POLICY NOTES FOR FINANCE BILL 2026

Working Paper GOK-AERC-UCPH-DERG-007

Bringing Rigour and Evidence to Economic Policy Making in Africa

CONSORTIUM POUR LA RECHERCHE ÉCONOMIQUE EN AFRIQUE

POLICY NOTES FOR FINANCE BILL 2026

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1 Introduction

The policy notes in this document are compiled based on guidance from the National Treasury & Economic Planning (NTEP) of the Government of Kenya and key stakeholders in the GOK-AERC-UCPH-DERG Collaborative Research Project, including members of the Project Steering Committee (PSC). The 2025 Policy notes document was comprehensive in addressing completed, ongoing, and planned studies under the Collaborative project. The present 2026 notes are focused on the four in-depth studies delivered as revised/2nd round drafts during March 2026 in accordance with the updated planning matrix dated 4 March 2026, and reflecting inputs from the November 2025 Stakeholder meeting and the work of the research teams since then.

The four underlying studies in focus here are the following (with the numbers being the project identification numbers in the planning matrix, which also includes author names and affiliations):

3.2 Redesigning the Excise Tax System in Kenya: Taxation of Petroleum Product, authored by Simon Basescu, Rose Ngugi, Alex Oguso, Nathan Remcho, and Zainabu Rono.
4.2 The dynamics of personal income, authored by David Garcés Urzainqui, Jane Kanina, and Josephine Mugure.
6.2 Revenue consequences of VAT misreporting in Kenya, authored by Clement Otindo, Jane Muguchu, and Bjørn Bo Sørensen.
6.3 Operational ways of measuring informal payments, authored by John Rand, Nathan Carter Remcho, Finn Tarp, Thomas Westergaard-Kabelmann, and Clement Otindo.

This means that this document reflects work completed in Year 2- 3 of the GOK-AERC-UCPH-DERG Collaborative Research Project, i.e. studies 3.2, 4.2, 6.2, and 6.3, with remaining studies to be completed in Year 4.

This note was put together under the responsibility of the core management team, including Dr. Abbi Kedir, AERC Director of Research and Interim Executive Director; Dr Eldah Onsomu, KIPPRA Executive Director; and UCPH Professor Finn Tarp. We are grateful for and acknowledge the comprehensive and highly valuable policy contributions by the four respective research teams that provided most of the input required to prepare the present summary note in a timely fashion.

2 Redesigning the Excise Tax System in Kenya: Taxation of Petroleum Products

2.1 Introduction

The taxation of petroleum products requires careful consideration due to its widespread impact on government revenues, industry productivity, household spending, and the environment. In Kenya, the close relationship between fuel prices and the cost of living makes it a particularly critical issue. The authors focus their analysis on petrol, which is primarily used for private transportation, and diesel, which is used for transport as well as an agricultural and manufacturing input. These products are especially important, as they constitute a substantial portion of petroleum product consumption in Kenya and are integral to many levels of the economy. This makes the task of reforming taxes on these products crucial, as it seeks to strike the right balance between the cost of living, sustainable environmental stewardship, and economic growth. In the technical analysis, the authors analyse and quantify, where possible, the effect of tax changes on government revenues, household budgets, and other economic and social dynamics.

The price to consumers of petrol and diesel in Kenya is largely constituted by two factors: landing cost and taxes and levies. The landing costs account for 44.9% and 50.1% of petrol and diesel prices, respectively, while taxes and levies account for 45.8% and 41.7%, of which VAT and excise tax are the largest individual components (see Figure 1.1). While VAT is ad valorem, levied at 16%, excise tax is a specific tax (21.95 KES/L on petrol and 11.37 KES/L on diesel).

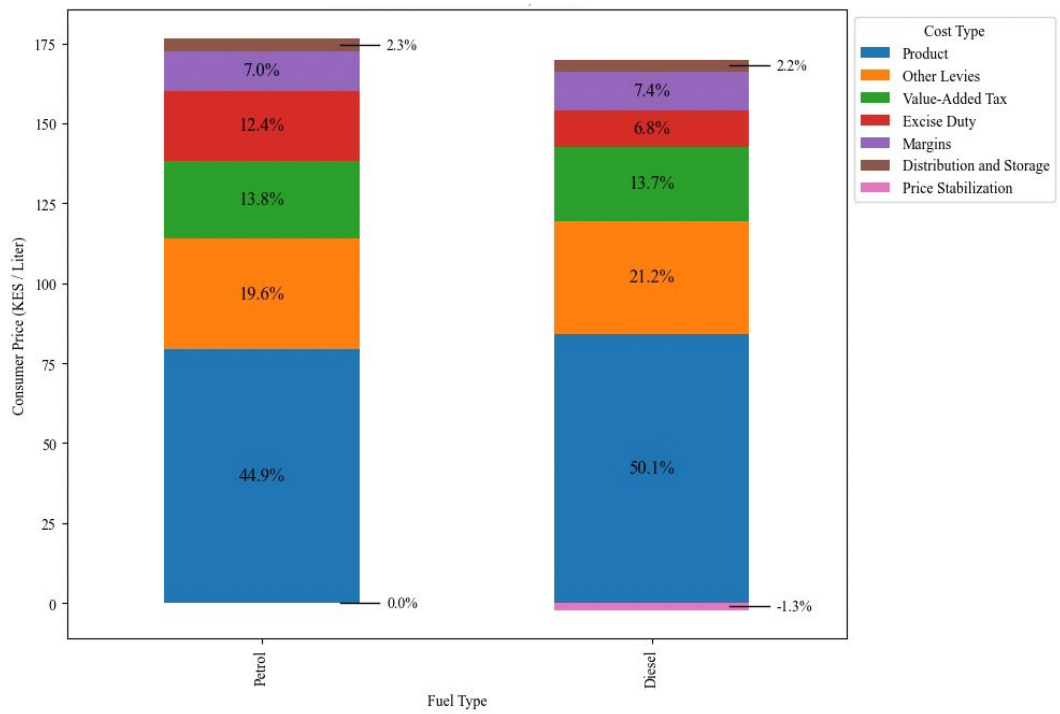

Figure 1.1: Petrol and Diesel Price Breakdown (December 2024)
Source: Authors' illustration using EPRA (2025) data

Taxing petroleum products is relatively easy; it can raise revenues, and it can reduce consumption and subsequently the negative externalities of fossil fuels on the environment (such as CO2 emissions). These benefits must be balanced with the inflationary effects, welfare considerations, and impact on economic growth. Although a reform of the excise tax on petrol and diesel is not itself a comprehensive change aligning petroleum tax policy with Kenyan and international goals, it can be a catalyst for revenue generation and future tax reforms in line with the goals and strategies of the GoK. The analysis considers these competing ideas by analysing, and quantifying where possible, the effect of tax changes on government revenues, household budgets, and other economic and social dynamics.

