Responding to imported inflation in Uganda: Distributional impacts and policy options

Liam Carson, Harriet Conron, and Richard Newfarmer

- Inflation is ravaging the world, driven by a combination of post-pandemic supply chain disruptions, a rebound in global demand, and the war in Ukraine.

- The first round-effects of the global inflation surge in Uganda have occurred via jumps in the prices of seven principal commodities, delivering particularly adverse hits to the incomes of the poor.

- As a small open economy, Uganda can best adapt by maintaining a sound and flexible macroeconomic framework and generally allowing price adjustments to run their course.

- Although fiscal headroom is highly constrained as Uganda emerges from the COVID-19 related economic downturn, there may be scope for policymakers to undertake a few selective interventions to assuage the impact of inflation on low-income groups. These include pro-poor tariff reductions, eliminating the excise duty on cooking oil and targeted cash transfers.

Inflation is a global challenge

Global food and fuel prices have surged in 2022. The ongoing conflict in Ukraine has caused severe supply disruptions, resulting in sharp price rises in commodities for which Russia and Ukraine are large exporters. These goods include fuel, fertilizers, wheat, sunflower oil and metals. The surge in commodity prices has been exacerbated by continued lockdowns across China and a rebound in global demand amid receding concerns about the COVID19 pandemic. There has also been a knock-on impact as the prices of several substitute goods have also recorded steep increases.

Between April 2021 and April 2022, the FAO World Food Price Index rose by 29.8%. The index is now, by some distance, at its highest level in the 32-year history of series in both nominal and real terms. *(See Figure 1.)*

Figure 1: FAO World Food Price Index (Nominal, 2014-16 = 100)
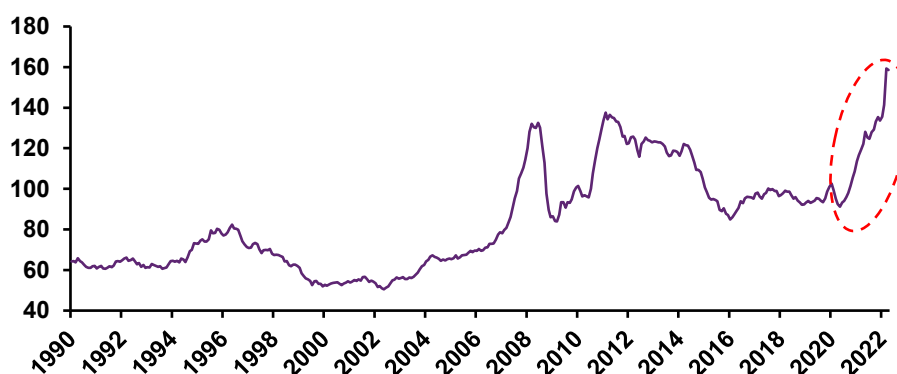
Source: FAO World Food Price Index, IGC Uganda

Food price rises have been broad-based. All of the five sub-components of the FAO World Food Price index – vegetable oils, cereals, dairy, sugar and meat – have risen by at least 16.8% over the past twelve months (April 2021 to April 2022). *(See Figure 2)*

*Figure 2: Change in prices of FAO World Food Price Index components (April 2021-22)*
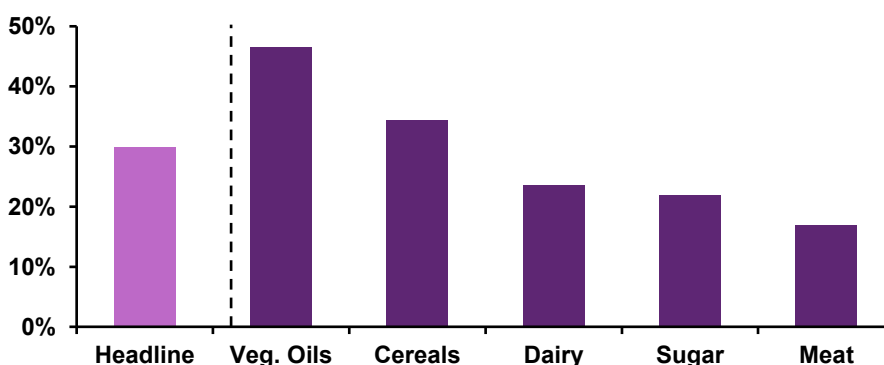
Source: FAO World Food Price Index, IGC Uganda

There has, however, been a particularly pronounced jump in the global prices of vegetable oil and cereals. These components of the FAO series recorded year-on-year inflation rates of 46.4% and 34.3% respectively in April. *(See Figure 2 again.)* The surge in vegetable oil prices has been driven both by a contraction in the supply of sunflower oil from Ukraine, as well as an Indonesian ban on palm oil exports. Meanwhile, with Ukraine and Russia the world's 4th and 6th largest exporters of cereals in 2021, the supply hit associated with the conflict has triggered an especially steep rise in prices of this group of commodities.

