage points according to the OECD (2018).⁶ Conscious of the need to increase tax revenue, the Government of Uganda is currently preparing a new medium-term revenue mobilization strategy (World Bank, 2018b). The fiscal incidence analysis presented here can determine whether measures to increase revenues are consistent with growth and equity objectives.

Uganda faces many challenges to the efficiency, allocation and level of current public expenditure. Thus, the need for more revenues (including from taxes) will remain in the medium term. Net enrollment rates in primary education have been falling since 2005, for both boys and girls, although they are still higher than the regional average. Net enrollment in secondary education has improved but at 27.8 percent remains much lower than in the region. In addition, there are major concerns in terms of the quality of both primary and secondary education. Around 29 percent of children under the age of five are stunted, a measure of chronic malnutrition. Moreover, only 38 percent of Ugandan households have access to electricity and around 40 percent have access to improved sanitation. These challenges, underlined in World Bank (2019a), are aggravated by the high growth rate of the population, which, at 3.3 percent for 2017, stresses the systems for basic service delivery, particularly education and health.

It is important to point out some of the caveats of the methodology used. Firstly, we do not capture all items in Uganda’s public spending or revenue collections, such as the large investments in infrastructure, expenditure on national security (on the spending side) or the corporate income tax (on the revenue side), despite that these fiscal instruments provide indirect benefits (or detriments) for households.⁷ Secondly, as Inchauste and Lustig (2017) point out, the approach does not provide information on the trade-off between long-term human capital spending - which creates higher *future* levels of human capital (for example, a better educated and healthier, more productive citizenry) - and short-term spending on programs that bring immediate poverty relief (such as conditional cash transfers).

⁵ The corresponding publications for these analyses are: Hill et al. (2017) for Ethiopia, Younger et al. (2017) for Ghana, Inchauste et al. (2017) for South Africa, Younger et al. (2016) for Tanzania, and World Bank (2018a) for Kenya.

⁶ <http://www.oecd.org/tax/tax-policy/revenue-statistics-in-africa-2617653x.htm>

⁷ Identifying the individual beneficiaries of general infrastructure spending as well as the individuals who might bear the burden of a corporate income tax is difficult with only a standard household budget survey. In addition, investment in infrastructure in the current fiscal year will also provide benefits in the future that are impossible to allocate to the households identified in the household survey.

Fiscal policy is poverty inducing in Uganda in 2016/17. The poverty headcount index increases by approximately 2.2 percentage points in 2016/17 from pre-fiscal to post-fiscal income (excluding in-kind transfers). Direct transfers in Uganda provide meaningful benefits to those who receive them. However, the magnitude of transfer spending overall is low such that direct transfers received together subsidy benefits captured are, for most households, not enough to compensate for household indirect tax payments, causing poverty to increase slightly.

The Ugandan fiscal system, including all taxes and all transfers (including in-kind), reduces inequality by around 3 Gini points in both 2016/17 and 2012/13. The largest contributor to this equalizing effect in 2016/17 is the PAYE personal income tax followed by the education and health in-kind transfers. Ugandan social protection programs (including direct transfers) are progressive and concentrated among the poorest households but are small and have limited coverage. Indirect subsidies related to water services as well as tertiary and technical education transfers are regressive and would, on their own, increase inequality in Uganda.

Table 1. Inequality and Poverty Before and After Fiscal Policy

| Income Concept | 2012/13 | | 2016/17 | |
|-----------------------------|---------|-------------------|---------|-------------------|
| | Gini | Poverty Headcount | Gini | Poverty Headcount |
| Market income plus Pensions | 0.41 | 19.8% | 0.43 | 21.39% |
| Net Market Income | 0.40 | 19.8% | 0.42 | 21.44% |
| Disposable Income | 0.40 | 19.7% | 0.42 | 21.42% |
| Consumable Income | 0.40 | 19.9% | 0.41 | 23.70% |
| Final Income | 0.38 | --- | 0.40 | --- |

Note: Poverty headcount calculations use the national poverty line.

The rest of the report is organized as follows. Section 2 provides an overview of the fiscal structure of Uganda, describing both the main taxes and transfers in the country, and the CEQ methodology and the allocation assumptions are presented in Section 3. The poverty and inequality results are presented in Section 4, and the progressivity and marginal contribution of each fiscal instrument is discussed in Section 5. Section 6 compares the 2012/13 and 2016/17 fiscal incidence analyses. Finally, Section 7 concludes and lists some policy considerations.

2. Fiscal Structure

This section presents a categorization of tax and other revenue collections and public expenditures in Uganda for the fiscal year 2016/17 –the UNHS survey enumeration year – and identifies the fiscal policy items included in the fiscal incidence analysis.

2.1. Tax Revenues

Total tax revenue for the year 2016/17 was 13.7 percent of GDP (see Table 1), a slight increase from the 13 percent observed in 2015/16 and the highest ratio reported since 2000. While higher by approximately two percentage points than Ethiopia, Uganda's tax share is lower than in Ghana, Tanzania and Kenya's (at 14.5 and 15.6, and 16.9 percent of GDP, respectively) and, much lower than South Africa's (at 25.3 percent of GDP), as shown in Figure 2.⁸

Table 2. Uganda Government Revenues, 2016/17⁹

| | UGX (billions) | % of GDP | Included in Analysis (Yes/No) |
|---------------------------------|-------------------|--------------|----------------------------------|
| Total Revenue and Grants | 13,897 | 15.2% | ... |
| Revenue | 12,947 | 14.2% | ... |
| Tax Revenue | 12,593 | 13.7% | ... |
| Direct taxes <i>of which</i> | 4,279 | 4.7% | ... |
| Personal Income Tax | 2,115 | 2.3% | Yes |
| Corporate Income Tax | 894 | 1.0% | No |
| Indirect Taxes <i>of which</i> | 8,314 | 9.1% | ... |
| VAT | 3,904 | 4.3% | Yes |
| Excise Taxes | 2,669 | 2.9% | Yes |
| Customs Duties | 1,432 | 1.6% | No |
| Non-tax Revenue | 354 | 0.4% | ... |
| Grants | 950 | 1.0% | ... |

Source: Uganda Annual Budget Performance Report 2016/17.

The tax system in Uganda is administered by the central government, through the Uganda Revenue Authority, and by local government regimes, and comprises both direct and indirect taxes. There are no social contributions funding social welfare or social security, or unemployment insurance (for example).

2.2. Indirect taxes

Over two-thirds of total tax revenue is collected through indirect taxes. Indirect taxes account for approximately 9.1 percent of GDP – a similar proportion as in Tanzania and South Africa (Figure 2), and greater than Kenya, Ghana and Ethiopia given the size of their economies (see Figure 3a). While *indirect taxes* in Uganda are of a similar proportion of GDP as South Africa, South Africa compensates for this with significant social protection expenditures, thereby combatting undesirable impacts on poverty.

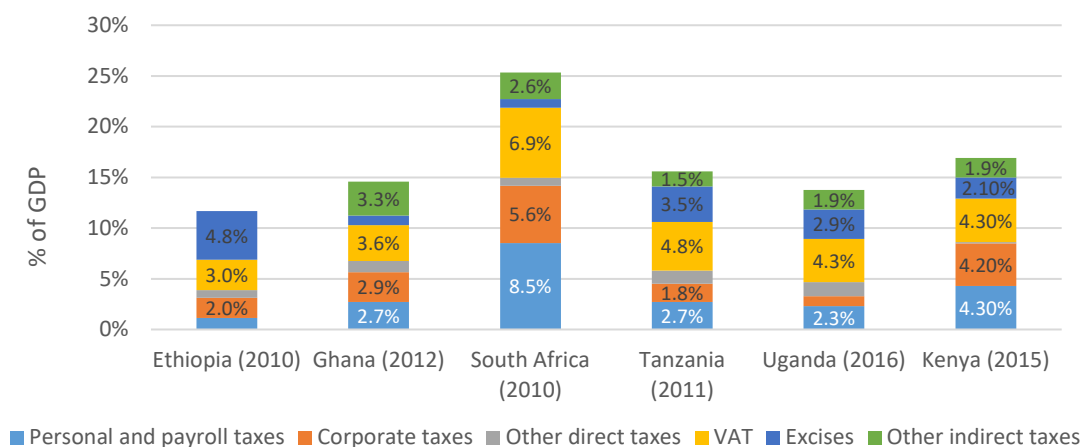
Indirect taxes include value added tax (VAT), excise taxes (mainly tobacco and alcohol) and custom duties (mainly petrol). The VAT on non-excisable goods and services is 18 percent. Goods and services such as

⁸ These are the countries for which there is a comparable CEQ fiscal incidence analysis.

⁹ These numbers coincide with the IMF Article IV – Feb 2019 figures (IMF, 2019).

unprocessed foods, supply of solar power, machinery or medical goods, among others, are exempt from VAT. Rates on excise taxes and custom duties vary depending on the good or service¹⁰. VAT collections in Uganda alone represent 4.3 percent of GDP, almost a third of total tax revenue and almost as much as direct taxes, at 4.7 percent (Figure 2).

Figure 2. Tax revenue in Uganda



Source: CEQ Institute database, World Bank WDI for GDP 2011 PPP per capita numbers. For Kenya, World Bank (2018a)

Note: The data for Ethiopia corresponds to 2010, for Ghana to 2012, for South Africa to 2010, for Tanzania to 2011, and for Kenya to 2015.

2.3. Direct taxes

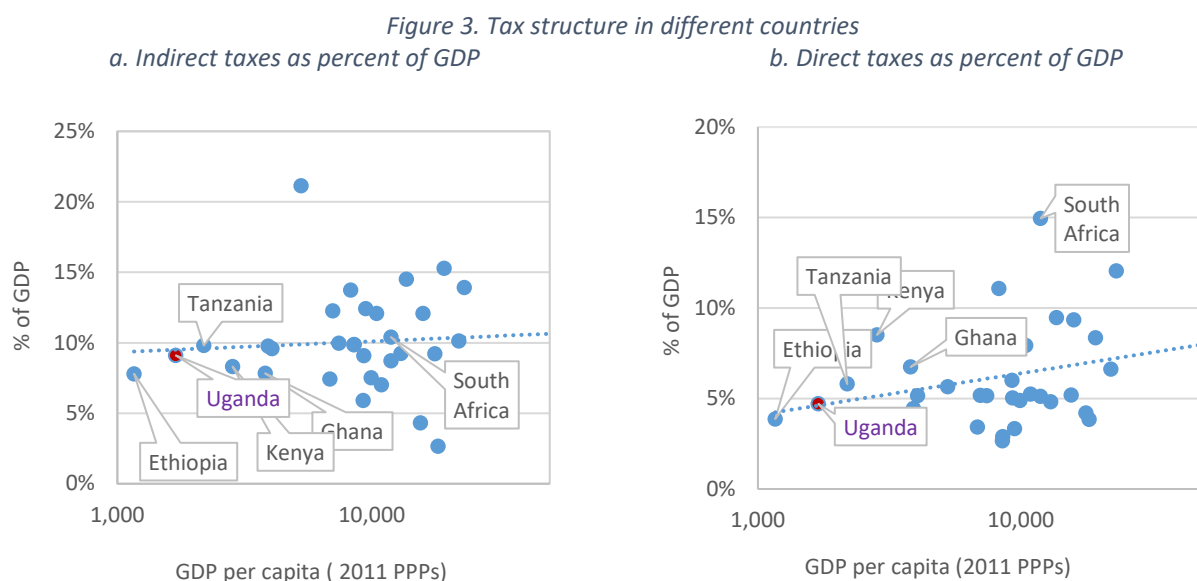
Revenue from direct taxes (when measured relative to the economy's size) is higher in Uganda than in Ethiopia, but lower than in Tanzania, Kenya, Ghana and South Africa (Figure 3b). Direct taxes are mostly levied on individual income and corporate income. PAYE is the main direct tax revenue source, accounting for twice as much as corporate tax revenue (Table 1). Uganda's revenue from corporate income taxes (as a share of GDP) is notably lower than in all other countries appearing in Figure 2, attributable to costly exemptions and multiple deductions that lower the effective tax rate.