In what follows, two basic questions are addressed by the authors, whose policy input is incorporated here:

(i) *What happens when the excise tax on petrol and diesel increases?*
(ii) *Who endures most of the tax burden on these products?*

2.2 Revenue implications of excise changes

In FY 2022/2023, excise taxes amounted to KES 266 billion, constituting approximately 13% of government revenue in Kenya (KNBS, 2024). Of this, excise on petrol and diesel amounted to KES 70.5 billion (26.5% of total excise collection). Figure 2.1 shows revenue from excise tax on petrol and diesel from FY 2018/19 to 2023/24. While revenues grew from 2018 to 2021, they have since stagnated and declined slightly. Moreover, the percentage of total excise revenues made up by petrol and diesel excise is falling. First, this could be because the excise tax collected on other goods has increased while collection from petrol and diesel has remained the same. Second, it could be that stagnant or slightly reduced demand has reduced collections.

Petrol and diesel are highly regulated products, largely formal, and are imported and distributed solely by government entities, making them relatively stable in terms of revenue-generating potential. We show in this section that petrol and diesel demand are minimally affected by price, meaning tax increases would yield significant revenues. Given the impact of petrol and diesel prices on inflation and the broader economy, however, understanding the dynamic general equilibrium or economy-wide effects requires a more complex approach beyond the scope of the underlying technical paper.

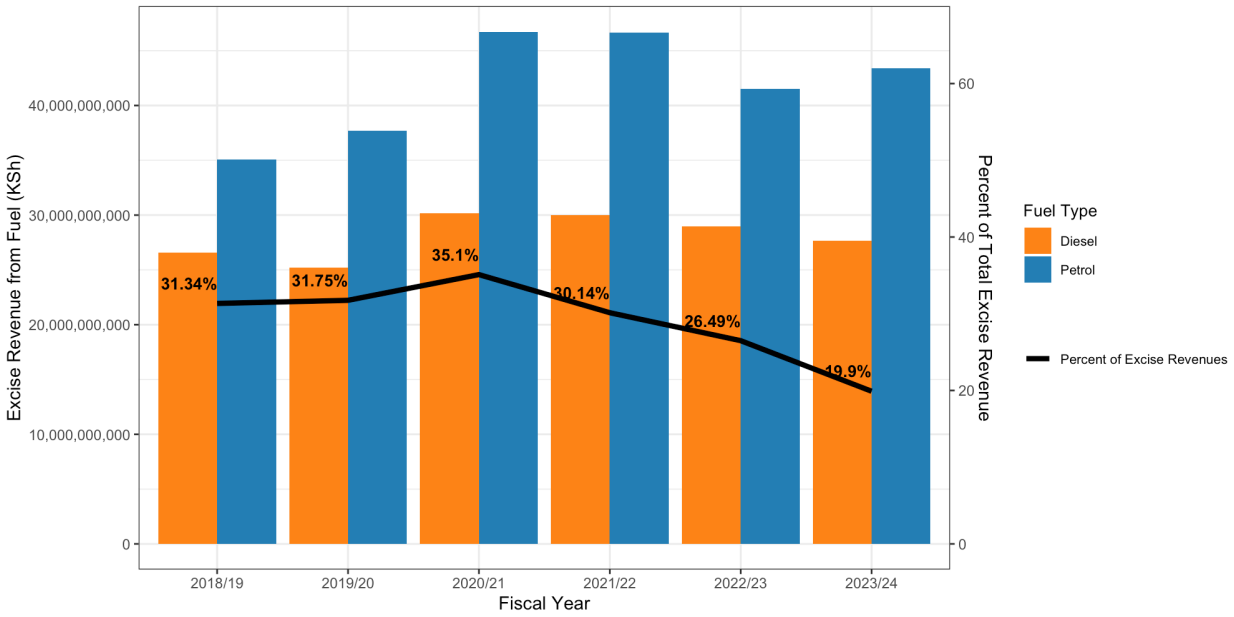

Figure 2.1: Petroleum Excise Revenues Over Time

Note: Figures for FY 2023/24 based on KNBS projections which may overstate total revenue collections.
Source: Author's computations using KRA (2024) and KNBS (2025) data

The low price elasticity of demand for petrol and diesel (see e.g., Havranek et al., 2012; Labandeira et al., 2017), means that moderately increasing excise tax can yield higher revenues without altering consumption behaviour and patterns of fuel. Figure 2.2 below illustrates the trends in prices (adjusted for inflation) and consumption from 2018 to the present in Kenya. It reveals that while prices have increased significantly over this period (largely due to landing costs), consumption has remained relatively stable. Additionally, the consumption data shows considerable month-to-month variability, indicating that factors beyond price are likely influencing consumption.

To estimate the price-elasticity of demand for petrol and diesel, the authors employed various methodologies, including Ordinary Least Squares (OLS) and Instrumental Variable (IV) approaches, while incorporating explanatory variables such as GDP, population growth, and vehicle registrations. Due to the limited data availability inherent to this problem, it is impossible to precisely ascertain the demand elasticity. However, given that the estimated elasticities cluster close to zero, the evidence generated indicates that it is unlikely that the short-run effect of increasing petroleum taxes is very sizeable. This finding aligns with the visual evidence in Figure 2.2, which suggests that consumption is unaffected by price changes.