This price shock is unlikely to prove short-lived. According to forecasts outlined in the *World Bank Commodity Market Outlook (April 2022)*, while prices of most commodities are projected to fall back a little by the end of 2022, they are expected to remain well above 2021 levels. *(See Figure 3.)* Beyond 2022, the *World Bank* also anticipates that medium-term commodity prices are likely to stay elevated compared to the standards of recent decades.

*Figure 3: Global commodity prices and World Bank CMO forecasts (Nominal, 2021 = 100)*
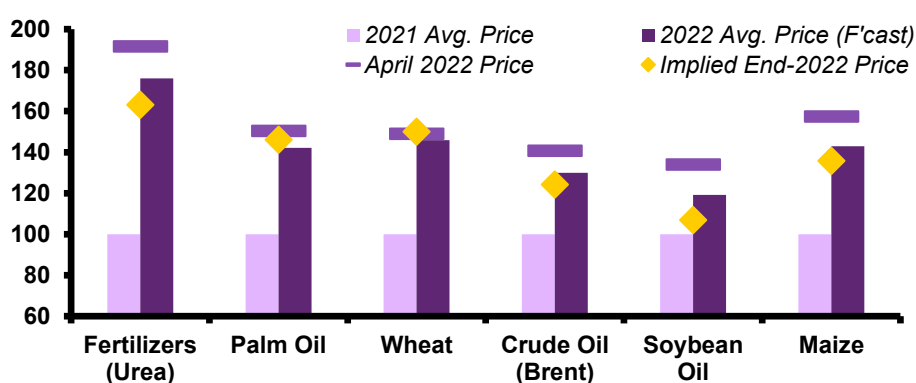
Source: World Bank Commodity Markets Outlook (April 2022), IGC Uganda

Domestic implications of global price rises

The global inflation surge has caused price pressures to build in Uganda. Domestic inflation came in 6.3% y-o-y in April 2022. This marks a five-year high and the rate has accelerated from 1.9% y-o-y in October 2021.

The prices of several widely-consumed goods have risen particularly sharply. Figure 4 plots the latest year-on-year inflation rates (May 2022) of all 344 goods and services included in the CPI data against their weight in the CPI basket. Several products fall into the top-right corner of the chart, meaning that they have experienced a jump in their price over the past twelve months and are heavily consumed in Uganda. **These include laundry soap, cooking oil, chapati, matooke, petrol, sugar and maize flour.**

Figure 4: Inflation rates and CPI weights of goods and services in Uganda's CPI basket
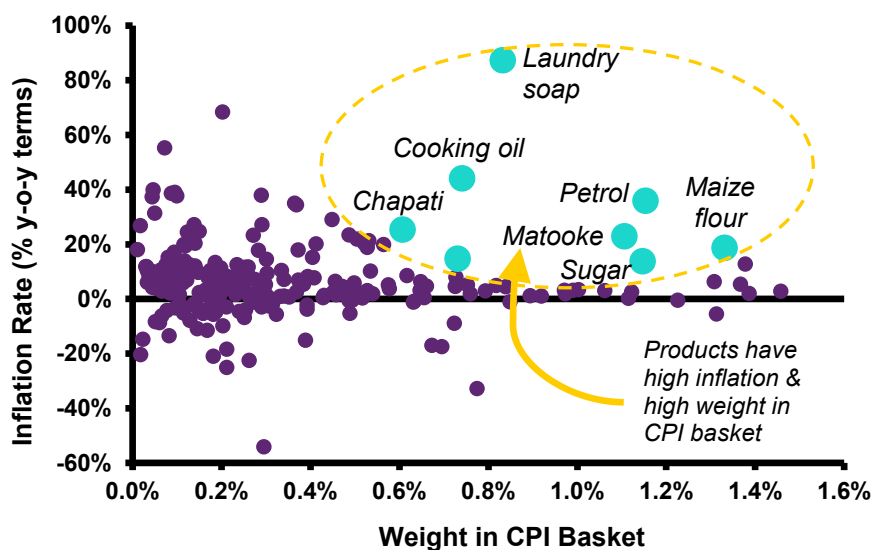
*Source: Uganda Bureau of Statistics (May 2022 CPI release), IGC Uganda*

The inflation rates of laundry soap, cooking oil and petrol are particularly high. The April 2022 CPI data showed that the year-on-year inflation rates of these goods came in at 87.2%, 44.0% and 35.8% respectively. With their weights totalling 2.73% of the whole basket, these prices have had a pronounced inflationary impact. These three commodities are responsible for a combined 1.47%-pt contribution to the headline inflation rate of 4.87%.

Distributional impacts of inflation

The poorest segments of the Ugandan population are disproportionately vulnerable to the rises in the prices of laundry soap, cooking oil and sugar. *Figure 5* uses data from the 2016/17 *Uganda National Household Survey* to plot the average expenditure share of each of the seven products highlighted in *Figure 4* by expenditure n decile.