The personal income tax, pay as you earn (PAYE), is collected on a monthly basis and exempts individuals making less than 235,000 Ugandan shillings (UGX) per month,¹¹ employees of the armed forces and judicial services, pension incomes and allowances of members of parliament. Rates range from 10 to 30

¹⁰ For instance, cigarettes are charged an excise duty of UGX 55,000 per 1,000 sticks of locally manufactured soft caps (or UGX 80,000 per 1,000 sticks of hinge rids) and a VAT of 18 percent; whereas beer is charged an excise duty of 60 percent of the ex-factory price per liter (or UGX 1,680, if the latter is higher), and also a VAT of 18 percent (see URA, 2017 for a full list of tax rates).

¹¹ About 10 percent of Uganda's per capita GDP.

percent. Corporate tax – at a 30 percent rate – is levied on profits¹² and is mostly payable by resident limited companies and cooperatives.



Source: CEQ Institute database, World Bank WDI for GDP 2011 PPP per capita numbers.

Note: The data for Ethiopia corresponds to 2010, for Ghana to 2012, for South Africa to 2010, for Tanzania to 2011, for Kenya 2015.

In the past 15 years, major reforms have been implemented to increase the revenue from the VAT and PAYE taxes, such as an increase of the standard VAT rate from 17 percent to 18 percent in 2005 (SEATINI, 2017). Even so, the fiscal authority has consistently missed tax revenue targets by 0.5 percent of GDP in the last few years (IMF, 2019).

2.4. Expenditures

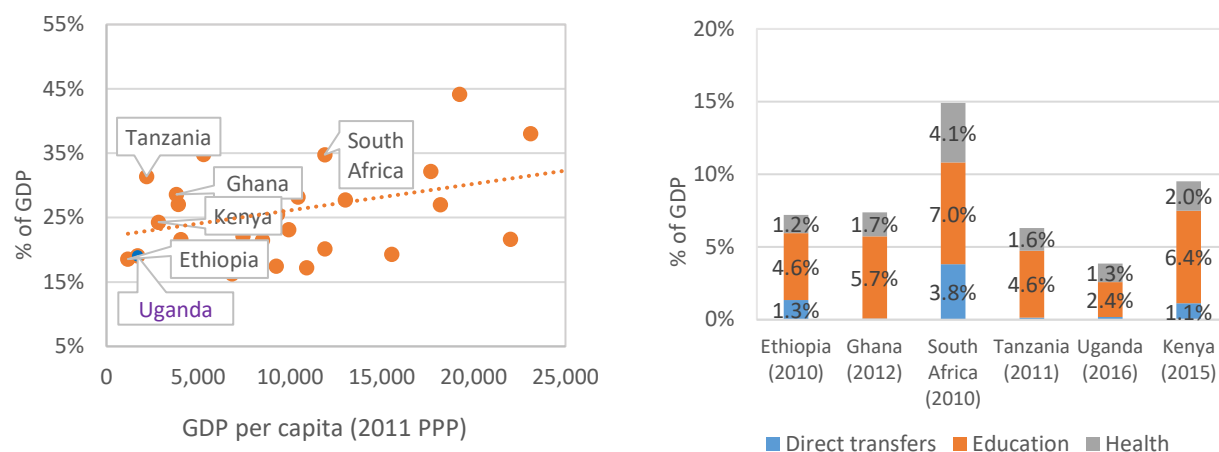
Public expenditures in Uganda reached 19 percent of GDP in fiscal year 2016/17, a slight decline from 20.1 percent in 2015/16. This share is slightly higher than that of Ethiopia (18.6 percent) but considerably lower than that of Tanzania (31.4 percent), Kenya (24.3 percent), Ghana (28.4 percent) and South Africa (34.5 percent), as seen in Figure 4a. Uganda's levels of public expenditure are constrained by low levels of tax revenue.

The fiscal incidence analysis in this report covers three types of expenditures in addition to the public pension system: i) direct transfers, ii) indirect subsidies, and iii) in-kind transfers. The direct transfers consist mainly of social protection programs, while in-kind transfers refer to education and health expenditures. Together direct transfers and in-kind transfers comprise social spending and represent 22 percent of total expenditure. Indirect subsidies include water and agricultural inputs.

¹² Dividends of companies controlled by other resident companies are exempt.

Consistent with the overall expenditure figures, Uganda's share of social spending is lowest among the benchmark group. At 3.9 percent of GDP (or 4.2 percent if we include public pensions), the country spends less on direct transfers, education, and health than Tanzania (6.3 percent), Ghana (7.4 percent) and Kenya (9.5 percent), a result driven by low education expenditure (see Figure 4a). Social spending is also lower than Ethiopia (at 7.2 percent), driven by education and in direct transfers.

Figure 4. Public expenditure in different countries
a. Public expenditure as percent of GDP
b. Composition of social public expenditure as percent of GDP



Source: CEQ Institute database, World Bank WDI for GDP 2011 PPP per capita numbers. For Kenya, the source is World Bank (2018a), and the value reported for direct transfers corresponds to social protection expenditure of the national government.

Note: The data for Ethiopia corresponds to 2010, for Ghana to 2012, for South Africa to 2010, for Tanzania to 2011, for Kenya 2015/16.

2.4.1. Public Pension System

Uganda's public pension system was established in 1946 to provide retirement benefits for public sector servants and includes one scheme for the Armed Forces and one for the Civil Service. The first covers all military officials and the second includes all civil servants: central government officials, police and prison officers, members of the judiciary, doctors, primary and secondary school teachers. There are 45,200 beneficiaries out of a total of 274,200 enrolled individuals. Beneficiaries receive payments (part lump sum on retirement and an annual pension) based on length of service and salary during service. Survivors receive benefits in case of death before retirement. On average, the annual pension is about 3,460,400 UGX, or 1.34 times the GDP per capita (World Bank, 2019b). There were no public pension contributions in fiscal year 2016/17; pension transfers are mainly funded by general government revenues.

2.4.2. Direct Transfers

The social programs considered in this report are administered by either the Ministry of Gender, Labor and Social Development (Uganda Women's Entrepreneurship Programme -UWEP-, the Senior Citizen's Grant -SCG-, and the Youth Livelihood Programme -YLP-) or the Office of the Prime Minister (the Northern Uganda Social Action Fund -NUSAF-). In total, expenditure on these programs at approximately 179 billion Ugandan shillings accounted for less than 0.2 percent of GDP in 2016/17 according to the Ministry of Finance, Planning and Economic Development's Annual Budget Performance Report (MoF, 2017).

- The Uganda Women's Entrepreneurship Programme (UWEP): UWEP provides support in the form of soft loans and skills training to groups of women entrepreneurs. The primary beneficiaries targeted by the program are women between 18 and 65 years old. Women with disabilities, victims of gender-based violence (GBV), women with HIV and those living in hard-to-reach areas are encouraged to apply (Ministry of Gender, Labor and Social Development, 2016). UWEP benefitted around 29,500 women in all regions of the country in 2016/17 (MoF, 2017).
- Senior Citizens Grant (SCG): This program is part of the Social Assistance Grants for Empowerment (SAGE) program.¹³ SCG provides a universal transfer of 25,000 UGX every two months to those individuals aged 65 and over (or 60 and over in Karamoja) (IPCIG, 2017). The program was created with the aim of providing a minimum level of income security to the most vulnerable portion of the population. The GoU estimates that the program benefitted around 149,000 individuals in 2015/16 (MoF, 2017).
- Youth Livelihood Programme (YLP): According to the Ministry of Gender, Labor and Social Development (2018), the YLP program provides coaching and skills training to groups of unemployed youth between 18 and 30 years old since 2014. YLP also offers soft loans for income generating activities. Specific vulnerable groups are targeted such as: drop-outs from school and training institutions, those without any formal education, single-parent youth, the disabled, those living with HIV/AIDS, and those that completed secondary or tertiary education but are unemployed. The program reached around 38,500 individuals in 2015/16 (MoF, 2017).
- Northern Uganda Social Action Fund (NUSAF): This fund was established to support individuals affected by the war in Northern Uganda. NUSAF provides livelihood support to vulnerable persons through the labor-intensive Public Works Programme (PWP), which includes cash transfers, and the Household Income Support Programme (HISP), which finances income-generating activities (Jellema et al., 2017). Currently NUSAF is in its third phase, which started in 2016 and will finish in 2020. In 2015/16 it had close to 47,000 beneficiaries.

¹³ Previously, SAGE also included the Vulnerable Families Grant program, no longer in place in 2016/17.

2.4.3. Indirect Subsidies

- **Water:** Ugandan households receive indirect subsidies in the form of water infrastructure investment contributions. Tariffs in urban areas are set to cover operating and maintenance costs, so consumption of water in urban areas is only subsidized indirectly by lowering the investment cost component that would otherwise have to be recovered through higher tariffs. In the case of rural areas, the water supply is directly subsidized from the national budget, which funds part of the operating costs of water delivery. These data come from the Annual Budget Performance Report 2016/17 (MoF 2017) and the Uganda Water and Environment Sector Performance Report 2017 (MoWE 2017).
- **Agricultural Inputs:** While the Government of Uganda (GoU) provides a variety of agricultural services to rural households across the country, the core of its agricultural program is the provision of farming inputs (mainly seeds) to farmers. This is primarily implemented by the Operation Wealth Creation initiative, a Presidential program created in 2013 to distribute subsidized inputs by the military forces. This function was formerly performed by the National Agricultural Advisory Services (NAADS) program that operated under the Ministry of Agriculture. Extension services are also provided at the local level (district) under the guidance of the Ministry's Directorate for Extension, recently created in 2016, but the scope of the program is rather limited (World Bank, 2018b). The data included in this analysis come from the Ministry of Finance, Planning and Economic Development's Annual Budget Performance Report, MoF (2017).

Table 3. Uganda Government Expenditures, 2016/7

| | UGX (billions) | % of GDP | Included in Analysis (Yes/No) |
|--|-------------------|-------------|-------------------------------------|
| Total Expenditure (expenditure and net lending) | 17,437 | 19.0% | ... |
| Defense Spending | 1,540 | 1.7% | No |
| Social Spending | 3,854 | 4.2% | ... |
| Social Protection | 491 | 0.6% | ... |
| Social Assistance <i>of which</i> | 174 | 0.2% | ... |
| Conditional or Unconditional Cash Transfers | 174 | 0.2% | Yes |
| Social Insurance <i>of which</i> | 353 | 0.4% | ... |
| Pensions | 353 | 0.4% | Yes |
| Education <i>of which</i> | 2,197 | 2.4% | ... |
| Pre-Primary and Primary | 1,200 | 1.3% | Yes |
| Secondary | 350 | 0.4% | Yes |
| Tertiary | 448 | 0.5% | Yes |
| Other | 200 | 0.2% | No |
| Health <i>of which</i> | 1,167 | 1.3% | ... |
| Outpatient Services | 8 | 0.0% | Yes |
| Hospital Services | 223 | 0.2% | Yes |
| Public Health Services | 404 | 0.4% | Yes |

| | | | |
|---------------------------|--------|-------|-----|
| Subsidies of which | 528 | 0.6% | ... |
| Water | 254 | 0.3% | Yes |
| Inputs for Agriculture | 88 | 0.1% | Yes |
| Other Government Spending | 11,515 | 12.5% | No |

Source: International Monetary Fund; Uganda Annual Budget Performance Report 2016/17; Ministry of Education and Sports (2017)

2.4.4. In-kind Transfers

- **Education:** Education expenditure includes recurrent wage and recurrent non-wage and development funding for education and represents the largest budgetary allocation of the expenditures covered here. Uganda eliminated primary schooling fees in 1997 (mainly in public schools) under the Universal Primary Education (UPE) policy. Ten years later, it attempted to do the same for secondary schooling fees under the Universal Secondary Education (USE) initiative which, in addition to eliminating fees in public schools, adopted a public-private-partnership with capitation grants to selected private schools (Wodon, 2016).