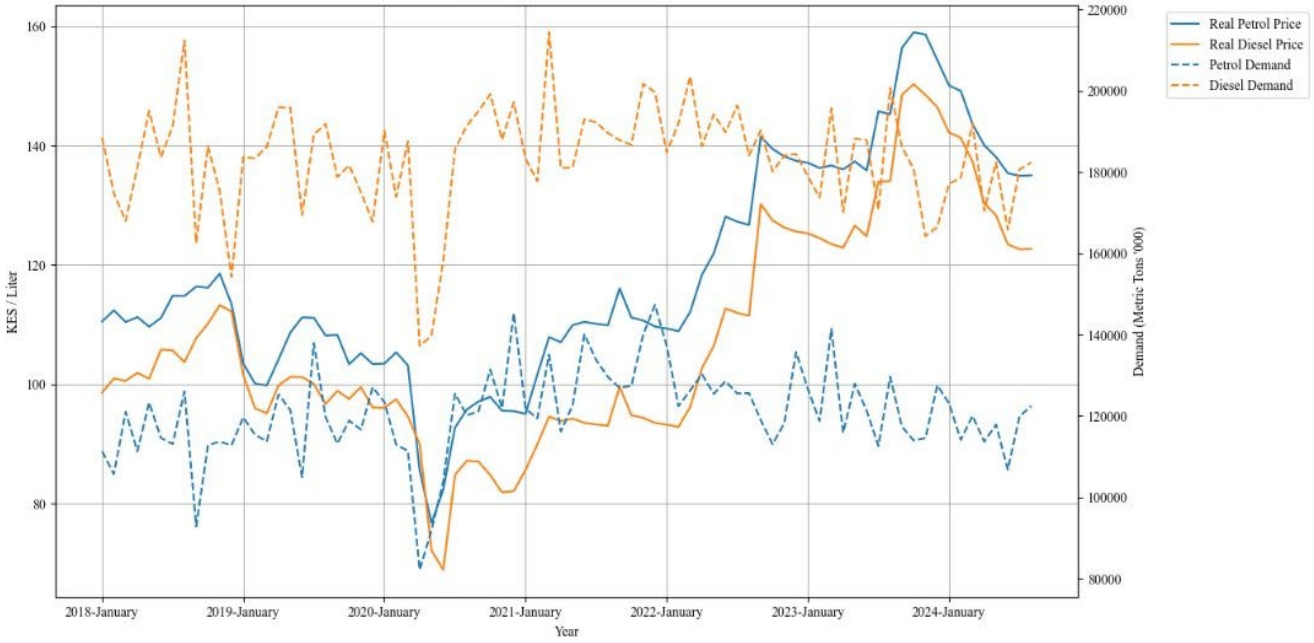

Figure 2.2: Petrol and Diesel Prices and Consumption Over Time
Source: Author's computations using KNBS (2024) and EPRA (2025) data

2.3 Progressivity analysis

Previous literature and general-equilibrium models find that policies that increase fuel prices, or remove fuel subsidies, are progressive in developing countries (Clements et al., 2003; Coady & Arze del Granado, 2010; Coady et al., 2006; Kpodar & Djiofack, 2010; and Solie & Mu, 2015). To examine this relationship in Kenya, these studies use the Continuous Household Survey (2022) to analyse household consumption patterns and simulate how fuel price changes will lead to different inflationary impacts among households with different expenditure levels. In their analysis, they distinguish between petrol and diesel price increases and find that petrol price increases are indeed progressive, but that diesel price increases may be regressive.

The extent to which diesel price increases are regressive is driven primarily by the passthrough rate of diesel to food prices, where a higher passthrough rate leads to more regressivity due to the increase on food spending, which composes most of the budgets for poorer households. Furthermore, the extent to which fuel prices impact household budgets and inflation depends on where the price increases are absorbed. For example, an increase in petrol prices will lead to a direct impact on consumer spending; however, diesel price increases may not translate to increased matatu fares, as they could be absorbed by the matatu companies. Additionally, diesel is used as input to some industrial processes, especially in the agriculture and manufacturing sectors, which could increase consumer prices in both these and downstream industries. The analysis does not capture these second-order effects. These types of relationships add complexity to estimating the full extent of the impact of fuel prices on consumers and the general economy.

Figure 3.1 shows the projected impact on household budgets when diesel and petrol prices are raised by 5%, independently of each other. The horizontal axis shows household expenditure groups such that the poorest households are located to the left in the figure and the richest households are located to the right. The vertical axis plots the percent change in households' overall expenditures due to the price increase. The change is calculated assuming that households simply raise their fuel expenditure in proportion to the price increase. Our simulation does, therefore, not attempt to build a general-equilibrium model which estimates substitutionary effects and other ways in which households shift their budgets when the prices of certain goods go up.

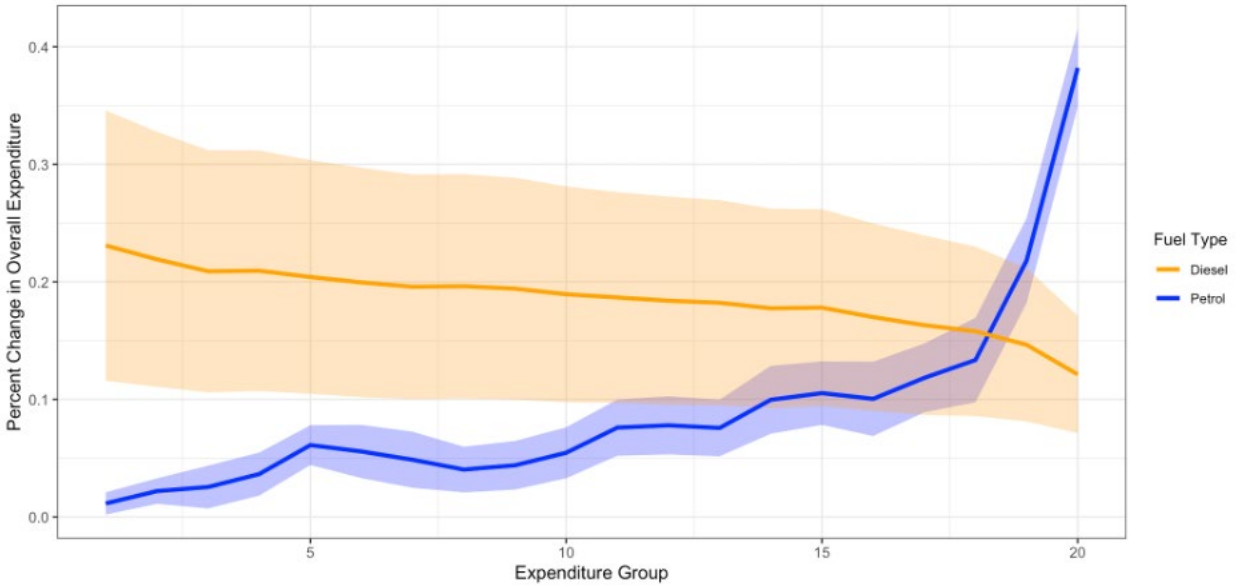

Figure 3.1 Progressivity Impact - 5% Increase in Petrol and Diesel Prices
Note: Shaded area represents upper and lower bound passthrough rate estimates.
Source: Author's computations