Figure 5: Expenditure on non-durable goods by expenditure decile (% of total expenditure)
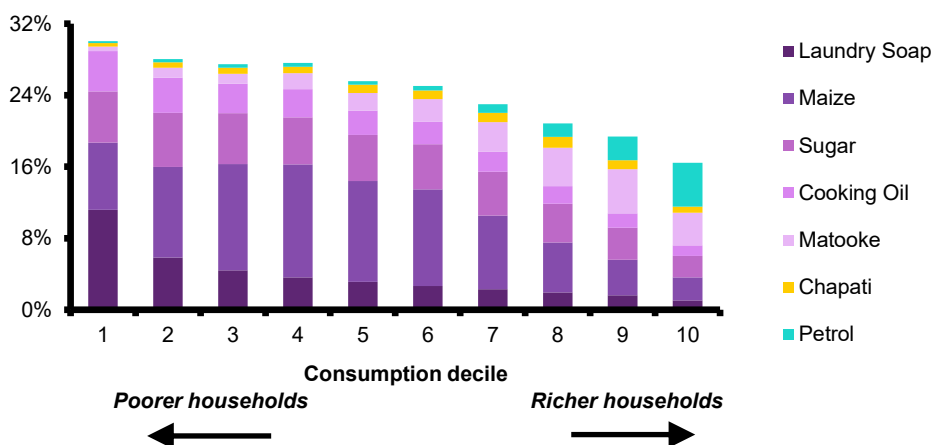
Source: Uganda National Household Survey (2016/17), IGC Uganda

Academics and practitioners using household survey data typically consider expenditure as a proxy for income. While the assumption expenditure is equivalent to income does not hold precisely (the marginal propensity to consume tends to be lower for higher-income households than lower-income households), it acts as a useful proxy. Accordingly, we follow the same approach and think of those households at the bottom of the expenditure distribution as the poorest in society and those at the top of the distribution as the richest households.

It is important to note that *Figure 5* only shows monetary consumption (i.e. the consumption involving a monetary transaction). In reality, a household's consumption (particularly of food) will often involve goods and service produced at home and other forms of in-kind consumption. This is particularly the case at the lower-end of the income distribution.

Figure 5 shows that the poor spend far more laundry soap, cooking oil and sugar expenditure on laundry soap among households in the lowest decile is 11.2% of total expenditure, this expenditure share drops to 1.0% for those in the highest decile. Although less pronounced, the consumption of cooking oil follows a similar distributional pattern – the expenditure share of this good falls from 4.5% to 1.2% between the lowest and highest deciles. For sugar, the share declines from 5.7% to 2.4%.

Proportional to their total consumption, poorer households also spend more on maize than richer households. The distributional pattern of maize expenditure is slightly less straight-forward. *Figure 5* highlights that the expenditure share of maize rises gradually from 7.5% in the first expenditure decile to 12.7% in the fourth decile, before steadily falling back to 2.4% in the tenth decile. The key message, though, remains the same – poorer households are disproportionately exposed to rising maize prices in comparison to rich households.

Meanwhile, richer households spend disproportionately more on petrol, matooke and chapati than poorer households. Based on the 2016/17 *Uganda National Household Survey* data, the expenditure share of petrol for households in the top decile stands at 4.9% – a substantially higher figure than the 0.2% share estimated for households in the bottom decile.

Turning to matooke and chapati, the expenditure share of these goods increases across the expenditure distribution before edging down at the very upper-end of the distribution. The expenditure shares of chapati and matooke peak in the 8th and 9th deciles respectively.

Impact of inflation on household welfare

Against this backdrop, poorer households have suffered a larger hit to their welfare than richer households. One of the key challenges in calculating the household-level impact of inflation is that many households in Uganda, especially in rural areas, also grow agricultural produce to sell in the market. These households may benefit from inflation in these products if they produce more than they consume.

Following the approach of Artuc et al (2020), we use a combination of household survey data from the 2016/17 *Uganda National Household Survey* and *2019/20 Ugandan National Panel Survey* – produced by the Uganda Bureau of Statistics – to calculate the share of household income that is derived from each commodity, and the share of total consumption that is spent on each commodity. We calculate the net welfare effect at the product level as the income gained from inflation in a product, less the reduction in consumption from the rise in prices in that product. This is positive for households that sell more than they consume of a particular good (net producers) and negative for households which consume more than they produce of a good (net consumers). The net welfare effect does not account for substitution between products, so should be considered as illustrative only.

