

Report

Institute for Fiscal Studies

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Published by

The Institute for Fiscal Studies

The Ministry of Finance, Ghana

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Preface

This report was prepared by the Institute for Fiscal Studies, UK (IFS) through the Centre for Tax Analysis in Developing Countries (TaxDev) in collaboration with the Revenue Policy Division at the Ministry of Finance, Ghana and the Ghana Revenue Authority.

The authors would like to thank the UK Government Public Finance Centre of Expertise – funded by UK International Development – for financial support, through the grant to TaxDev. TaxDev is a collaboration between IFS and ODI Global, and aims to promote more effective tax policymaking in low- and middle-income countries through research, applied analysis, and partnerships with policymakers. Co-funding from the ESRC-funded Centre for the Microeconomic Analysis of Public Policy (ES/Z504634/1) is also gratefully acknowledged.

The authors would also like to thank Francis Amankwah-Poku, Mawutor Anku, Ernest Berko Asiedu, Benjamin Chackson (all Ministry of Finance, Ghana), Sylvia Ankamah, Thomas Agorsor (both Ghana Revenue Authority), and the participants at the VAT gap validation workshop in Accra, Ghana for their comments and help with securing additional data.

The views expressed in this report are those of the authors and do not necessarily reflect the views of the funders or of the other individuals or institutions mentioned herein, including IFS, which has no corporate views, the Ministry of Finance, Ghana, and the Ghana Revenue Authority.

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Executive summary

The value added tax (VAT) is the cornerstone of Ghana's revenue system, plays a central role in the country's Medium-Term Revenue Strategy (MTRS) and has recently (January 2026) seen significant reforms to bring its design more into line with standard international practice. This report estimates the size and composition of Ghana's VAT gap – the difference between actual VAT revenue and the revenue that could be raised under full compliance – over the period 2013 to 2024, prior to the recent reforms, using the International Monetary Fund's RA-GAP methodology and detailed national accounts data.

We find that Ghana's VAT gap over this period was large relative to comparator countries in Africa. In 2024, the compliance gap is estimated at nearly 70% of potential VAT revenue under the policy framework then in place, equivalent to GHC69 billion or 5.9% of GDP. The average compliance gap in African countries is around 40% of potential revenue or 3% of GDP.

Non-compliance is higher in the domestic economy than at the border. The domestic compliance gap reached 77% of potential revenue in 2024 and accounts for around two-thirds of the total compliance gap. The wholesale & retail trade, construction and manufacturing sectors together are responsible for about 80% of domestic revenue losses. While domestic compliance has improved modestly since 2013, the improvements were most visible until 2022, and the gap has widened again since then. By contrast, compliance at Customs is relatively higher, with a gap of 57% of potential revenue in 2024, but it has deteriorated significantly over time.

Policy choices also play a major role in limiting VAT revenues. Existing exemptions and reliefs reduce potential VAT revenue by about GHC48 billion or 4.1% of GDP, assuming full compliance. Exemptions of agricultural products alone account for almost two-thirds of the domestic expenditure gap, making them by far the largest single source of forgone VAT revenue.

Taken together, the results suggest that meaningful increases in VAT revenue will require a dual strategy. Improving compliance, especially in a few large domestic sectors, offers the biggest immediate revenue gains. At the same time, reviewing and rationalising VAT exemptions, particularly in agriculture and parts of the service sector, could substantially broaden the tax base while remaining consistent with Ghana's broader revenue and equity objectives. The VAT gap analysis presented in this report provides a framework for targeting both enforcement and policy reform more effectively.

Key findings

1. **Ghana's VAT compliance gap is large by international standards.** In 2024, the compliance gap reached 5.9% of GDP, which is equivalent to GH¢69 billion. This represents almost 70% of potential VAT revenue under the current policy framework, which means Ghana collects less than one-third of its potential VAT.
2. **Compliance has worsened since 2013**, when the compliance gap was 64% of potential revenue or 4.7% of GDP. The sharpest increase in the compliance gap is seen after 2022.
3. The patterns of overall compliance are driven mostly by falling compliance for imports. Even though the **import VAT compliance gap is relatively lower** and stood at 57% of potential revenue in 2024, **it has increased substantially since 2013**, when the gap was 38%.
4. In contrast, the degree of domestic non-compliance is higher and stood at 77% of the domestic VAT potential in 2024. However, the **domestic compliance gap improved slightly between 2013 and 2022, but compliance has deteriorated again since then.**
5. A small number of sectors account for most of the revenue losses. Wholesale & retail trade alone accounted for almost half (47%) of the domestic compliance gap in 2024. Construction and manufacturing together account for a further 33%. These **three sectors generate around 80% of total domestic VAT revenue losses.**
6. Some export-oriented sectors appear overtaxed. Mining & quarrying and petroleum & gas consistently show negative compliance gaps, indicating **insufficient VAT refunds or unclaimed input credits.**
7. Existing **VAT exemptions reduced potential revenue (under full compliance) by GH¢48 billion or 4.1% of GDP in 2024. Exemptions of agricultural products dominate the domestic expenditure gap and account for almost two-thirds (64%) of the revenue forgone in the domestic market, which is equivalent to GH¢20.2 billion.**