A 5% increase in petrol prices shows a clear trend whereby the wealthiest expenditure groups experience a much higher rise in their expenditure levels compared to the poorest expenditure groups, reinforcing the idea that fuel taxes on petrol are progressive. For instance, households with the highest 5% of expenditures experience an average increase of 0.25% to their consumption baskets when petrol prices are increased by 5%, compared to an average increase of 0.03% for households with the lowest 5% of expenditures.

The authors find that an increase in diesel prices, however, has a more significant impact on low-income households than wealthier ones: if diesel prices increased by 5%, the consumption baskets of the highest and lowest 5% of household spending groups would increase by 0.08% and 0.11% respectively.[1] This analysis highlights the importance of understanding the differential effects of fuel price changes on various income groups when designing policy interventions.

[1] These results assume fixed passthrough rates to food prices, public transportation, and private rides.

2.4 Dimensions to consider

Substitution:

The welfare analysis implies that a neutral or negative change to diesel prices alongside an increase in petrol prices would have a progressive impact. Careful consideration, however, must be given to the price differential between the two fuel types, as a significant difference can give users of one fuel type an advantage over users of the other, and risks introducing a fuel-switching effect that encourages use of diesel-powered vehicles, which leads to adverse environmental effects. This may lead to shifting demand of fuel types, increased air pollution due to higher consumption of diesel, which tends to be a more polluting fuel, and other distortions. Currently, petrol prices are approximately ten shillings higher than diesel prices, so commensurate change to petrol and diesel excise increases may need to be considered.

Tax Complexity:

The tax structure on petrol and diesel in Kenya consists of six separate levies and two taxes. Each levy is earmarked for distinct reasons (i.e., road development, railway development, etc.). This structure can provide some advantages but can also be difficult to navigate from both the private and public side. First, by earmarking revenues for development projects related to fuel consumption, such as the development of roads, the GoK can ensure that the price paid by fuel users goes directly into services that benefit them. Whereas excise tax and VAT levied on fuels can be redistributed in any number of ways, the levies, in their design, specifically target issues of importance to the taxpayers. However, with so many different levies and taxes contributing to the final pump price, collection and reporting can be complex and confusing. It is therefore worthwhile reviewing the tax and levy structure on fuels to ensure relevance, adherence, and ease of collection.

Social responses to Tax Changes:

The reliance that many Kenyans have on petroleum products, whether directly consuming it in their own means of transportation or through the utilization of public transport, means that it is a particularly principal issue for the public. The current supply-led problem triggered by war in the Middle East worsens the situation. As such, past tax hikes on fuels in recent years have led to widespread unrest and protests, eroding trust in government and belief in the tax system. This is because, in Kenya, the cost of fuel is often strongly associated with the cost of living, which many Kenyans believe is already too high. It should be expected, then, that any substantial increase in tax on fuels would be met with unrest and discontent from sizeable portions of the public, even if it would technically be a progressive policy. Therefore, any changes to the tax regime should only be implemented gradually to avoid any social or economic shocks. Moreover, many members of the public will look for tangible positive impacts stemming from any tax increase, something the GoK should be wary of when implementing new taxes or reforming taxes on petroleum products.

Regional Analysis:

Situating Kenya's regulation and taxation of petroleum products amongst other East African countries can provide further evidence to inform policy developments. Currently, Kenya is on par in the region in terms of revenue collection from petroleum products, collecting over 12% of its total revenue in taxes and levies on petroleum products in FY 2022/23 (EARA, 2024). This aligns with the values for Tanzania and Uganda and is significantly higher than those for Rwanda and South

Africa. Moreover, the current price of petrol and diesel in Kenya is comparable to those in neighbouring countries, barring some fluctuation. This ensures that fuel tourism does not become a widespread practice and keeps manufacturing, transportation, and other industrial fuel costs competitive in the region. While further analysis of regional trends and practices in petroleum taxation can provide a more nuanced view of Kenya's current situation, the high-level perception stands that Kenya is generally aligned with its neighbours and therefore should be wary of any large policy changes that could create unnecessary shocks.

Environmental implications:

Any policy related to petroleum products has important environmental implications, and this has been widely researched (see e.g., Hickey & Mohan, 2021; Sun et al., 2022). While tax changes on diesel and petrol can cause slight changes in consumption habits, other policies are far more effective at reducing emissions due to the low price elasticity of demand for these products (Havranek et al., 2012). For instance, reducing the number of old diesel engines (i.e., reducing old lorries on the road) by implementing emissions testing for automobiles can be a faster and more effective way to improve air quality and reduce harmful emissions. Additionally, any factor aimed at reducing the consumption of petroleum products should also come with increased access to alternative energy sources. Therefore, for real environmental progress, focusing on the tax regime on petrol and diesel alone will not suffice.

Long Run Effects:

The technical paper focuses on the short-term effects of fuel price changes, where price elasticities of demand are small, and there are fewer behavioural shifts. Eventually, there may be several impacts on transportation habits, manufacturing, and agriculture stemming from changes to fuel taxes and overall price. It is important to consider how fuel price increases are passed onto consumers. For example, if prices increase, this will directly raise the cost of operating public and private transport, which may be passed onto consumers through fare hikes or absorbed by the service providers. The technical analysis incorporates assumptions about passthroughs to passenger transportation and food prices, but the long-run behavioural effects due to increased fuel prices should be considered. They include:

- **Passenger Transport:** There may be shifts in the type and frequency of passenger transport. For example, an increase in private ride fees due to petrol price increases could encourage the use of public transport options.
- **Transport of Goods**: Higher fuel prices, especially diesel, will drive up transportation costs for the movement of goods, affecting both long-haul and local deliveries. This could lead to increased prices for products as businesses pass on the higher logistics costs to consumers, impacting overall supply chain efficiency.
- **Electric Vehicle Substitution**: The demand for electric vehicles (EVs) may increase as consumers seek alternatives that offer lower long-term operating costs. The shift toward EVs could accelerate, especially if the cost of electricity remains more stable compared to fuel prices and there is suitable infrastructure.
- **Operational Costs in Manufacturing**: Companies may face higher expenses for shipping raw materials and distributing finished products. The cost of operating machinery using diesel or petrol will also rise, which could affect profit margins or lead to price hikes on goods.