*Figure 6: Net welfare effect of inflation: agricultural commodities*
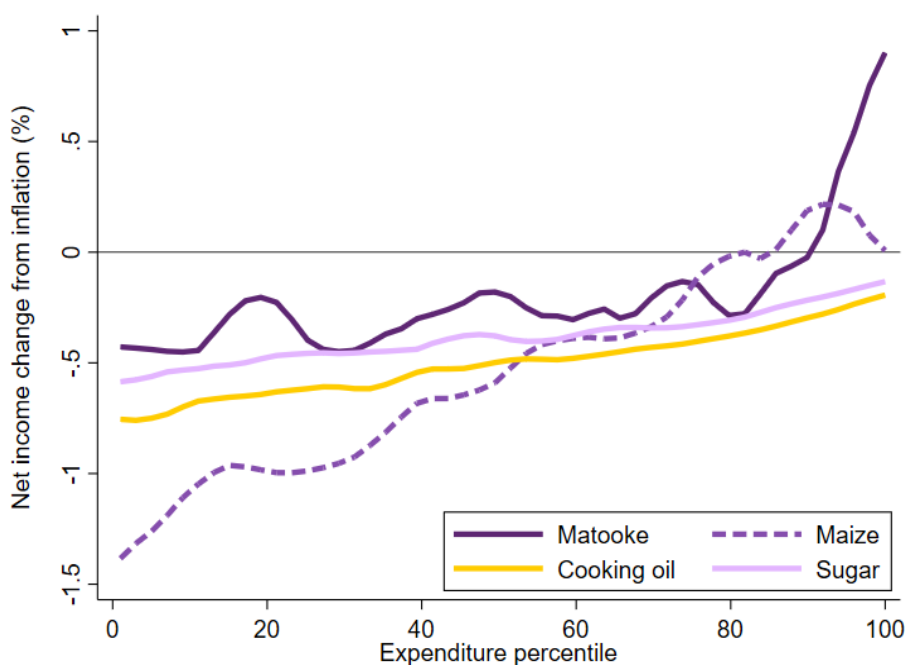
Source: UNHS 2016-17, UNPS 2018-19, IGC Uganda

Figure 6 shows the net welfare effect of price changes in four agricultural commodities – matooke, maize, vegetable oil and sugar. The x-axis shows the distribution of household expenditure (per adult equivalent), which we use as a

proxy for income, again following Artuc et al (2020). *Figure 6* shows that only a small fraction of the richest Ugandan households are net producers of high inflation products. The households who have suffered the largest negative impacts are the least able to absorb price increases – adding the impact of inflation in all four products together, the average reduction in consumption for the first quintile (poorest 20% of households) is 2.7%.

A limitation of the household survey data is that we cannot identify product-level sources of income for non-agricultural commodities. For the remaining three high-inflation products – chapati, laundry soap and petrol – we are only able to model the consumption loss from price increases. *Figure 7* shows that price rises in non-agricultural commodities have had a more mixed effect across the income distribution. Inflation in laundry soap and chapati has affected poorer households slightly more than richer households, but this is outweighed by the effects of higher fuel prices on wealthier households.

Figure 7: Consumption loss from inflation: non-agricultural commodities
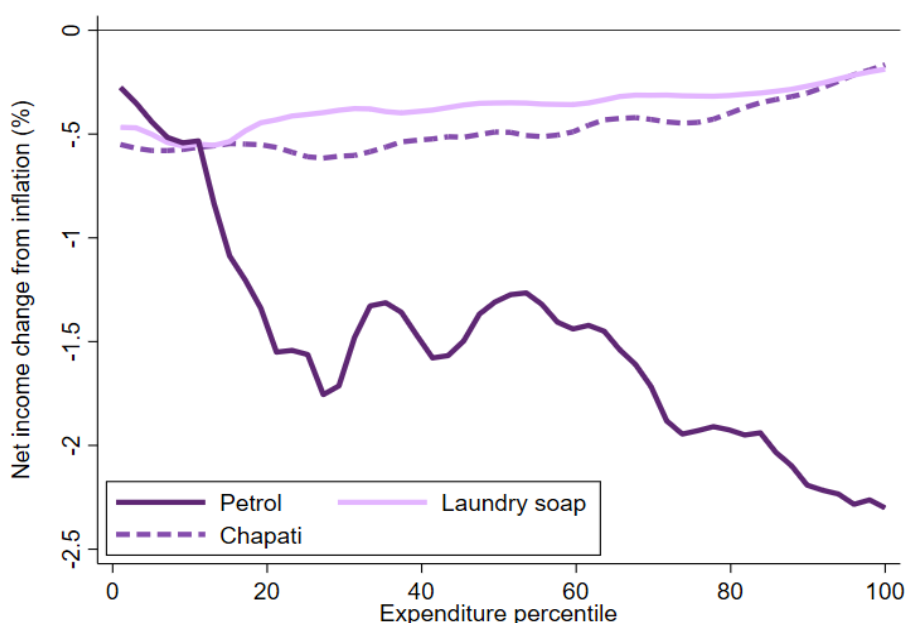
Bringing this all together, the total effect has been a greater reduction in income for poorer households than richer households. In total across all seven products we have discussed above, the average Ugandan household has experienced a 4.00% reduction in household consumption, with a larger negative impact for those households at the lower end of the income distribution. We expect that inflation in these seven commodities will have increased poverty and inequality in Uganda[1].

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[1] Since we do not account for substitution between products, we are unable to provide precise estimates for the effect of inflation on poverty and inequality.

It is important to remember that poorer households typically have less ability to absorb price increases (because necessities take up a larger share of the household budget, and this group of household are less likely to save) and fewer substitution options when price increases cannot be absorbed. This implies that any policy response should be targeted to relieve inflation pressures on poorer households first.