In 2016/17, Uganda spent around 2.4 percent of GDP on education. Expenditure in pre-primary and primary schools totaled around 1,200 billion UGX, or about 50 percent of the total education sector budget or 1.3 percent of the GDP, with approximately 8.7 million students enrolled in 2016/17. The shares of the total sector budget for secondary and tertiary education are much lower at approximately 16 and 20 percent, respectively. Approximately 1.4 million students and 87,000 students are enrolled in secondary and tertiary education (respectively), which indicates that tertiary education is a very expensive proposition in Uganda; while secondary education enrolls over 16 times more students as tertiary, it receives a budget allocation that is equivalent to only 80 percent (approximately) of the tertiary education budget allocation. These data come from the Ministry of Finance, Planning and Economic Development's Annual Budget Performance Report (MoF, 2017) and the Uganda Ministry of Education and Sports' Sector Annual Performance Report (Ministry of Education and Sports, 2017).

- **Health:** Health expenditure in 2016/17 reached 1.3 percent of GDP, and mainly includes expenditure in public primary health care and hospitals, which provide basic free health care services to the population. This expenditure mainly takes the form of grants to local governments, which include payments of wages to health workers, funding for service delivery operations, and construction and rehabilitation of health facilities (Jellema et al., 2017). Primary health care expenditure was close to 50 percent of total health expenditure and includes recurrent grants to local governments and medicines, while public hospitals received an allocation of 33 percent, including medicines. These data come from the Ministry of Finance, Planning and Economic Development's Annual Budget Performance Report (MoF, 2017) and the Ministry of Health Annual Sector Report 2016/17 (MoH, 2017).

3. Methodology and Data

3.1. Data

The UNHS survey is used by the GoU to monitor the well-being of the population. The Uganda Bureau of Statistics (UBOS) has conducted the survey every three to four years since the 1990s, providing a series of comparable data stretching more than 20 years. The last UNHS survey was conducted between July 2016 and June 2017, collecting data from around 15,000 households in all 112 existing districts of Uganda at the time. The UNHS 2016/17 is representative at the national, rural-urban, regional and sub-regional level, and gathers information on the socio-economic characteristics of the household (including income and consumption) and its members (including educational attainment, health status and use of services, etc.). Thus, it is possible to allocate all fiscal interventions for each household in the survey, as explained in detail in the next sections.

3.2. Summary of CEQ Methodology¹⁴

The CEQ Assessment takes specific fiscal policy elements, programs, expenditures, or revenue collections and allocates them to individuals and households appearing in the UNHS 2016/17. Once the allocations are made, analysis is done to calculate different measures of poverty and impoverishment, inequality and progressiveness, and the amount of redistribution accomplished on measures of income that exclude (“pre-fiscal”) and include (“post-fiscal”) these fiscal policy elements. Figure 5 summarizes the construction of these income concepts.

In the case of Uganda, we start with the construction of Disposable Income, which we assume is equal to the total consumption expenditure – including the implied value of any auto-production/auto-consumption and the imputed value of rent for owner occupied housing. We then work “backwards” from Disposable Income to calculate Net Market Income, Market Income plus pensions, and Market Income, as follows:

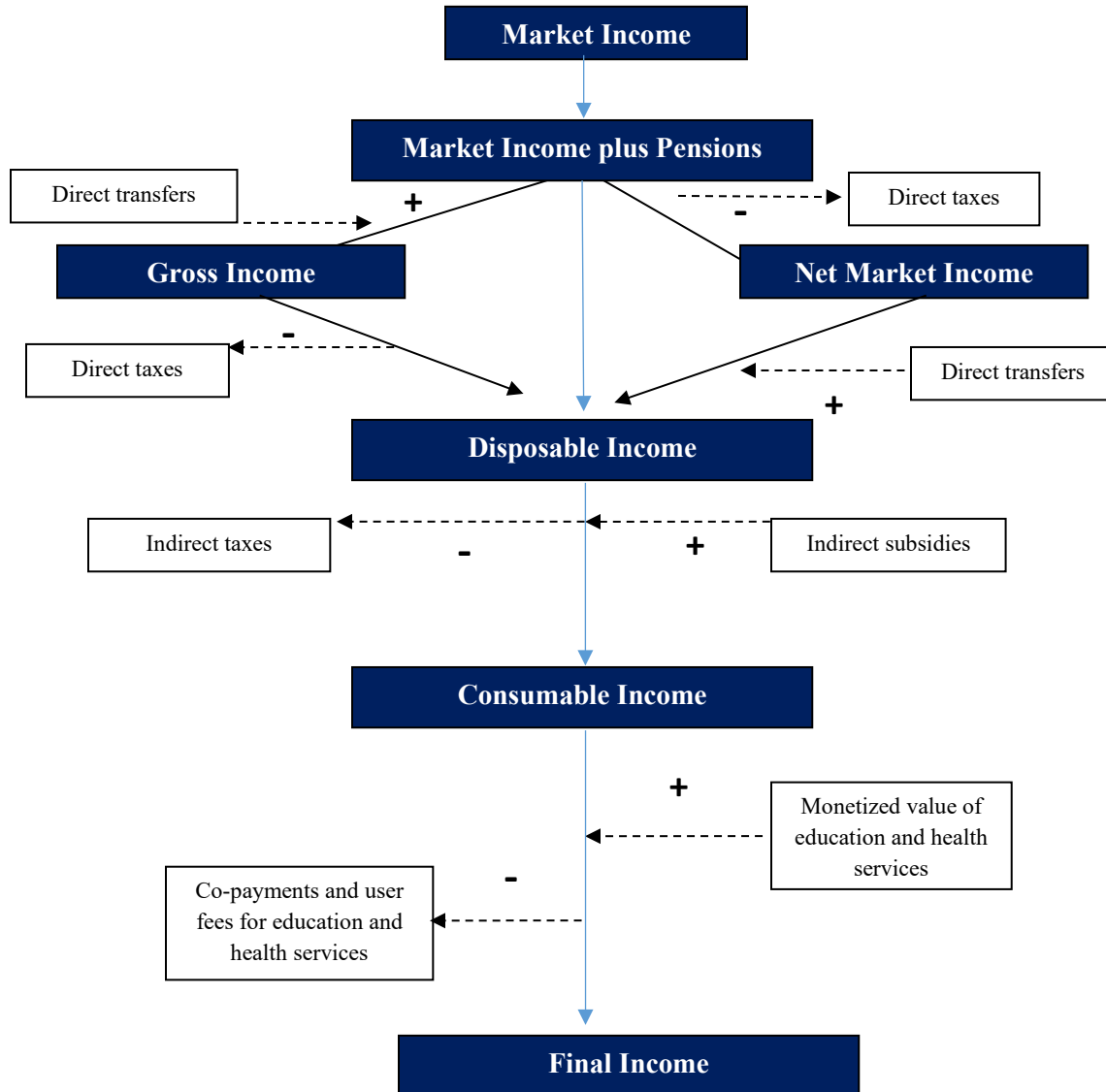
- Net Market Income: direct transfers are subtracted from Disposable Income, in this specific case, SAGE, NUSAF, UWEP and YLP transfers.
- Market Income plus pensions: direct taxes are added to Net Market Income, namely imputed Personal Income Tax.
- Market Income: pension income is subtracted from Market Income plus Pensions.

We work “forwards” from Disposable Income to calculate Consumable Income, and Final Income, as follows:

- Consumable Income: water and agricultural subsidies are added to Disposable Income, and indirect taxes are subtracted, namely VAT, the petroleum duty and other excise taxes.
- Final Income: in-kind health and education benefits are added to Consumable Income.

¹⁴ For a more detailed description of the methodology, please see Lustig (2017).

Figure 5. CEQ Income Concepts and Fiscal Policy Elements



3.3. Baseline Scenario

The CEQ methodology allows for two alternative treatments of the public contributory pension system: “Public Contributory Pensions as Deferred Income” (PDI), or “Public Contributory Pensions as Government Transfer” (PGT). In the former, incomes from and contributions to the public contributory pension system are not part of fiscal policy. In the latter, contributions to the public contributory pension system are treated as a direct tax on incomes and incomes from the system are treated as a transfer.

Under the PGT scenario, individuals who were high wage earners during their productive years could in their retirement years accumulate significant retirement income from the public contributory pension

system. Those same individuals could be measured as poor at market income, when pensions are not included.

These individuals would be, in a sense, “false poor” as their most likely outcome (in retirement) without a public contributory pension system would be an income level (in retirement) that depends on the accumulated earnings on assets held in privately arranged retirement accounts. The creation of this “false poor” population would also automatically cause an overestimate of the redistributive impact of fiscal policy.¹⁵

Therefore, the *baseline results* (discussed below) are based on the PDI treatment of the Ugandan public contributory pension system. Nonetheless, throughout the report, we also present the results produced under the PGT treatment and overall, the results are very similar. Market Income plus Pensions is thus our baseline “pre-fiscal” income (income prior to any government intervention), and pensions are not included in the list of fiscal instruments.

3.4. Allocating Assumptions

3.4.1. Direct Taxes

Households who are PAYE-liable are identified directly in the UNHS consumption expenditures module as households that reported paying income tax. PAYE amounts paid (as reported in the consumption module) were used to generate shares of total PAYE revenues contributed by UNHS households. The amount of PAYE allocated in the survey was generated by first scaling total PAYE collections in administrative and budget reporting such that the ratio of total PAYE revenues in administrative records to National Accounts (NA) Household Final Consumption Expenditure was equivalent to the ratio of PAYE collected from UNHS households to total UNHS Consumption Expenditures. The PAYE burden for each household was then determined by applying each household’s share to the scaled PAYE amount.

3.4.2. Direct Transfers

The SCG and NUSAF programs provide direct cash transfers to eligible individuals; whereas UWEP and YLP provide soft loans to qualifying *groups*. The UNHS does not allow direct identification of beneficiaries for any of these programs. Instead, we use the program reports discussed in section 2.2.2 (from the Ugandan executing agencies as well as multilateral development agencies) to understand eligibility, coverage, and benefit levels per region and to parameterize eligibility and generate transfer-eligible populations within the UNHS.

For SCG, we identify eligible households as those that include an individual over 65 years of age not receiving an official government pension. We calculate a per capita subsidy amount from the government

¹⁵ For a more detailed discussion, see the CEQ Handbook, Lustig (2018, p21).

budget divided by the number of beneficiaries, and we randomly allocate this to eligible households until we reach (approximately) the (scaled) total number of beneficiaries covered by both government and donor disbursements. We assume that the per capita subsidy provided by government and donor programs is the same.

For UWEP, YLP and NUSAF we randomly allocate program-specific benefits to program-specific eligible household pools until we reach (approximately) the average number of beneficiaries and benefits delivered annually and per region according to program reporting.

Given that the YLP and UWEP programs provide loans rather than transfers, and in the absence of further information, we assume that the programs provide a benefit of foregone loan interest payments, at 25 percent of the amount of the principal disbursement.

3.4.3. Indirect Taxes

- Excise and petrol duty: It is not possible to directly identify the excise and petrol duty tax amounts paid, so instead we impute, for each purchased item, the share of the item's value that is an excise charge using *effective* rates of excise rather than statutory rates. The effective rates are calculated as follows: from the survey we generate a total consumption amount for each excisable good which is recorded in the survey. We also generate the share of total household consumption in the survey comprised by each good. We apply those shares of consumption to the National Accounts Final Household Consumption amount to estimate a "national accounts" total consumption amount for each excise good. We then divide the excise revenue from each good by the consumption estimate to determine an effective rate for each good.
- Value-added tax (VAT): Similar to the excise duties described above, we impute the amount of VAT in each purchase recorded in the UNHS by estimating the share of the good or service's price that is a VAT charge. This imputation assumes an effective (rather than statutory) rate of VAT applies to each purchase. For goods and services that are exempt in the Ugandan VAT schedule, there may still be "embedded" VAT in the final purchase price when exempt producers pay non-refundable VAT on inputs that is then passed through to the final price of that producer's item. To estimate the potential embedded VAT in the price of VAT-exempt goods and services, we make use of an Input-Output (IO) model of the production side of the Uganda economy. For more details, please consult Harris et. al

(2018).¹⁶ We assume a factor of informality on goods that incur VAT of 0.5¹⁷, estimated exogenously to the model.¹⁸

3.4.4. Water Subsidies

Water users are identified as those households in the survey that report using a publicly provided water source – that is, households that receive either piped water into the yard or dwelling or have access to public taps or a public borehole. Water tariffs are not directly subsidized, but the Rural and Urban Water Supply program provides (to the utility operators) a fixed, on-budget sum annually that is meant to cover network maintenance, investment, and upgrading costs. We assume that without this budget support, utility operators would raise prices so that total revenues collected privately covered these costs as well. For these programs, we allocate the total (scaled) expenditure on these programs according to the urban and rural water users' share of reported urban and rural water consumption, respectively.