- **Operational Costs in Industrial Agriculture**: The agricultural sector relies heavily on fuel for machinery and transport. The cost of operating tractors, irrigation systems, and transporting produce will increase, potentially leading to higher food prices and reduced profit margins for farmers. Therefore, the fuel shortage situation is often worse in rural areas than urban centres. This might have a non-negligible impact on the supply and transportation of agricultural goods to urban areas.

2.5 Policy options

The authors present various policy options with analysis on revenue, welfare, and other impacts. Below we present only policy options that are progressive, and the number in parentheses next to the Welfare Impact denotes the relative progressivity of the policy option, where a higher number signifies a greater increase to the consumption baskets of households within the highest expenditure quintile compared to the lowest quintile of expenditures.

Aggregate excise revenues are shown for FY 2023/24, and the authors use these values to predict annual changes associated with the various policy measures. Two predictions emerge: one optimistic (upper bound) with no change in demand which aligns with some studies finding little to no short- or medium-run price elasticities of demand for fuels (see e.g., Chaiwat & Tangvitoontham, 2014; Díaz & Medlock, 2021; Havranek et al., 2012; Labandeira et al., 2017); and one pessimistic (lower bound), using the price elasticities of demand calculated by Agwaya and Ochieng (2021) for Kenya using the Almost Ideal Demand System model (AIDS). Factor changes to VAT are also included in the final revenue figures displayed.

Scenario #1: Petrol Excise: +5 KES, Diesel Excise: N/A

Overall price increase: Petrol: 2.8%, Diesel: N/A

Increase in Excise Rate: Petrol: 22.8%, Diesel: N/A

Annual Tax Revenue Impact:

- Upper bound (0 elasticity): **+9.88B KES**
- Lower bound (petrol elasticity: -.64): **+8.23B KES**

Welfare Impact: Progressive (0.13)

- Raises tax burden on high-expenditure households (top 20%)
- Small change to tax burden on low-expenditure households (bottom 20%)

Other Impacts:

- Increases price difference between petrol and diesel and may encourage substitution
- Primarily affects direct users of petrol (i.e. for private transportation)
- Car owners and private ride users would carry the tax burden

Scenario #2: Petrol Excise: +5 KES, Diesel Excise: +2 KES

Overall price increase: Petrol: 2.8%, Diesel: 1.2%

Increase in Excise Rate: Petrol: 22.8%, Diesel: 17.6%

Annual Tax Revenue Impact:

- Upper bound (0 elasticity): **+14.74B KES**
- Lower bound (petrol elasticity: -.64, diesel elasticity: -.67): **+12.5B KES**

Welfare Impact: Progressive (0.12)

- Raises tax burden on high-expenditure households (top 20%) more than low-expenditure households (bottom 20%)
- Slightly increases price differential between petrol and diesel

Other Impacts:

- Slightly increases cost of transportation of goods, including food
- May have macro-economic consequences due to price passthroughs and increased manufacturing costs
- Increases price differential, particularly for petrol, to neighboring countries which can encourage fuel tourism

Scenario #3: Petrol Excise: +5 KES, Diesel Excise: +5 KES

Overall price increase: Petrol: 2.8%, Diesel: 3%

Increase in Excise Rate: Petrol: 22.8%, Diesel: 44%

Annual Tax Revenue Impact:

- Upper bound (0 elasticity): **+22.03B KES**
- Lower bound (petrol elasticity: -.64, diesel elasticity: -.67): **+18.67B KES**

Welfare Impact: Progressive (0.11)

- Raises tax burden on high-expenditure households (top 20%) more than low-expenditure households (bottom 20%)
- Impact on low-expenditure households' consumption baskets is non-negligible
- Less progressive than Scenarios #1 and #2

Other Impacts:

- Keeps petrol to diesel price-differential steady (does not encourage substitution)
- May have macro-economic consequences due to price passthroughs and increased manufacturing costs
- Increases price differential to neighboring countries which can encourage fuel tourism

Note: Only first-order effects on direct fuel consumption are incorporated in the simulations. Petrol Price February 2025: KES 176.58; Diesel Price February 2025: KES 167.06.

2.6 Conclusion

Multiple factors should be carefully considered when reforming the tax structure, and specifically the excise tax, on petroleum products. The authors identify welfare as the chief consideration, inspired by the events related to past policy changes related to the tax on fuel products. Focusing on this but also considering other factors such as development goals and environmental damages, three potential amendments to the excise tax on petroleum that could raise revenues stand out. They highlight that small increases to the excise tax on petrol could yield significant government revenues with minimal distortions to both poorer households and the broader

economy. Diesel, however, is more linked to industrial operations and the transport costs of consumer goods. Changes to diesel prices would therefore have a higher impact on poorer households and more of a ripple effect through other sectors. Furthermore, the political economy framework in Kenya must be acknowledged, given the highly politicized nature of petroleum pricing and its social implications. Thus, it is important that the GoK consider public attitudes and the current complex structure of petroleum pricing before introducing any additional tax on these products.

It is also important to note that the integrated nature of petrol and diesel into many aspects of the Kenyan economy and society means that reforming the excise tax should be considered alongside Kenya's broader goals. Kenya Vision 2030 lays out a blueprint for a sustainable future and emphasizes the need to industrialize, improve infrastructure, and increase oil exploration, while also transitioning away from fossil fuels.

To address these sustainability goals, the GoK can consider introducing environmental regulations and policies. For example, introducing emissions testing policies can reduce vehicle pollution and traffic, and create new revenue streams through fees on high-emission vehicles. It may also be in the interest of the GoK to consider a carbon tax to earmark revenues specifically to offset the negative environmental impacts of petroleum product consumption. These policies merit further analysis, as they may incur costs to businesses and individuals reliant on older vehicles and would require capacity development to implement.