Policy options

It is ultimately up to the Government of Uganda to determine how it wishes to respond to the situation. However, it is often helpful to first define clear criteria that any policy should meet, against which different options can be evaluated. We propose the following:

- **Affordability**: does the policy fit within the existing fiscal resource envelope?

- **Progressivity**: does the policy target the households that have suffered the most from rising prices?

- **Efficiency**: does the policy enhance competitiveness or accelerate the Government's existing structural reform agenda?

In the following section we model four policy options to address imported inflation in the domestic economy.

1. Fuel subsidies

As petrol and diesel have seen some of the highest price rises in Uganda's CPI basket, many commentators in the popular media have suggested subsidising the retail price of fuels. Fuels are currently subject to excise duties, levied at specific rates of 1450, 1130, and 200 Uganda Shillings per litre on petrol, diesel and kerosene respectively. We model a subsidy of 200 UGX per litre, which is economically equivalent to a reduction in excise duty rates of the same magnitude. Using average prices in the UBOS April 2022 CPI release, we estimate this would reduce fuel prices by around 3.8% for petrol, 4.3% for diesel and 5.3% for kerosene – this assumes full pass through of the subsidy to ex-pump prices.

We model a flat subsidy, rather than introducing fuel price caps, which is more commonly used to stabilise the price of fuel. Implementing price controls on fuel risks causing market distortions, and the subsidy required to maintain the cap become increasingly fiscally expensive as oil prices rise.

The use of price caps is the root cause of the current fuel crisis in Kenya, where policymakers set maximum monthly retail prices and the Government pays the difference between this retail price and the wholesale costs of fuel through a stabilisation fund. In April 2022, the government owed oil marketing companies

KSh 13bn (approximately UGX 400bn at May 2022 exchange rates). Without the money owed by government, these companies are unable to distribute petrol and diesel to fuel stations at a profit, resulting in an under-supply of fuel. The Kenyan experience highlights the potentially pernicious implications that Ugandan policymakers could face if they were to choose to bear the risk related to rising global oil prices via a fuel price cap.

One issue with choosing a flat subsidy over a price cap is that, while it may result in a near-term reduction in inflation, continued increases in global oil prices would mean that fuel inflation would head back on to an upward trajectory. The certainty offered to consumers from fuel price caps would be lost. It is also unclear that the introduction of a flat subsidy would fully feed through to lower retail prices – distributors and retailers of fuel may instead choose to widen their profit margins.

The major benefit of using subsidies to reduce prices at the pump would be to boost the spending power of the richest households – who consume much more petrol and diesel than poorer households. Fuel subsidies would provide a boost to real private consumption and, as a result, real GDP growth. This may be exacerbated by the boost to consumer confidence offered by increased certainty over future fuel prices, supporting near-term spending.

Higher fuel prices also affect the prices of other goods in the economy through increased transport costs. To the extent that retailers and wholesalers pass on the reduction in transport costs, reducing the price of fuel may also ease inflationary pressure across the broader economy. As we do not have an estimate for the percentage contribution of fuel costs to the general price level in the economy, the following analysis considers only direct final consumption expenditure on fuels.

Fiscal impacts

Subsidising fuel would be very expensive for the Government. Using fuel import volumes reported by the Ministry of Energy and Mineral Development (2020), we estimate a static fiscal cost of UGX 443.6 billion (0.27% of GDP) in 2022. If consumers adjust to lower prices by consuming more fuel, we estimate the net fiscal cost would reduce to UGX 395 billion (0.24% GDP).

Distributional impacts

Introducing a 200 UGX/L subsidy on petrol and diesel (or reducing excise duties on these products) would provide the greatest benefit to the richest households, while the same subsidy on kerosene would have a modest progressive impact across the income distribution. Considering all three fuels together, the subsidies would be moderately regressive – increasing income by 0.41% for the top consumption quintile, but only 0.18% for the poorest 20%. For the average Ugandan household, the subsidy would increase their consumption by 0.29%.

Figure 8 shows the impact of a 200 UGX/L subsidy on each product across the income distribution.