3.4.5. Agricultural Input Subsidy

The survey does not identify recipients of free agricultural inputs. We turn to Uganda's National Service Delivery Survey (NSDS) 2015 to generate a propensity score for acquiring subsidized inputs conditional on being a small-scale crop farmer or livestock farmer. We predict that same propensity score within a similar pool of UNHS households and select UNHS households with the highest propensity scores until the proportion of subsidy beneficiaries in the UNHS (out of the pool of small-scale farming households in the UNHS) matches the proportion of subsidy beneficiaries in the NSDS (out of the agricultural-input-purchasing pool of households in the NSDS). Given the technique we use to allocate agricultural input expenditures, this allocation can be described as the expected allocation of expected benefits available under the inputs program. We then divide the total scaled expenditure on the program by the total number of simulated recipients to get a per-household subsidy.

3.4.6. In-kind Subsidies

Uganda's expenditures on education and health are allocated to those households that report using the public education or public health care service system (respectively). The subsidy amount imputed was obtained by scaling the in-kind spending divided by the total number of UNHS users in order to get a "per student" or "per patient" cost. An individual's user fee is then subtracted from this average cost amount

¹⁶ The approach also distinguishes between domestic and imported products, as the price of imported inputs is not affected by unrecoverable *domestic* input VAT. This method is not directly comparable to the approach used in 2012/13, in the following ways: in 2012/13 indirect effects of VAT were not included in the calculation, VAT on imports was excluded, and it was assumed that 50 percent of domestic VAT comes from households, and the rest from NGOs and exempt producers.

¹⁷ This is in contrast to the standard Harris et. al (2018) methodology which estimates an endogenous rate of informality.

¹⁸ We assume this level of informality, as it is consistent with the fact that informality accounts for about one half of the national output (https://www.citiesalliance.org/sites/default/files/PB_Uganda_WEB.pdf) and the proportion of informal firms reaches 45 percent (UBOS 2018).

to determine the subsidy allocated to the directly-identified users. In the case of education, a 47 000 Ugandan shilling amount is allocated to all private secondary school students that do not report paying school fees, and this amount is subtracted from the total budget amount allocated to public school students.

- User fees: To calculate in-kind subsidies, we subtract compulsory user fees (as follows) from the subsidy amount provided by the government.
 - *Education*: We consider school fees, registration fees, exam fees, and the cost of uniform and books to be compulsory, and boarding fees, transport, day care expenses, and other education expenses to be voluntary. In Uganda, however, there are two types of public schools. The universal secondary education (USE) schools do not charge fees. Other public schools are allowed to charge fees, and we have assumed that these schools are supplementing their operating budgets with fees collected, and therefore providing a higher quality of education. We therefore consider only the minimum amount of fees (greater than zero) per enumeration area to be truly compulsory and subtract that from the average subsidy amount.
 - *Health*: We considered compulsory health user fees to consist of consultation, medicine, fees and charges, and voluntary fees to be traditional doctors' fees/medicines, transport, and other. We considered only official fees as compulsory, assuming that all tokens of thanks were voluntary. In Uganda, it is hard to make a distinction between public and private in the utilization of health services. It is standard for individuals to follow up a public consultation with supplies and medicines from private facilities, given a scarcity of supply in the public sector. We therefore assumed that some of the reported fees were paid to public institutions and are therefore contributing to a higher quality of health service. As in the case of education, then, for those households that report paying a fee, and attending a public facility for their initial consultation, we consider the minimum amount of fees (greater than zero) per enumeration area to be compulsory and subtract that from the average subsidy amount.

4. Impact of Fiscal Policy on Poverty and Inequality

Table 1 in the introduction provides a summary table of the poverty and inequality results, which are disaggregated here.

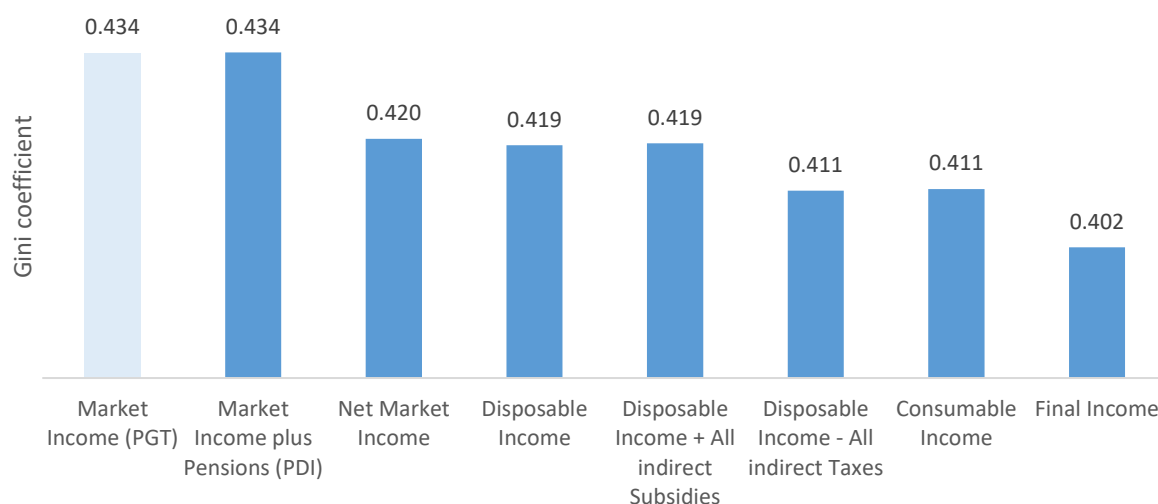
4.1. Inequality

The fiscal system reduces inequality in Uganda. As shown in Figure 6, the Gini coefficient for 2016/17 goes down from 0.434, before any fiscal intervention, to 0.402 after the combined effect of taxes and transfers is considered. In other words, the combined effect of taxes and transfers in Uganda lowers inequality by 3.2 Gini points.

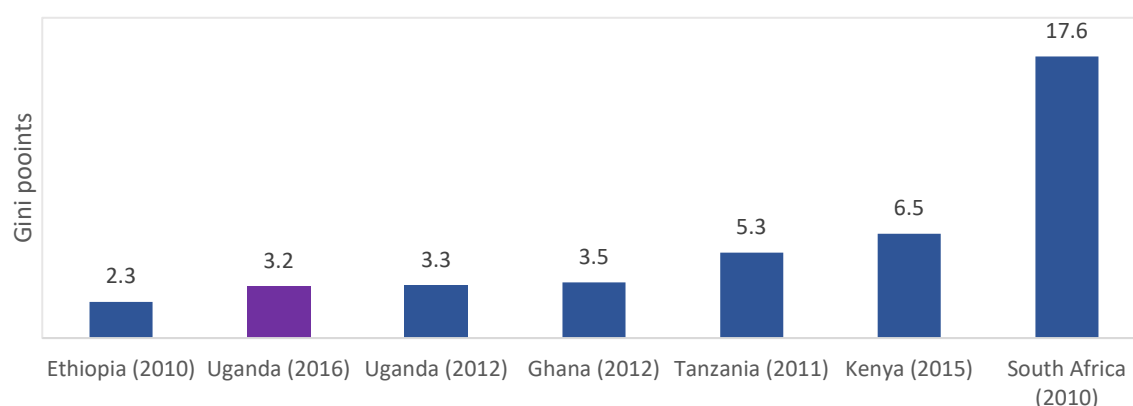
All fiscal instruments are equalizing except for indirect subsidies, which have an effect of approximately 0. The largest reduction in inequality comes from direct taxes, which cut the Gini coefficient by 1.4 points, almost 40 percent of the total reduction. In-kind transfers and indirect taxes also reduce inequality considerably, lowering the Gini coefficient by approximately one point, and 0.73 Gini points respectively. The effect of direct transfers is only 0.1 Gini point.

The redistributive effect of the fiscal system in Uganda for 2016/17 (3.2 Gini points), is slightly higher than in Ethiopia (2.3), approximately equal to Ghana (3.5), and lower than in Tanzania (5.3), Kenya (6.5), and South Africa (17.6).

Figure 6. Inequality Before and After Fiscal Policy
a. Gini Coefficient



b. Redistributive effect, Sub-Saharan African countries



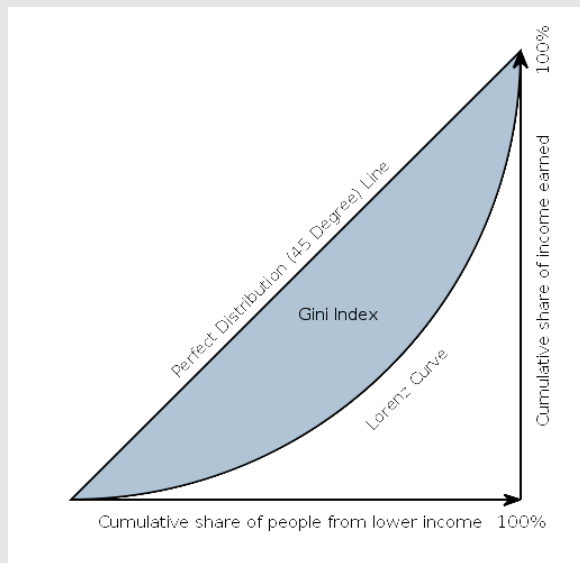
Source: Authors' calculation based on UNHS 2016/17; CEQ Institute database; and World Bank (2018a).

Note for b): The year for which the analysis was conducted is indicated in parenthesis. The graph is ranked from the smallest to the largest redistributive effect, which is the change in the Gini coefficient from market income plus pensions to final income. Except for Kenya, where the effect is the change from market income to final income. When the redistributive effect is positive, inequality declines, when it is negative, it increases.

Box 1. Gini Coefficient: an inequality measure

While poverty measures absolute deprivation with respect to a given threshold, inequality is a relative measure of poverty indicating how little some parts of a population have relative the entire population. In the context of monetary poverty, equality can be defined as an equal distribution of consumption / income across the population. This means that each share of the population owns the same share of consumption / income. The Lorenz Curve compares graphically the cumulative share of the population with their cumulative share of consumption / income. A perfectly equal consumption / income distribution is indicated by a diagonal. The other extreme is complete inequality where one individual owns all the consumption / income. These two (theoretical) extremes define the boundaries for observed inequality.

The Gini coefficient is the most commonly used measure for inequality. A Gini coefficient of 0 indicates perfect equality while 1 signifies complete inequality. In relation to the Lorenz Curve, the Gini coefficient measures the area between the Lorenz Curve and the diagonal.



Source: World Bank's Poverty Handbook, World Bank (2009).