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3 *The Dynamics of Personal Income*

3.1 Introduction

The title of the technical paper underlying the study was changed to "***Data combination for inequality measurement and progressivity assessment***." What follows reflects the background note by the authors, who draw on data combination procedures for inequality measurement and standard methods in structural and effective progressivity analysis to present a comprehensive analysis of the Kenyan PIT (Personal Income Tax) structure. This effort contributes an understanding of the redistributive impact of PIT among formal workers, who constitute much of the PIT tax base, but also as a whole, taking into consideration the substantial number of predominantly low-income workers outside the tax net. Both concerns are normatively relevant, as PIT should reduce societal inequality, while tax burdens should as well be equitably distributed among those bearing them. For full details on the results and analysis summarized here, we refer to technical paper 4.2, particularly to the progressivity analysis in Section 5 of that paper.

3.2 Problem statement

The analysis of both structural and effective progressivity confirms that the Kenyan Personal Income Tax (PIT) system is progressive, but the intensity and distribution of progressivity vary across income levels. Structurally, the system is front-loaded: most of the increase in the effective average tax rate (ATR) occurs at the lower end of the income distribution, driven primarily by personal reliefs and narrow lower tax bands. Many taxpayers face a steep jump to the 30% rate soon after the exemption threshold. Progression across middle and higher formal sector incomes is comparatively modest, producing a flatter effective tax schedule at higher levels. The limited number of tax bands prevents gradual tax increases that could better reflect taxpayers' ability to pay. This structure creates perceptions of unfairness, insufficient progressivity and a heavy burden on middle-class income earners.

This pattern is mirrored in effective progressivity measures: post-tax inequality is substantially reduced both among formal workers and income earners overall (the Gini falls by 5.0 and, respectively, 3.5 points), and the positive Kakwani index (0.20 for formal workers) indicates that the PIT generates meaningful redistribution. Conversely, increases in social contributions, though redistributive in aggregate, reduce effective progressivity (Kakwani index of 0.12) because these contributions are proportional or capped. The findings indicate that the PIT system achieves meaningful redistribution by shielding lower-income earners but offers weaker incremental progressivity at levels corresponding to middle and higher formal sector wages, highlighting both the system's achievements and the opportunities for targeted reforms to strengthen fairness and redistribution across the full spectrum of incomes.

3.3 Summary of key findings

First, the results confirm a strong rationale for a progressive PIT structure. While mainly capturing employment income, the data combination exercise reveals remarkably elevated levels of interpersonal pre-tax income inequality (Gini coefficients consistently above 0.6, top 1% of income earners accounting for around 20% of total income) which contrast with the notably lower figures for typically used measures based on consumption expenditure. These findings support the case for strengthening progressivity in future reforms.

Second, personal relief remains a key driver of progressivity but also shapes the structure of the system. The large personal relief implies that a significant share of the labour force remains outside

the tax net, which is one of the main redistributive features of the current system. However, the structural progressivity analysis shows that most of the increase in the effective tax burden occurs at the point where the first positive tax liability begins. This explains why progressivity appears substantial in effective terms (as reflected in the Gini and Kakwani results), while relatively weak across the middle of the formal sector income distribution. In other words, the system redistributes meaningfully between the poor and those at higher income levels and becomes relatively flat afterwards.

Third, the current structure creates scope for improving progressivity through lower-income rate design rather than further increases in relief. Marginal tax rates at the bottom influence average tax rates across the whole distribution, so that increases in personal relief are rather costly as compared to other measures (see Kanina et al., 2025[2] for revenue implications). The simulations show that introducing additional lower tax bands, with modest rates below 25%, increases the Kakwani index and strengthens redistribution across formal workers without significantly affecting overall inequality or revenue, if adequately calibrated. From a policy perspective, this suggests that lowering marginal rates for the first group of effective taxpayers, introducing more gradual progression, would improve both structural and effective progressivity.

Fourth, progressivity at higher income levels remains limited and can be strengthened. The structural analysis shows that a large share of effective taxpayers faces similar marginal tax rates, resulting in a relatively flat average tax rate beyond the lower-middle income range. From the effective progressivity standpoint, the redistributive impact of the system would also increase if progressivity were strengthened at the top. In practical terms, this means that increasing tax rates at the upper end of the current 30% band would both raise additional revenue and improve redistribution across formal workers and across the entire income distribution.

Fifth, social contributions increase the overall tax burden but weaken effective progressivity. While recent reforms to social contributions increase redistribution in aggregate terms, the effective progressivity results show a clear decline in the Kakwani index when these contributions are included. This reflects the fact that contributions such as NSSF are proportional or partially regressive due to minimum and maximum thresholds. From a policy perspective, this suggests the need to better align statutory contributions with the progressive structure of the income tax system.

Finally, progressivity is also affected by the treatment of different income types. Concerns about income shifting following the increase in top marginal PIT rates highlight the importance of aligning the taxation of labour income with the taxation of other income sources highly concentrated on the top of the distribution. Many income types subject to withholding tax such as commissions, professional fees, rental income, and capital gains are taxed at lower rates than top marginal PIT rates. Narrowing this gap would strengthen effective progressivity while also reducing incentives for tax avoidance.

3.4 Conclusions and key policy recommendations

The analysis of both structural and effective progressivity confirms that the Kenya's PIT system is progressive. To further increase progressivity, policymakers may consider:

[2] Kanina, J., Mugure, J., Garces, D., & Nato, J. (2025). *Assessing the impact of personal income tax reform in Kenya with administrative data: Behavioral responses and distributional implications* (AERC Working Paper No. 3969). African Economic Research Consortium.

i. Introducing a more gradual progression of tax rates among the first effective taxpayers with rates below 25% to balance structural progressivity and enhance redistributive impact.

ii. Strengthening progressivity at higher income levels by raising tax rates at the upper range of the current 30% band to generate additional revenue and improve redistributive performance.

iii. Reviewing social contributions to reduce regressivity and improve fairness among formal workers.

iv. Aligning taxation of other incomes with the progressive structure of the PIT system to strengthen progressivity and reduce incentives for tax avoidance.