Figure 8: Consumption gains from a 200 UGX/L subsidy on fuel products
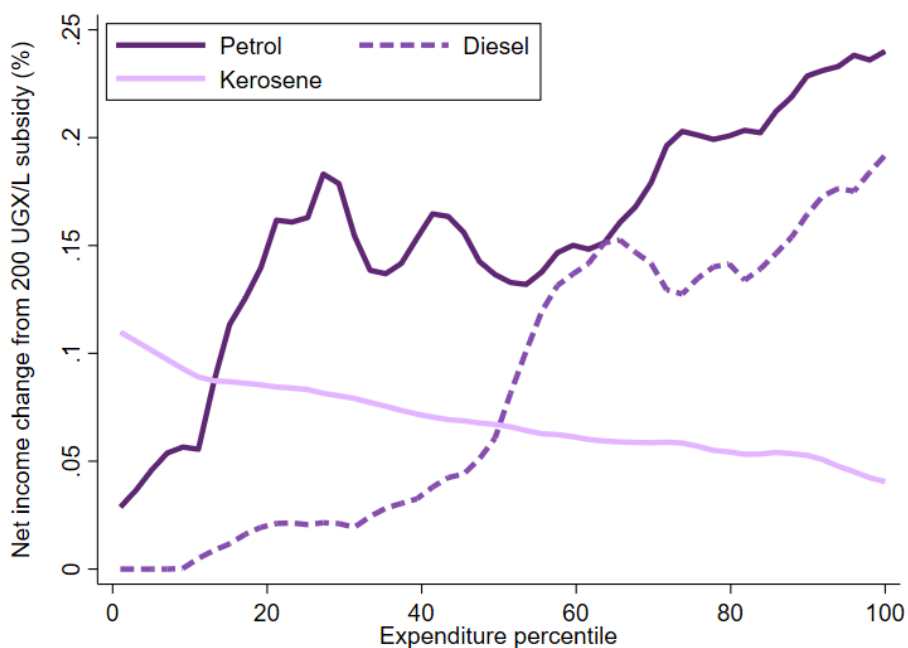
2. Eliminate the excise duty on cooking oil

Domestic cooking oil prices rose by 44.0% y-o-y between April 2021 and April 2022 and account for a sizeable 0.73% of the CPI basket. Cooking oil is currently subject to an excise duty of 200 UGX/L – removing this duty would provide some price relief for households.

Table 1: Actual and Simulated Cooking Oil Prices per Litre (UGX, April 2022)

	No Reform	Reform 1: Excise Duty Elimination	Reform 2: Excise Duty down from UGX 200 to 100	Price Change: No Reform vs Reform 1	Price Change: No Reform vs Reform 2
Avg. Ex-Fact. Price (excl. Duties)	7448.4	7448.4	7448.4		
Avg. Ex-Fact. Price (incl. Duties)	8235.2	8035.2	8135.2		
Avg. Retail Price (excl. VAT)	9415.3	9186.6	9300.9	**-2.43%**	**-1.21%**

We estimate that a reform which eliminates this excise duty would reduce the price of cooking oil by 2.4%. Our assumption is that if manufacturers are no longer

faced with an excise duty, the ratio of the ex-factory price (plus any import and excise duties) to the retail price (excluding VAT) would remain the same. We then assume VAT is levied on this new lower pre-VAT retail price in order to estimate the retail price (inclusive of VAT) if no excise duty were in place.

Our model suggests that, if the excise duty were not in existence, the April 2022 average retail price per litre for cooking oil would be UGX 10,840 (*Table 1*) as opposed to the average retail price of UGX 11,110 reported by UBOS in the April 2022 CPI release. This would leave the year-on-year rate of cooking oil inflation 3.5%-pts lower.

Fiscal impacts

We estimate that eliminating the excise duty on cooking oil would result in a revenue loss of 0.028% of GDP. Assuming that prices remain at their April 2022 level and that collections of the tax grow at the same pace as nominal GDP, the excise duty on cooking oil is set to bring in UGX 49.0bn in FY 2022/23. A complete elimination of the duty would therefore lead to all of this revenue being foregone.

It is also worth noting that there is early evidence from an IGC-funded study by Namunane et al (2022) that the introduction of the Digital Tax Stamp (DTS) solution by the URA has provided a significant boost to administrative efforts in boosting collections of excise duties. Early estimates show that the DTS solution increased excise duty revenues by 29.3% compared to a control group in the second year of implementation (note that implementation challenges in the first year of the introduction of the stamps initially distorted the results).

Given that the excisable products subject to tax stamps brought in UGX 573.9bn of excise duty revenue in FY 2020/21, this result would imply that the introduction of the DTS solution may provide a boost to excise duty revenues of 0.11% of GDP in FY 2022/23. This would be equal to UGX 197.7bn. Accordingly, it is clear that recent improvements in tax administration have provided room to eliminate excise duties which are regressive and levied on essential goods, such as that imposed on cooking oil.

Distributional impacts

Reducing excise duties on cooking oil provides a modest, progressive benefit across the income distribution (*see Figure 9*). Full removal of the excise duty would boost consumption by 0.04% for the lowest quintile, compared to 0.02% for the highest quintile. As cooking oil is disproportionately consumed by the poorest segments of the Ugandan population, any policy measure to lower the price of the good would narrow inequality. Moreover, cooking oil is an essential good with few viable substitutes, meaning that it would not fit into the traditional scope of excise duty.