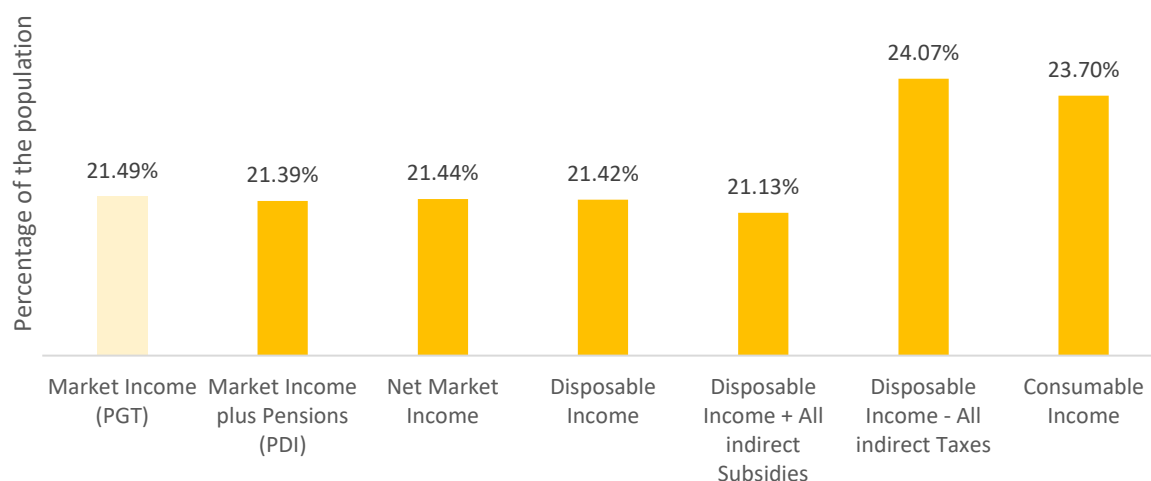
4.2. Poverty

The fiscal system in Uganda is slightly poverty inducing. After all taxes and transfers (except for in-kind transfers, which following standard practice are not included for the analysis) are considered, the poverty headcount increases by around 2.31 percentage points. Direct taxes increase poverty by 0.05 percentage points, while the poverty-reducing effect of direct transfers is only about 0.02 percentage points (see Figure 7a). The muted impact of direct transfers is attributable to the low coverage and small magnitude of these fiscal instruments. The poverty-reducing effect of indirect subsidies is more than offset by indirect taxes, and the result is an overall increase in the poverty headcount ratio by 2.28 percentage points from Disposable to Consumable Income. Coverage is irregular for indirect subsidies (because of the goods being subsidized) while the vast majority of the population is affected by indirect taxes.

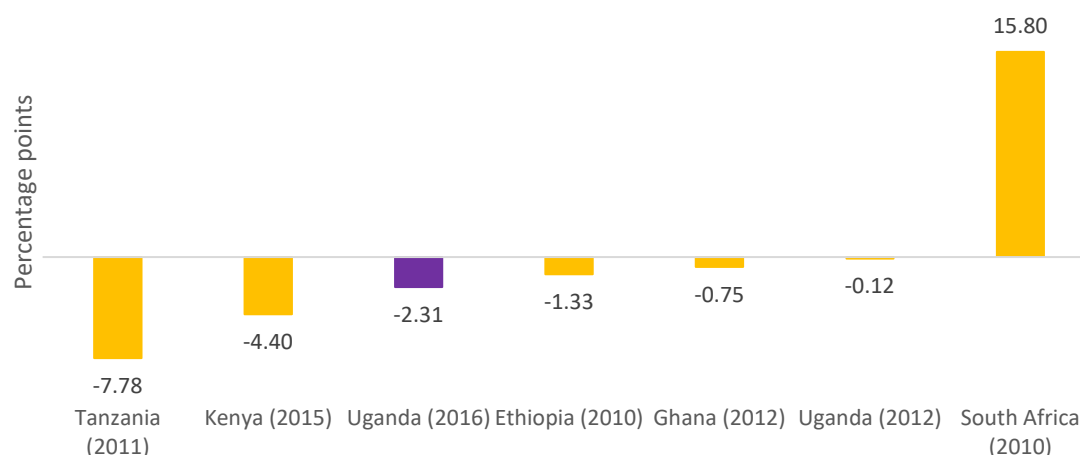
To compare the effect of the fiscal system on poverty in Uganda with other countries (Figure 7b), we look at the change from pre-fiscal income (Market plus Pensions) to Consumable Income and we consider the

poverty headcount rate under the international line of \$1.25 PPP 2005 a day. Under this scenario, the fiscal system in 2016/17 increased poverty by approximately 2.3 percentage points; the analogous increase in poverty due to 2012/13-era Ugandan fiscal policy was approximately 0.1 percentage points. The impact of fiscal policy (excluding the government-cost value of publicly-provided in-kind health and education services) on poverty in Uganda is less poverty inducing than the impact of fiscal policy in Kenya and Tanzania, but far more poverty inducing than the impact of fiscal policy in South Africa.

Figure 7. Poverty Before and After Fiscal Policy
a. Poverty Headcount Rate (under the national poverty line)



b. Poverty Reduction Effect, Sub-Saharan African countries



Source: Authors' calculation based on UNHS 2016/17; CEQ Institute database; and World Bank (2018a).

Note for b): The year for which the analysis was conducted is indicated in parenthesis. The graph is ranked from the smallest to the largest poverty reduction effect, which is the change in the Poverty Headcount from market income plus pensions to consumable income. Except for Kenya, where the effect is the change from market income

to consumable income. Results are calculated at the \$1.25 daily poverty line, 2005-PPP. A positive poverty reduction effect means that poverty is declining, while a negative means that poverty is rising.

Box 2. Measuring poverty in Uganda

The poverty line was set in 1998 using 1993 data by estimating the amount of expenditure needed to satisfy the minimum daily calorie requirements and basic non-food needs. Appleton et al. (1999) identified the 28 commonly consumed food items and the corresponding amount consumed to meet 3,000 calories per adult equivalent. Calorie requirement varies by age and gender, and hence the 3,000 calories is per adult equivalence. Based on the population structure then, the average per capita calorie need was 2,283 calories.

The minimum expenditure on basic non-food needs was estimated using the classic approach of Ravallion and Bidani (1994) by identifying the non-food expenditure of households that are just on the food poverty line. The justification for using these households' non-food expenditure as a reference is that the poor have sacrificed some of their need for calories to buy the non-food items. Therefore, these non-food expenditures should also be regarded as meeting essential needs. The non-food expenditure was allowed to vary by region and rural/urban areas in order to account for spatial differences prices (Appleton et al., 1999). It includes, among other items, rent, utility fees, as well as education and health expenditures. The poverty line is the sum of expenditure on basic food and non-food items. Since 1993, the Consumer Price Index has been used to update this poverty line.

Source: Appleton et al (1999).

4.3. Fiscal impoverishment

An individual receiving benefits and paying taxes experiences increases and decreases (respectively) in income or purchasing power. When an individual who is measured as poor at *post-fiscal* income experienced a greater burden from revenue collection instruments (i.e. she paid more in taxes) than she received in benefits, that individual has been fiscally impoverished. When individuals who are measured as poor at *pre-fiscal* income receive more in benefits than they pay in taxes, we count these as fiscal gains to the poor. We summarize these individual gains and losses through the Fiscal Impoverishment (FI) and Fiscal Gains to the Poor (FGP) indices (first proposed by Higgins and Lustig 2016).

Table 4 shows that as a result of all taxes and transfers (excluding transfers made in-kind), 22.8 percent of the population in Uganda was fiscally impoverished in 2016/17, almost twice as much as in 2012/13¹⁹. As discussed in the introduction, the significant increase over the 2012/13-era rates of fiscal impoverishment can be attributed to an increase in indirect taxes relative to subsidies *allocated* between the two years. In 2012/13, indirect taxes allocated to UNHS households were only 7.8 times greater than subsidies allocated, while in 2016/17 taxes allocated were 11.3 times greater than subsidies. This is the result of both an increase in absolute terms of total revenue collections allocated, and an absolute decline in the allocation of indirect subsidies.

Fiscal impoverishment was also significant in Tanzania and Zambia at approximately 51 and 53 percent of the population (in 2011 and 2015 respectively), while Ethiopia in 2011 experienced a fiscal

¹⁹ Note that these numbers are calculated using the \$1.25 poverty line, for the sake of comparison.

impoverishment rate similar to Uganda at 28 percent. In Ghana, fiscal impoverishment was close to 5 percent in 2013. Rates of fiscal impoverishment among those considered poor at post-fiscal income reached 94 percent in 2016/17,²⁰ second only to Tanzania's rate (in 2011) at 99 percent.

Table 4: Fiscal Impoverishment

| Country, survey year | (1) Market income plus contributory pensions poverty headcount (%) | (2) Change in poverty headcount (percentage points) | (3) Market income plus contributory pensions inequality (Gini) | (4) Fiscally impoverished as % of population | (5) Fiscally impoverished as % of consumable income poor |
|----------------------|---|--|--|--|---|
| Ethiopia (2011) | 31.9 | 1.3 | 32.2 | 28.5 | 83.2 |
| Ghana (2013) | 6.0 | 0.8 | 43.7 | 5.1 | 76.6 |
| Tanzania (2011) | 43.7 | 7.8 | 38.2 | 50.9 | 98.6 |
| Uganda (2012) | 17.9 | 0.1 | 41.3 | 12.2 | 67.7 |
| Uganda (2016) | 22.44 | 3.41 | 43.4 | 22.84 | 92.47 |
| Zambia (2015) | 36.0 | 2.8 | 55.0 | 52.6 | 84.3 |

Note: using the \$1.25 PPP [2005] poverty line, and with respect to market income plus pensions.

Sources: Uganda, 2016/17: authors' calculations based on UNHS 2016/17; Uganda, 2012/13: Haas and others (2016); Zambia, 2015: de la Fuente and others (2017); all others: Higgins and Lustig (2016).

4.4. Pensions as Government Transfers scenario

In the “Public Contributory Pensions as a Government Transfer” (PGT) scenario, we define our pre-fiscal income as “Market Income”. Pensions are considered to be a government transfer, rather than market income, and therefore included with Disposable Income, when the direct transfers are added. Figure 6 and 7 above shows that at Market Income the poverty headcount is slightly higher than when pensions are included (as at Market Income plus Pensions), but that the Gini coefficient is practically unchanged (0.01 Gini points decline). This means that the Public Contributory Pension system is poverty reducing²¹ but does not significantly affect inequality. Thus, when Market Income is taken as pre-fiscal income, the combined effect of taxes and transfers in Uganda also lowers inequality by 3.2 Gini points. In terms of the effect on poverty, under the PGT the increase in poverty is slightly smaller: 2.21 percentage points compared to the 2.31 increase in the PDI scenario.

²⁰ In 2012/13, fiscal impoverishment was lower at approximately two-thirds of the poor.

²¹ However, see the discussion at the beginning of this report regarding the “false poor” that the PGT scenario has the potential to identify. That is, current retirees who receive a large proportion of current income from the public contributory pension system will *appear* - and count as - poor at the Market Income concept even when those same individuals would be expected to have replaced their public pension income with privately-arranged pension or another old-age income if the public pension system was not available.

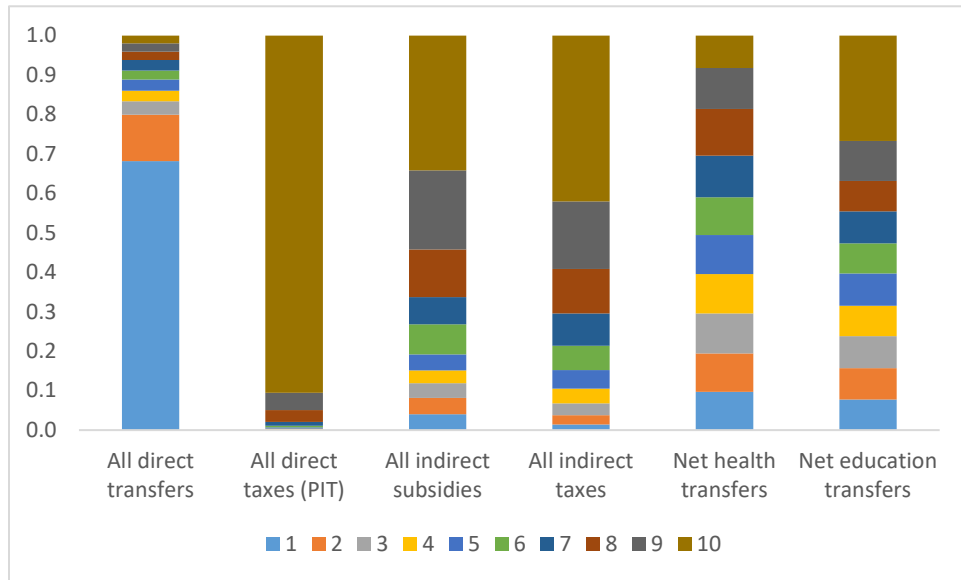
5. Incidence, Progressivity and Marginal Contributions of Taxes and Transfers

The effect of each fiscal instrument on poverty and inequality will depend on how it affects household income across the welfare distribution and on its size relative to the pre-fiscal income. A progressive distribution of benefits or taxes does not guarantee that these instruments contribute to inequality *or* poverty reduction. A very small, proportionally-distributed tax may lead to greater inequality (as the tax will represent a greater burden relative to own incomes for poorer populations) but have zero impact on poverty. Analogously, a small benefit distributed in a “pro poor” manner – such that transfer income received declines as pre-transfer income rises – may have only minor impacts on poverty or inequality.