4 Revenue Consequences of VAT Misreporting in Kenya

4.1 Introduction

The findings highlighted here reflect the background note prepared by the three authors of technical paper 6.2, and include key areas that policymakers could strengthen to limit the revenue consequences of VAT misreporting in Kenya. It is important to keep in mind, however, that the recommendations are based on an analysis that lacks data from recent years, where KRA has implemented large new reforms, such as the VAT Auto-populated Return (VATAR), which may have changed the reporting landscape significantly.

4.2 Conduct targeted and risk-based compliance checks and audits

The analysis shows that it is possible to use double-reported transaction-level VAT data to estimate taxpayers' tendency to misreport in business-to-business transactions. KRA should use this or similar analytical frameworks to conduct targeted, risk-based compliance checks and audits.

Perhaps most intriguingly, the analytical framework produces a firm-level misreporting estimate (Ri), thereby allowing for firm-level targeting, as opposed to size-, sector-, or TSO-based targeting. Estimation of firm-level misreporting could, in theory, be integrated and automated in KRA's IT systems and thereby assist officials in selecting specific firms for compliance checks and audits.

Alternatively, the analysis identifies several groups of firms that could be targeted and an aggressive set of measures could and should be designed. First, large firms appear to account for most misreporting in absolute terms. This suggests that the highest revenue impact from misreporting may be found among these firms. Second, a key result is that, in relative terms, smaller firms misreport more, and the same is true for firms operating in sectors such as Construction as well as in smaller taxpayer offices such as Kajiado and Kabarnet.

4.3 Exploit third-party data through improved data integration

Kenya has made substantial progress in reducing VAT misreporting through digital technology. Systems such as eTIMS and VATAR strengthen compliance in business-to-business transactions through better invoice-level reporting and cross-validation, while also increasing visibility of other transactions, including some sales to final consumers. However, important gaps remain.

As enforcement improves in well-monitored areas, firms are likely to shift evasion to less controlled margins. Business-to-consumer transactions, for instance, are not double-reported, allowing firms to conduct transactions outside of eTIMS and underreport sales. Imports face a similar single-reporter issue, and deductions cannot be cross-checked against seller (exporter) declarations.

KRA should strengthen internal and external data integration to close these loopholes using third-party information. This would involve controlled integration of VAT reporting systems with selected internal and external third-party data sources. Data from the banking and payment systems could help KRA monitor business-to-consumer transactions. Integrating VAT and customs data would help KRA verify whether firms hold valid import certificates when claiming deductions from imports.

Procurement data from large taxpayers and institutions could also prove useful. Ultimately, enhanced data integration would improve detection of VAT misreporting, reduce reliance on resource-intensive audits, and enhance the accuracy and integrity of VAT declarations.

4.4 Build analytical capabilities

To fully exploit the potential of expanded and higher-quality data, KRA should strengthen its analytical capacity through sustained investment in both people and systems. Based on existing close collaboration, the AERC can be a vehicle for effective capacity building for the staff of KRA. Building staff capabilities -- particularly in data science, economics, and risk analytics -- is essential to translate data into actionable compliance insights. In parallel, KRA should continue embedding analytical capabilities into IT systems such as VATAR to automate routine checks, flag anomalies, and integrate data across sources. These systems should support real-time or near-real-time analytics and feed into user-friendly dashboards that enable continuous monitoring of compliance risks.

4.5 Help small firms comply through taxpayer education and simplified filing

The analysis reveals that smaller firms are less compliant in relative terms, i.e., they tend to misreport a larger share of their sales. Since misreporting is often driven by unreported transactions (the extensive margin), non-compliance among small firms may partly reflect capacity constraints or limited understanding of VAT requirements, rather than purely deliberate evasion. To address this, KRA could strengthen targeted taxpayer education programmes aimed at small firms, focusing on basic VAT principles, record-keeping, and the use of digital tools such as eTIMS. Complementing this, the adoption of simplified filing regimes or pre-filled returns (such as the VATAR) could also reduce compliance costs and errors.

5 Operational Ways of Measuring Informal Payments

5.1 Introduction

The title of this study was modified slightly to "***Detecting trade fraud risk and assessing revenue loss – The case of Kenya***." The technical paper examines cross-country distributional patterns in cost, insurance and freight – free on board freight – free on board (CIF-FOB) trade unit value ratios to identify risks of import undervaluation and overvaluation. Building on these patterns, the authors of the paper develop a Trade Fraud Risk Index (TFRI) that ranks countries by their exposure to trade fraud and allows tracking of risk over time and across sectors. Using trade unit values and trade volumes, and incorporating WTO tariff rates, they assess both the magnitude of CIF-FOB value gaps and the associated potential customs revenue losses at the HS (harmonised system) 4-digit level.

To complement the quantitative analysis, the authors incorporate qualitative fieldwork conducted at the Port of Mombasa in 2024, including interviews with clearing agents, CFS personnel, truck drivers, and port workers. These field-level insights illuminate the mechanisms through which misreporting, undervaluation, misclassification, and bribery occur in practice. The qualitative evidence helps explain how fraud persists despite improvements in Kenya's overall TFRI performance and provides context for sector-specific value gaps identified in the data.

Applied to Kenya, the TFRI shows a marked improvement in trade fraud risk between 2005 and 2019, accompanied by a decline in estimated tariff revenue losses. The fieldwork findings, however, highlight persistent vulnerabilities within customs verification and inspection processes. Together, the TFRI and qualitative assessment offer actionable tools for customs administrations seeking to identify, understand, and mitigate trade fraud both internationally and domestically.

5.2 Literature and methodology

For many low- and lower-middle-income countries, import duties, excise taxes, and value-added taxes on international trade collectively constitute a substantial proportion of total tax receipts. Yet these revenue streams are vulnerable to various forms of customs manipulation and misreporting, particularly undervaluation of imports, misclassification of goods, and the exploitation of discretionary authority in customs procedures. Among these practices, the systematic undervaluation of imported goods is widely regarded as one of the most pervasive and difficult-to-detect forms of trade fraud. Because most customs administrations rely on ad valorem tariff structures, where duties are levied as a percentage of the declared value of imports, misreporting the value of goods creates an immediate and often substantial loss of public revenue.