Figure 9: Consumption gain from removing excise duty on cooking oil
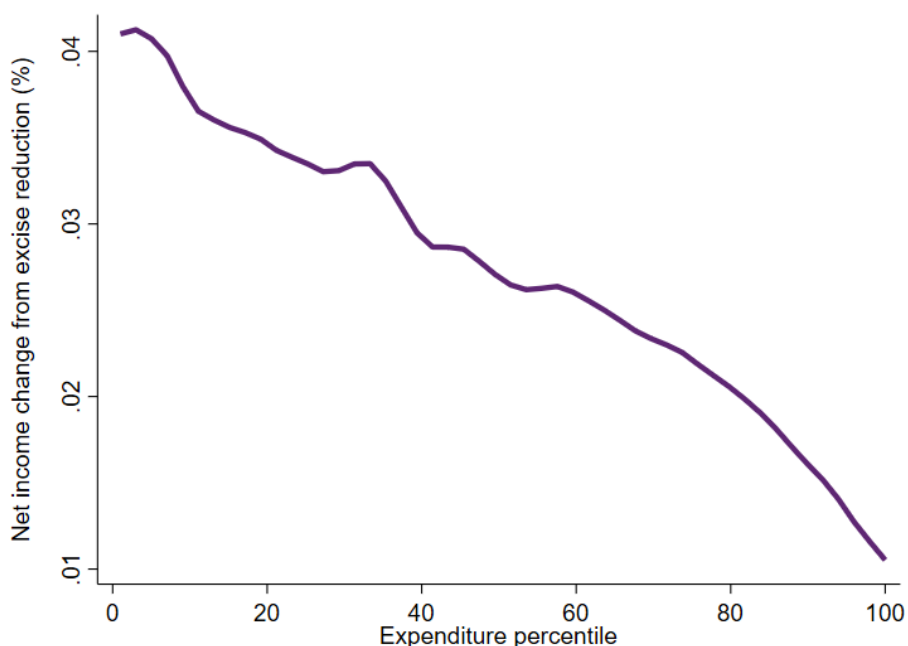
3. Pro-poor tariff reductions

An alternative to ease the pressure of high commodity prices on households is to eliminate high external tariffs on various goods. This policy could be targeted at products which are widely-consumed, have experienced high inflation and currently face high levels of external protection. The EAC *stay of application* mechanism allows policymakers to temporarily deviate from the EAC Common External Tariff to achieve domestic policy objectives – in this case, Uganda could temporarily liberalise tariffs on key products to relieve inflationary pressure.

This policy would also help local producers prepare for reduced rates of external protection under the African Continental Free Trade Agreement. Enhancing domestic competitiveness through lower import tariffs should also reduce prices of domestically-produced substitutes for imported products in the long run. Domestic and regional producers of these products are likely to oppose liberalisation, as they currently benefit from high rates of external protection and as a result, do not have to compete with the world's most efficient producers. However, this has costs for consumers who pay higher prices for final goods.

The impact of tariff liberalisation on domestic retail prices of particular goods is determined by two key parameters – the average tariff rate, and the rate at which tariffs are passed through to domestic retail prices (see *Table 2*).

Table 2: Weighted average tariff rates, import share of consumption and simulated price changes under liberalisation

Product	Weighted tariff rate	Import share of consumption	Price change (%)
Maize	45.06%	0.02%	-0.01%
Matooke	0.52%	2.68%	-0.01%
Petrol	0.00%	100%[1]	0.00%
Soap	3.80%	50%[1]	-1.00%
Sugar	93.26%	16.50%	-12.20%
Veg. oil	7.96%	82.60%	-4.37%
Wheat	34.91%	63.10%	-16.51%

Source: URA Customs data, EAC Gazettes, FAO Supply Utilisation Accounts, IGC Uganda

We calculate weighted average tariff rates for seven high-inflation products (substituting wheat and wheat flour for chapati). Imports originating from within the EAC are given a tariff rate of 0%. Meanwhile, imports sourced from other trading partners are assigned either the:

(a) EAC CET rate;
(b) 'Sensitive item' rate;
(c) Stay of Application rate.

These tariffs are weighted by the volume of trade originating from the EAC and non-preference countries to calculate product-level weighted average tariff rates.

As there are no product-level estimates for tariff pass-through elasticities for Uganda, we use the share of imports in total consumption as a proxy for tariff pass through. This ratio is calculated for each product as the total import volume divided by domestic production less exports plus imports, using data from the FAO's Supply Utilisation Accounts. As the Supply Utilisation Accounts do not

cover non-agricultural products, we have made informed assumptions for fuel and soap.

The change in prices from liberalisation is then calculated as:

$$\Delta p_i = \frac{T_i * M_i}{1 + T_i * M_i + I_i}$$

Where T_i is the weighted average tariff rate for product i, M_i is the imported share of total consumption for product i and I_i is the April 2022 rate of inflation in product i. *Table 2* summarises the weighted average tariff rates, import share of total consumption and estimated price change as a result of liberalisation for each of the seven products. We focus the remainder of our analysis on products in which liberalisation is estimated to have non-negligible price impacts – sugar, vegetable oil and wheat flour.

Fiscal impacts

We estimate that removing tariffs on sugar, vegetable oils and wheat (including wheat flour) would result in a static revenue loss of UGX 2.27 billion in 2022 (0.0014% of GDP). However, if consumers adjust their behaviour by increasing purchases of these imported products, we estimate that higher VAT and withholding tax collections would reduce the net fiscal cost to UGX 1.06 billion (0.0006% of GDP) in 2022.