Concentration shares provide a summary of the “concentration” of taxes or benefits in different groups of individuals (for example, the poorest 10 percent of the population and the richest 10 percent of the population) and provide a rough guide to the distribution of fiscal interventions. Figure 8a shows the concentration shares for the broad categories of revenue and expenditure instruments considered in this report. Direct transfers are heavily concentrated amongst the poor, while direct taxes are concentrated among the rich, which helps to explain why they are equalizing components of the fiscal system. Health and education transfers, meanwhile, are more equally distributed, although benefits created from tertiary education expenditure are captured more often by the upper deciles. Indirect taxes (and subsidies) are concentrated more among the upper deciles than the lower, but much less so than for the direct tax.

Figure 8b presents the incidence, or the size, relative to *own* income (in this case, Market Income plus Pensions) of the different broad fiscal interventions by decile. Transfers contribute to household income, and thus are portrayed as positive, while taxes subtract from it, and thus are negative. Education (excluding pre-school) transfers, as a proportion of pre-fiscal income, are particularly important for households at the bottom of the distribution. For the poorest 10 percent of households, the education transfers constitute approximately 14 percent of pre-fiscal income; for the richest 10 percent of households the analogous figure is approximately 3 percent. The burden of personal income tax -PAYE- is borne mainly by households in the richest decile (Figure 8). Indirect taxes represent a sizeable portion of pre-tax income across the distribution, but the incidence is larger for the wealthier; it ranges from 4 percent of pre-fiscal income for the lowest decile to 60 percent for the highest. Direct transfers benefit particularly the bottom decile, but in total only represent 3 percent of pre-fiscal income.

Figure 8: Concentration and Incidence of Fiscal Interventions
a. Concentration shares for all taxes and subsidies, across deciles



b. Incidence of fiscal interventions (with respect to Market Income with Pensions), by decile



Source: Authors' calculation based on UNHS 2016/17.

We also present the Kakwani coefficients and marginal impacts for each of the fiscal instruments within the broader categories. Kakwani coefficients provide a summary measure of how progressively taxes and benefits are distributed *relative to* the distribution of income, in this case pre-fiscal income, or Market

Income plus Pensions. When a fiscal instrument is more progressively distributed over the population than the pre-fiscal income, the Kakwani index is positive, and the instrument in question is progressive, in relative terms. The index is negative when the instrument is regressive. As taxes constitute reductions in income, a progressively distributed tax creates larger burdens as incomes rise.²²

As discussed in the introduction, to understand the contribution of a particular policy measure, we need to take into account the system as a whole. The marginal contributions of each individual intervention are therefore calculated considering all other fiscal instruments. They provide a counterfactual estimate of poverty and inequality in the absence of the fiscal item in question and an estimate of that instrument's current impact on current welfare. Note that while the marginal impact summarizes the contribution of a tax or transfer to a particular fiscal system's poverty or inequality, the overall contribution of the entire system will not in general be equivalent to the sum of the individual marginal contributions of the fiscal elements included in the fiscal system, as explained by Lustig (2018).

5.1. Revenues

5.1.1. Direct taxes

Taxes in Uganda are equalizing but cause an increase in the poverty headcount. The PAYE burden falls predominantly on the richer households of Uganda; the Kakwani index of 0.42 indicates it is the most progressive tax. It is also significant in magnitude when measured relative to pre-tax incomes (Figure 8b); the result is that PAYE's marginal contribution to inequality reduction – at 1.5 Gini points – is the single largest marginal contribution to equality estimated in this analysis while having virtually no effect on poverty.

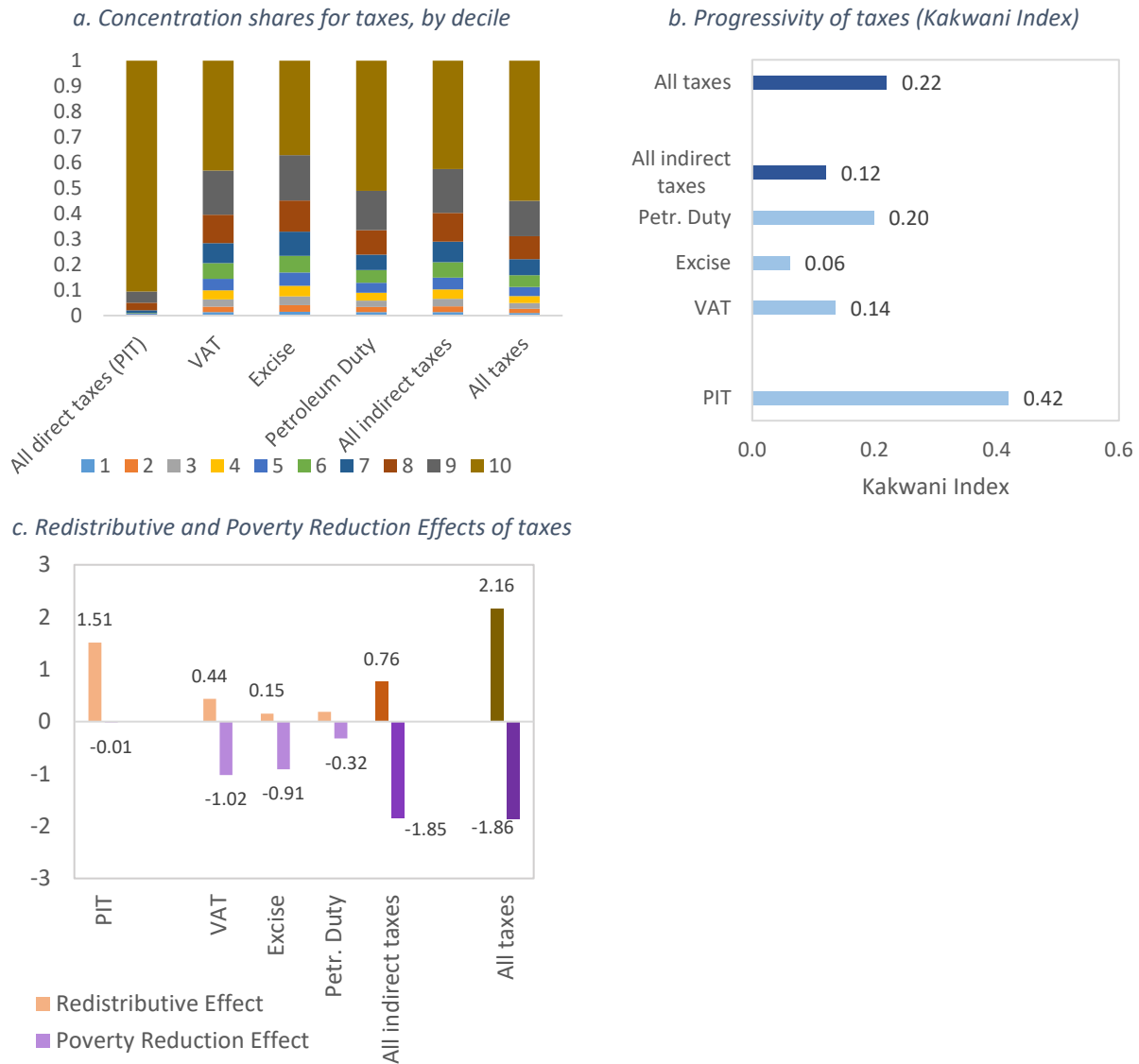
5.1.2. Indirect taxes

The petroleum duty is also very progressive; it has the second highest Kakwani index among all taxes. However, the marginal impact of the petroleum duty on inequality is small with a marginal redistributive impact of approximately 0.19 Gini points. The petroleum duty represents a very small portion of pre-tax income for those who pay it. VAT and Excise taxes are both less progressive than the petroleum duty and, as would be expected for taxes on consumption activity broadly defined, represent a considerable fraction of households' pre-tax income. They both have positive marginal impacts for inequality (approximately 0.6 Gini point) and negative marginal impacts on poverty. Poverty rises by approximately 1.9 percentage points from these two indirect taxes alone.²³

²² We estimate Kakwani coefficients in such a way that a positive Kakwani coefficient is always a progressive distribution, regardless of whether the instrument is a tax or benefit.

²³ If informal purchases are concentrated among the poor, such that the effective VAT rates for poor households' consumption baskets are lower than what we have here imputed, the poverty-increasing impact of VAT *may be* overestimated. However, note that overestimates of effective rates among a certain set of households must mean simultaneous underestimates of effective rates among the rest of households (in an accounting framework like the CEQ Assessment framework). This implies that the poverty-inducing effect of VAT or excises *will not necessarily be an overestimate* when poor households make more informal

Figure 9. Incidence, progressivity and marginal contributions of taxes



Source: Authors' calculation based on UNHS 2016/17.

Note for c: A positive redistributive effect means inequality declines, while a negative redistributive effect means inequality increases (in Gini points). A positive poverty reducing effects means poverty is declining while a negative poverty reducing effect means poverty is increasing (in percentage points).

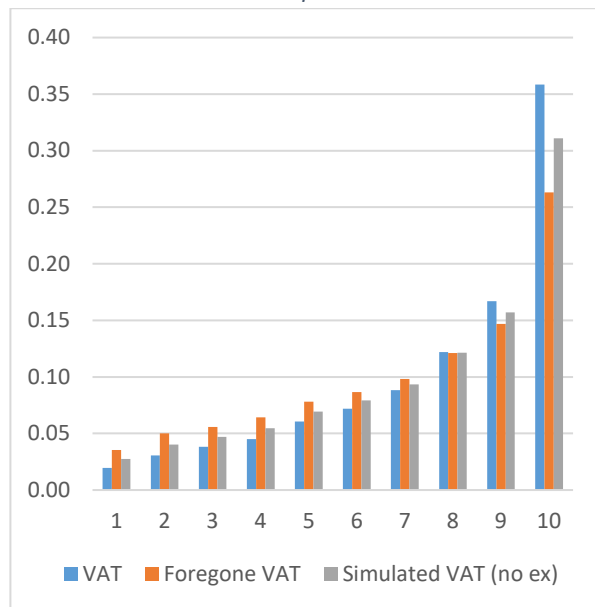
purchases. Excise taxes on tobacco may have dynamic effects (over the medium- to long-term) including reduced long-term health expenditure, higher labor productivity and longer life expectancy which are not captured here, and which *may* change the medium- to long-term estimates of the impact of this tax on *future* rates of poverty. See Fuchs et al. (2019).

5.1.3. VAT exemptions

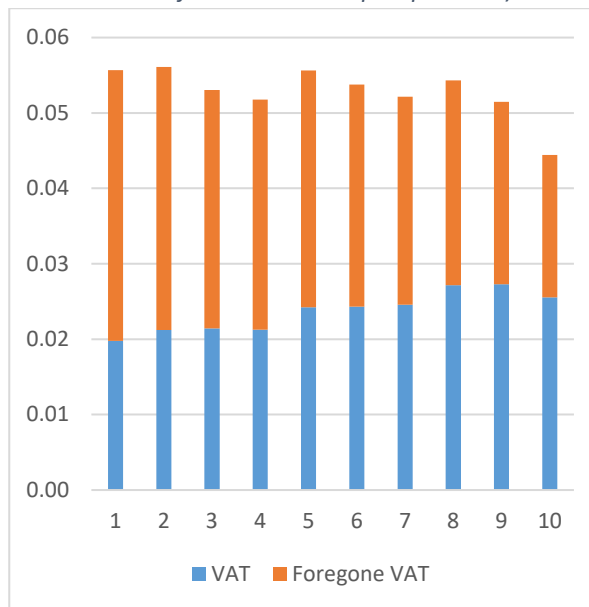
A closer look at the foregone VAT due to exempt and zero-rated items shows that it is more concentrated amongst the poor than the standard-rated VAT is (Graph a.). Removing exemptions would make the VAT regressive as the incidence of VAT payments, as a proportion of pre-fiscal income, is decreasing with income (Graph b.). Removing VAT exemptions will therefore increase levels of inequality and poverty.