The technical paper underlying this section of the policy notes contributes to this growing literature by developing and applying a Trade Fraud Risk Index (TFRI), constructed from the distributional characteristics of CIF-FOB trade unit value ratios derived from CEPII's Trade Unit Values (TUV) database. Rather than identifying fraud through anomalies in individual transactions, the approach examines systematic patterns in the distribution of unit value differences between

importers' (CIF) and exporters' (FOB) data. The empirical regularities uncovered, namely, the clustering of countries into Laplace-, lognormal-, and exponential-type distributions, provide a novel basis for quantifying the relative risk of trade fraud across countries, over time, and across industries.

The TFRI is designed to serve as a parsimonious but powerful diagnostic tool. Its construction relies on two components that capture distinct distributional regimes associated with distinct levels of corruption risk and institutional quality. High-income, low-corruption economies tend to exhibit Laplace-like CIF-FOB distributions, characterised by tight concentration around the expected insurance-and-transport cost margin. By contrast, low-income and high-corruption contexts tend to exhibit exponential-type distributions, where large shares of CIF-FOB ratios fall substantially below unity, a pattern strongly suggestive of widespread undervaluation. The resulting index has broad geographical and temporal coverage, is easy to update, and produces comparable measures of trade fraud risk for more than 200 countries from 2000-2019.

Although the construction of the TFRI is quantitative, the interpretation of its results requires careful consideration of institutional, behavioural, and operational dynamics within customs systems. For this reason, a significant contribution of the present paper is the integration of a qualitative fieldwork component conducted at the Port of Mombasa in November 2024. The Port of Mombasa is the principal gateway for Kenya's international trade and the largest container port in East Africa. It represents a high-volume, high-stakes environment in which customs valuation practices, enforcement mechanisms, and the behaviours of state and non-state actors interact to determine the effectiveness of trade regulation.

The field study involved semi-structured interviews with clearing agents, container freight station personnel, truck drivers, and other port workers, as well as direct observation of inspection facilities, document-handling processes, and cargo-flow procedures. These qualitative insights illuminate the mechanisms through which undervaluation and misreporting occur, the incentives faced by traders and customs officials, and how procedural discretion and institutional fragmentation create opportunities for collusion, facilitation payments, and avoidance of formal inspection triggers. The qualitative results also offer a valuable interpretive lens for understanding the sector-specific value gaps observed in the quantitative data, particularly in high-risk industries such as textiles, ceramics, and refined petroleum products.

5.3 Contribution

The contribution of the study is therefore threefold. First, it introduces a new Trade Fraud Risk Index grounded in distributional properties of CIF-FOB ratios, offering a widely applicable tool for identifying and ranking trade fraud risk both internationally and in the case of Kenya. Second, it extends existing approaches to value-gap estimation by incorporating trade volumes and WTO tariff structures to quantify potential revenue losses at a prominent level of product disaggregation. Third, it enriches the empirical analysis with granular qualitative evidence from a major African (i.e., Kenyan) port, offering a rare view into the behavioural and institutional mechanisms underpinning observed patterns in trade data. Hence, triangulation of qualitative evidence with quantitative evidence provides a better understanding of the pervasive problem of trade-related fraud both in Kenya and elsewhere in Africa.

Taken together, this integrated methodology advances current understanding of trade fraud dynamics by bridging the gap between macro-level data analysis and micro-level institutional practice. The Kenyan case demonstrates that while quantitative indicators can capture broad improvements in trade integrity, qualitative insights are indispensable for identifying where fraud persists, how it is operationalised, and what types of policy interventions may be most effective. The approach thus provides a template for future research and for policymakers seeking to design targeted, evidence-based strategies to reduce trade fraud and strengthen customs revenue mobilisation.

5.4 Conclusion and recommendations

Kenya offers an especially relevant case for the joint methodological approach employed in the underlying technical study. Over the past two decades, Kenya has implemented substantial reforms in customs administration, including digitalisation of the declaration process, expansion of non-intrusive inspection technologies, adoption of risk-management protocols, and alignment with international standards under the East African Community (EAC) Customs Union. Kenya also has a longer history of governance and anti-corruption reforms than many of its regional counterparts, including being the first signatory worldwide to ratify the United Nations Convention Against Corruption (UNCAC). Despite these efforts, Kenya's performance on global corruption indexes has improved only modestly, and anecdotal evidence suggests that illicit behaviours remain resilient within parts of the customs system.

The contrast between Kenya's slow institutional progress and the more substantial improvements observed in its TFRI performance raises important questions about the relationship between general corruption indicators and specific forms of trade fraud. Indeed, the index reveals that Kenya's CIF-FOB distributions have shifted markedly toward the Laplace regime between 2005 and 2019, suggesting a substantive decline in the frequency of severe undervaluation. The estimated CIF-FOB trade gap and associated tariff revenue losses also decline substantially during this period, from approximately 31% to 7% of assessed FOB values. At the same time, the qualitative field evidence confirms the persistence of pockets of misreporting, including bribery to avert inspection flags, collusive misclassification schemes, and systematic undervaluation facilitated by information asymmetries between importers and customs officials.

By triangulating quantitative patterns with qualitative observations, the authors demonstrate that improvements in aggregate trade fraud indicators can coexist with enduring vulnerabilities at the operational level. The findings highlight the importance of considering institutional configurations, incentives for corruption, and the political economy of customs enforcement when interpreting statistical patterns in trade data. They also underscore the need for sector-specific analysis, as aggregate improvements may mask persistent risks in industries where tariff differentials are high, goods are easily misclassified, or inspection processes are particularly susceptible to discretionary interference.

In sum: Kenya has made notable progress in reducing trade fraud risk between 2005 and 2019, as reflected by its improving Trade Fraud Risk Index, indicating that customs reforms have indeed had tangible effects. Despite this progress, trade fraud has not been eliminated, and vulnerabilities

remain within customs verification and inspection processes, particularly at operational levels such as the Port of Mombasa. The decline in estimated tariff revenue losses from roughly 31% to about 7% of assessed FOB values suggests that Kenya has strengthened its fiscal capacity through improved import valuation practices. Importantly, fraud has become more selective and adaptive rather than systemic. However, certain sectors remain disproportionately exposed to trade fraud, implying that aggregate improvements mask concentrated risks. The findings highlight the importance for Kenya of risk-based, data-driven customs enforcement, rather than relying solely on transaction-level inspections or general corruption indicators.

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