Distributional impacts

We use the change in prices from removal of tariffs to calculate net consumption effects across the income distribution, using the same methodology discussed earlier. *Figure 10* shows the net consumption gains from the liberalisation of trade in these three products across the income distribution.

Figure 10: Net consumption gains from removal of tariffs on wheat, sugar and vegetable oil
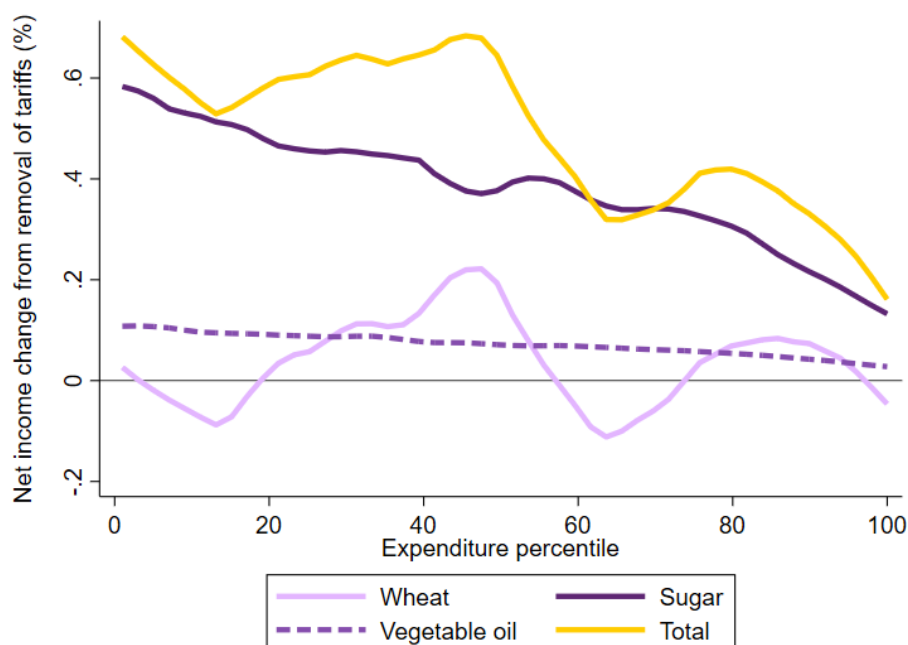
Removing tariffs on sugar has a moderate progressive impact on household welfare, increasing consumption by 0.4% for the average Ugandan household, while liberalising vegetable oil provides very small gains – which are also progressive across the income distribution. Liberalising trade in wheat has a more mixed impact – as many households derive more income from wheat than they consume. Overall, liberalising trade in these three products would provide a moderate gain to Ugandan households, increasing income by around 0.6% for the bottom 60% of the income distribution and around 0.3% for the top two income quintiles.

4. Leverage existing poverty alleviation programmes

An alternative to providing support through the tax system – which would provide benefits to all consumers of a product – is to expand existing poverty alleviation infrastructure in Uganda. Jellema et al (2016) find that Uganda's direct transfer programmess (for example SAGE, which provides support to the elderly) are well targeted and materially improve wellbeing for recipients. However, there is no evidence that more recent cash transfer programmes – for example those provided during the COVID-19 pandemic – consistently reached the intended recipients.

The administration of cash transfer programmes can be challenging in practice, due to the potential for clientelism if using community-based targeting. An alternative approach is to use 'Proxy Means Testing' to design a statistical indicator for eligibility and use this to target households. However, this is also limited by data availability and technical capacity.

Fiscal impacts

We model a cash transfer of 4000 UGX per month for the poorest households, tapering to zero over the first quarter of the income distribution. We estimate a direct cost of UGX 85.9 billion per year (0.049% of projected 22-23 GDP). This does not include any targeting or delivery costs.

Distributional impacts

In theory, expanding existing poverty alleviation programmes should have the most progressive impact of all the policy options that we have modelled. However, the progressivity of this option depends on effective targeting and implementation to ensure transfers reach the poorest households. If this is not in place, it is likely that transfers will be captured by middle-class and rich households.

Recommended policy approach

Fools rush in where angels fear to tread. If the government wishes to adjust to the imported inflation with the smallest reduction in growth and future incomes, erring on the side of minimum direct interventions and maintaining macroeconomic stability is a prudent approach. This would involve caution in adopting new policies as the risks of a rash reaction could outweigh the benefits. Any new interventions should be highly selective and evaluated against three criteria:

- **Ensure any response is affordable** within the Government's broader fiscal consolidation and debt sustainability framework.

- **Any support should be targeted at low-income households.** Poor households have experienced the largest reductions in their consumption from the surge in imported inflation and have the least capacity to absorb price increases.

- **Keep an eye on the big picture.** Focus on reforms which accelerate the Government's structural transformation agenda, and refrain from introducing distortive policies which have to be unwound at a later stage.

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