Figure 10: Concentration and Incidence of VAT exemptions

a. Concentration shares for foregone VAT due to exemptions



b. Incidence of foregone VAT due to exemptions (as a share of market income plus pensions)



Source: Authors' calculation based on UNHS 2016/17.

It is clear that future marginal increases in internal revenues from higher VAT rates or more excises will negatively impact the vulnerable. Direct taxes like PAYE could provide more revenues without threatening to impoverish already-vulnerable households. For example, the threshold (for reporting) could be lowered while the marginal rates at each bracket could be raised.

5.2. Expenditures

5.2.1. Direct Transfers

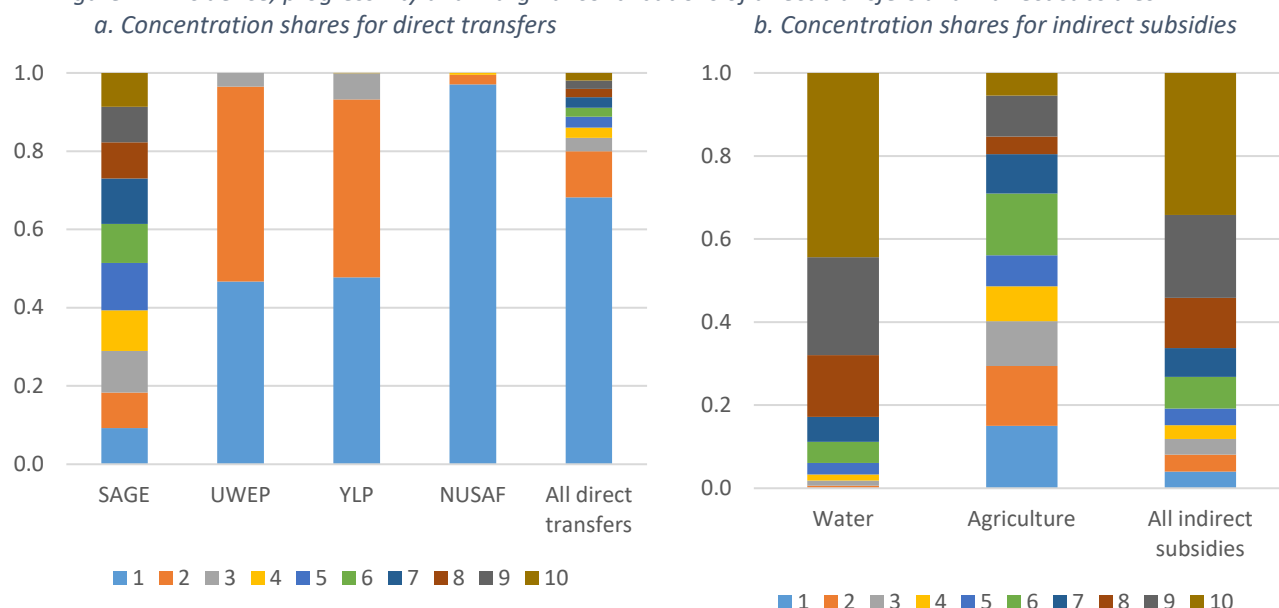
Except for the SCG program, direct transfers (NUSAF, UWEP and YLP) are *simulated* to be received by the poorest segments of the population, as shown in Figure 10a. This is in turn reflected in very large Kakwani indices of 1.15, 1.18, and 1.23 for UWEP, YLP, and NUSAF respectively, (Figure 10c). As a result, these programs have positive marginal impacts on inequality reduction, but the magnitudes are small: all direct transfers together have a joint marginal impact of 0.1 Gini point. Similarly, the joint marginal impact on poverty is 0.1 percentage points. The low coverage (less than 1 percent of the total population of Uganda)

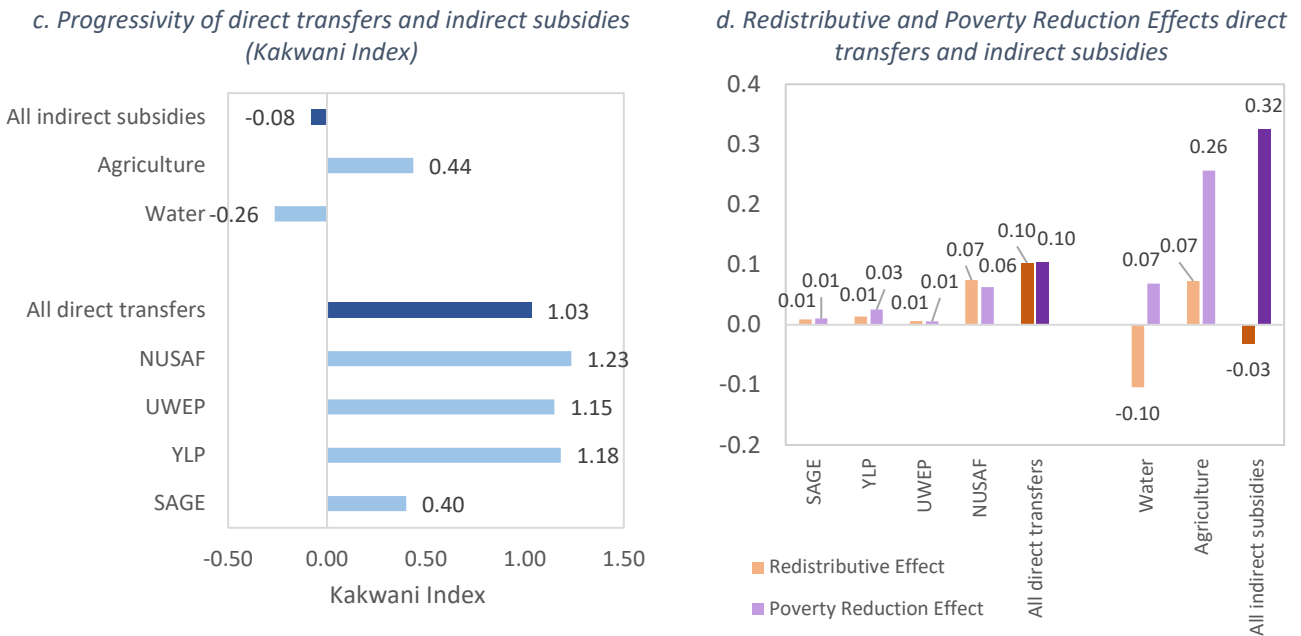
as well as the size of the transfers, which are limited by low level of expenditure in social protection, explain the small magnitude of these effects.

5.2.2. Indirect Subsidies

Water subsidies are concentrated amongst the richest Ugandans (Figure 10b), given that access to such a service increases with income. The Kakwani index for the water subsidy is -0.26 (Figure 10c) indicating a regressive distribution. The agricultural input subsidy program, meanwhile, is more evenly distributed; its Kakwani index is 0.44, indicating progressivity. Cumulative subsidies are regressive, and taken together, they contribute to increase inequality marginally by 0.03 Gini points, (Figure 10d) and a marginal impact on poverty reduction of 0.32 percentage points (Figure 10d). The poverty reduction effect is mainly driven by the benefits of the agricultural inputs program to households at the lower end of the distribution.

Figure 11. Incidence, progressivity and marginal contributions of direct transfers and indirect subsidies





Source: Authors' calculation based on UNHS 2016/17.

Note for d: A positive redistributive effect means inequality declines, while a negative redistributive effect means inequality increases (in Gini points). A positive poverty reducing effects means poverty is declining while a negative poverty reducing effect means poverty is increasing (in percentage points).

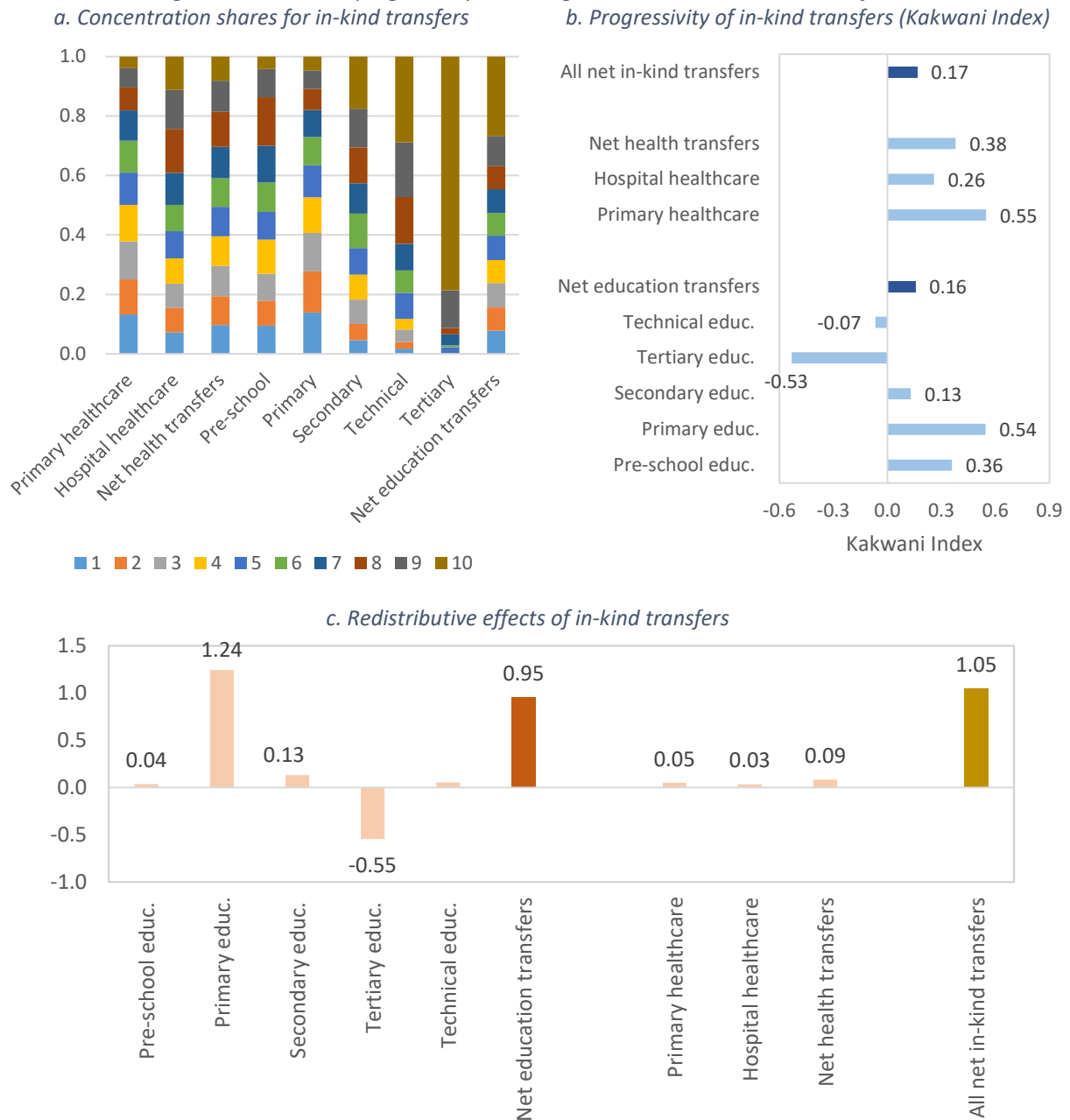
5.2.3. In-kind Transfers

Except for the tertiary education transfer and, to a lesser extent, the technical education transfer, all in-kind transfers are concentrated relatively evenly (Figure 11a). Taken together, all in-kind transfers are progressively distributed with a Kakwani index of 0.16 (Figure 11b). Primary education and primary health are the most progressively distributed. Given that the primary education transfer is a large proportion of households' income, its marginal contribution to equality is sizeable at around 1.24 Gini points. This effect on redistribution is partially offset by the tertiary and technical transfers and, overall, the marginal contribution of the net education transfers to inequality reduction is 0.95 Gini points. Health transfers are small in size and their marginal contribution to reducing inequality is small, around 0.09 Gini points. We lack data on the distribution of *quality* in the public education and health systems. However, studies in the Africa region and elsewhere have demonstrated a marked variability in the quality of such public services as well as a tendency for lower-quality public services to be produced in areas with higher concentrations of poor individuals.²⁴ That is to say, including a variable quality dimension to our analysis of in-kind transfers might significantly alter the estimated impact of these services on inequality.²⁵

²⁴ World Bank (2016) shows that in the case of education and health, more and better inputs seem to be available in better-off locations (e.g. lower number of pupils per teacher or lower number of pupils per classroom). Similarly, World Bank (2019c) points to an overall low quality of education in Uganda, and highlights that quality varies across urban and rural areas as well as regions.

²⁵ Following standard CEQ methodology, we only analyze the effect of in-kind transfers on inequality.

Figure 12. Incidence, progressivity and marginal contributions in-kind transfers



6. Comparison of 2012/13 and 2016/17 Fiscal Incidence Analyses

Below we compare the results from the previous CEQ Assessment in Uganda, presented in Jellema et al. (2017), which is based on 2012/13 fiscal and household survey data, and the CEQ Assessment summarized here, which is based on 2016/17 data.

Overall, the redistributive impact of fiscal policy has not changed drastically between 2012/13 and 2016/17. While across all CEQ Income Concepts, estimated inequality was *lower* in 2012/13 than in 2016/17, in both years all taxes and transfers accounted for a decline in inequality of approximately 3 Gini points from Market Income plus Pensions to Final Income (Figure 12a). While the marginal impact of indirect taxes on inequality appears larger in 2016, the marginal impact of subsidies and in-kind transfers on inequality has fallen (Figure 12c).

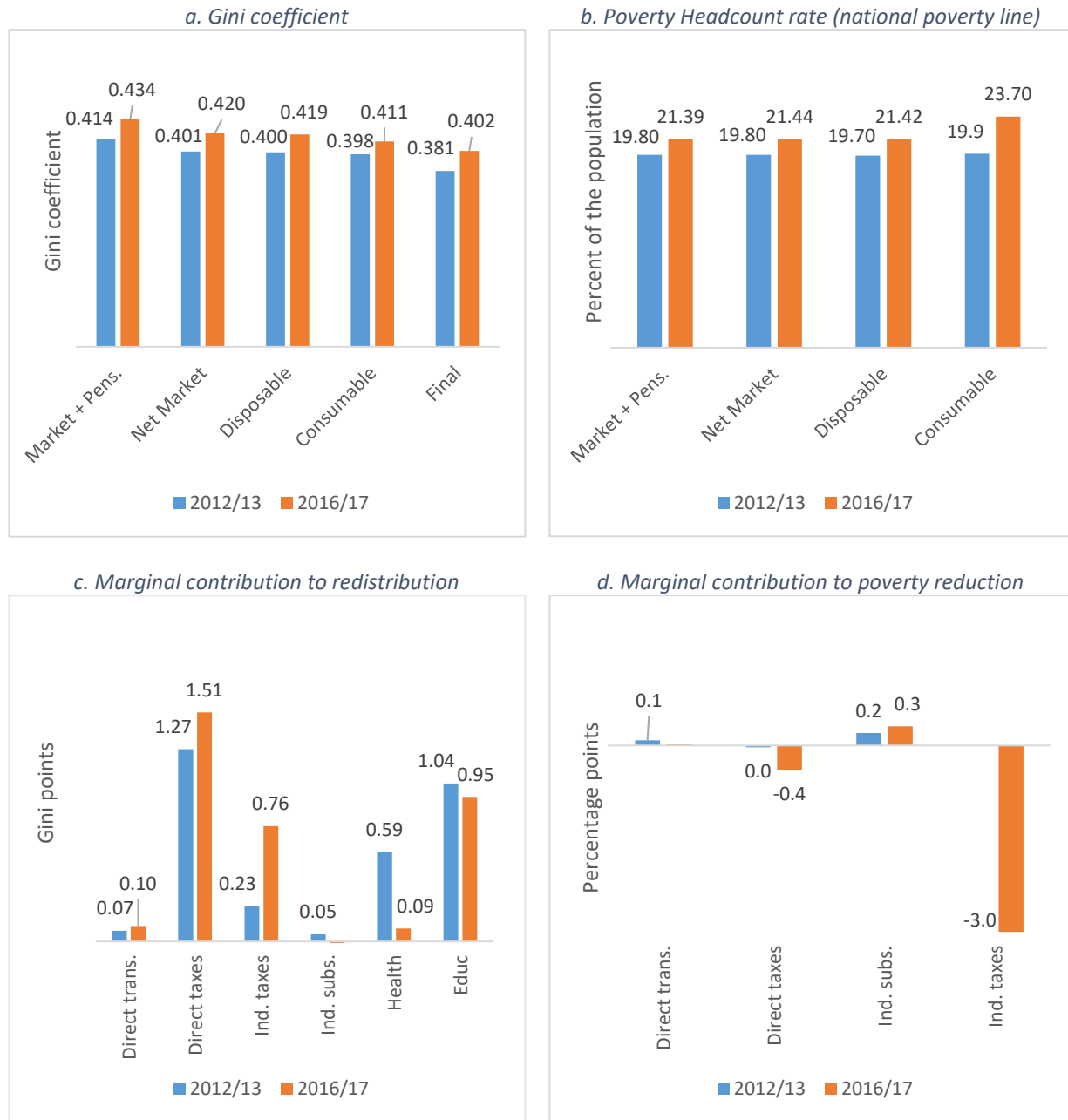
As discussed above, the increased impact of *net* indirect taxes – that is, indirect taxes paid minus any subsidy benefits received – on inequality in 2016/17 relative to 2012/13 is due to the increase in the relative magnitude of indirect taxes (or, put differently, the *decrease* in the relative magnitude of subsidies allocated). As it was primarily richer households who were benefitting from the electricity subsidy, the decision to not allocate an electricity subsidy in the current incidence exercise impacts those richer households the most. So, although rates of *net* indirect tax payments have gone up for everyone, they have gone up by more for richer households, which in turn creates a larger impact on inequality.

The reduction in the impact of in-kind services on inequality is due mostly to a reduction in the impact of in-kind health care services. Whereas in 2012/13 in-kind health care service delivery contributed approximately 0.6 Gini points to a reduction in inequality, in 2016/17 the same in-kind services contributed approximately 0.1 Gini points to a reduction in inequality. This reduction in impact is likely due in part to a revised estimate of mandatory fees paid to public health care service providers in 2016/17.

The impact of fiscal policy on poverty is considerably larger more recently: in 2016/17 the fiscal system contributes to an increase in the poverty headcount ratio of approximately 2.3 percentage points while in 2012/13 fiscal policy had approximately zero impact on poverty (Figure 12b). The most significant difference in the evolution of poverty across CEQ Income Concepts between 2012/13 and 2016/17 is at Consumable Income, when the poverty headcount ratio increases by over 2 percentage points in 2016/17 and by less than 0.5 percentage points in 2012/13.

The principal difference between the effects of the fiscal instruments is that in 2016/17 the indirect taxes, particularly the VAT and the excise tax, have a considerably larger poverty-inducing effect. In 2012/13 the impact is close to 0 (Figure 12d). This result reflects both an increase in absolute terms in tax revenue coming from indirect taxes (while indirect subsidies have declined) and the exclusion of an electricity subsidy -allocated in the previous assessment- after it was determined that there were no longer implicit subsidies in the public provision of this service. In addition, it reflects the inclusion of the indirect effects of indirect taxes in the analysis, not included previously.

Figure 13. Effect of fiscal policy in 2012/13 and 2016/17



Source: Authors' calculation based on UNHS 2016/17 and using the national poverty line.

Note for c): A positive redistributive effect means inequality declines, while a negative redistributive effect means inequality increases (in Gini points). For d): A positive poverty reducing effects means poverty is declining while a negative poverty reducing effect means poverty is increasing (in percentage points).

7. Conclusions

To make progress in promoting equality and improving the living standards of the population in Uganda, it is necessary to understand the effect of Uganda's fiscal policy on inequality and poverty. This report uses the internationally comparable CEQ methodology to assess the individual and combined effects of taxes and public social spending, based on the microdata from the UNHS 2016/17 household survey. The main objective is to provide considerations for policy makers in terms of which fiscal instruments or, more specifically, which mix of fiscal instruments can contribute to reduce poverty and inequality.

Overall, our results show that Uganda's fiscal system is modestly equalizing. As a whole, taxes and transfers in 2016/17 reduced inequality by approximately 3.23 Gini points. This result is comparable to Ghana, moderately lower than in Kenya and Tanzania, and much lower than the result observed for South Africa. The largest contributive factor to this equalizing effect is direct taxation (personal income tax or PAYE), followed by the education in-kind transfers (net transfers). This is not surprising, given the size of these fiscal interventions as a proportion of pre-fiscal income and their progressiveness.

Direct transfers and social protection programs more generally contribute to the redistributive effect and are simulated as highly concentrated among the poorest households. Nonetheless, their effect is rather modest due to the low coverage, scope and size of these programs. In this sense, expanding the coverage of social protections programs – in the case of NUSAF beyond the northern region, and in general, increasing the number of beneficiaries – should not only help to reduce household vulnerability but also lower inequality.

Importantly, some fiscal transfers in Uganda appear to be regressive and contribute to increased inequality. In particular, tertiary education transfers and, to a lesser extent, water subsidies and technical education transfers are disproportionately benefitting better off households. Households with access to the public water supply – usually non-poor and primarily urban households – capture current water subsidy benefits. This may suggest that non-poor users would agree to a higher tariff that would eliminate or partially eliminate the need for subsidies to water. The foregone expenditure could be used to expand current cash transfer programs (for example). Similarly, a closer assessment of who is benefiting from tertiary and technical education may suggest alternative ways for funding these services, perhaps with the participation of the private sector.

The in-kind education transfers, particularly at the primary level, benefit the less wealthy households. This is the outcome of the Universal Primary Education initiative launched by the GoU almost two decades ago, which has increased enrollment rates. However, increased enrollment over the years has taken its toll; Uganda struggles to provide high-quality education everywhere. This leads to, among other things, a low completion rate for the primary level and, related to this, the low transition rate into secondary level. Fiscal policy would need to address these shortcomings before expecting a large impact of, for example, increased secondary education spending.

In terms of the effect on well-being, fiscal policy is slightly poverty inducing. Once taxes and transfers (excluding transfers in-kind) are accounted for, the poverty headcount rate increases by about 2.3 percentage points. Taxes, particularly the VAT, account for a substantial increase in poverty. While the effect is somewhat offset by direct transfers, these are not large enough to counteract the negative impact. While this result is also observed for other Sub-Saharan African countries such as Ethiopia, Ghana, and to a larger extent in Kenya and Tanzania, this is not the case in other countries outside Africa. Increasing the size and coverage of the pro-poor direct transfers programs has the potential to alleviate poverty going forward and may be feasible politically.

Inclusive economic growth in Uganda depends upon access to high-quality services (education, health, water and sanitation), better human capital development, and targeted social protection to reduce the vulnerability of the population to adverse shocks (through social protection programs). This entails enhancing the efficiency and, inevitably, levels of public expenditures. Some potential revenue sources include broadening the personal income tax (PIT) base and closing exemptions of the value-added tax (VAT). The latter would make the VAT a regressive fiscal instrument in relative terms, and the impact on the poor would need to be countered through greater social protection measures.

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