1. Introduction

The value added tax (VAT) is one of the key sources of government revenue in Ghana. In 2024, it accounted for 21% of total tax revenue – the second-largest component of government revenue after the corporate income tax (CIT). VAT is charged together with the National Health Insurance Levy (NHIL), the Ghana Education Trust Fund Levy (GETFL) and the COVID-19 Health Levy (CHL), which form part of the combined sales tax system in Ghana and as of 2024 accounted for an additional 11% of tax revenues. In recent years, revenue from the VAT and the levies has increased steadily as a share of GDP, reaching 4.3% in 2024.

Going forward, Ghana's first Medium-Term Revenue Strategy (MTRS), published in September 2023, outlines a plan for further domestic revenue mobilisation efforts over the next four years. By 2027, Ghana aims to raise its tax-to-GDP ratio by more than 5 percentage points through a series of tax policy and administration reforms (Ministry of Finance, 2023).

The VAT system is a key component of this effort. In line with the MTRS, the new government conducted a comprehensive review of the VAT system in 2025. Following recommendations of development partners such as TaxDev (Warwick et al., 2024) and the International Monetary Fund (Banda et al., 2025; Baunsgaard and van Oordt, 2025), it delivered a major reform of the VAT and levies system in 2026. The key changes include:

- abolishing the CHL, which was a temporary revenue measure to finance emergency spending associated with the COVID-19 pandemic;
- removing the NHIL and the GETFL from the VAT base, and allowing for their input deductibility, which marks a return to an earlier system;
- increasing the VAT registration threshold from GHC200,000 to GHC750,000 to return to its real value as of 2018.

Even though the changes introduced in the 2026 Budget reduce the overall tax burden, Ghana's new combined sales tax rate of 20% remains one of the highest in Africa and is comparable to rates in European countries (Warwick et al., 2024).¹ The International Monetary Fund (IMF) recommends further reducing the VAT rate when this is accompanied by broadening of the VAT base.

¹ The standard VAT rate is 15% and the levies have a cumulative rate of 5%; putting the VAT and levies rate together, the combined sales tax rate is 20%.

The existing VAT system provides for a wide range of exemptions. Despite their significant revenue costs, it is not always fully clear whether they are achieving their declared policy rationale. Exemptions for basic goods and services such as food and utilities are usually meant to fight poverty and inequality, but evidence suggests that they are generally poorly targeted from a distributional perspective. Richer households benefit more in absolute cash terms from most such exemptions (and, in the case of fuel, benefit most relative to their total expenditures too), and a simple universal cash transfer would help the poor more and at a lower fiscal cost (Iddrisu et al., 2023; Warwick et al., 2022 and 2024). As a result, there is scope for reviewing and removing some of the existing VAT exemptions to raise additional revenue and the MTRS already includes some of these plans.

In addition to policy changes, the government remains committed to improving administration of the VAT system. For example, even though existing audits uncover significant VAT liabilities, a large portion of those remain unpaid (Warwick et al., 2024). Therefore, improving compliance with the existing system and the collection of assessed liabilities, and working to reduce informality in the economy, can also lead to significant improvements in revenue performance.

VAT gap analysis is a crucial component of these efforts. The VAT gap represents the difference between actual revenue and potential VAT revenue under a comprehensive VAT system with full compliance. It provides an estimate of the revenue forgone both due to policy considerations (such as the presence of exemptions and reduced rates) and due to non-compliance. Detailed analysis of the VAT gap helps the Revenue Authority identify areas where increased enforcement can be most effective and has the highest revenue potential, although it is not intended to produce precise point estimates for individual sectors (random audit programmes are more appropriate for this).

The Ghana Revenue Authority (GRA) already conducts regular estimations of VAT compliance using a consumption-based top-down approach. As part of its latest engagement with the government of Ghana, the IMF also conducted an assessment of the VAT gap using the consumption-based approach (Baunsgaard and van Oordt, 2025). This report aims to complement these exercises by conducting a more detailed analysis that decomposes the VAT gap at the sectoral level and estimates the policy gap separately as well. We estimate the VAT gap in Ghana over the years 2013–24 using the IMF RA-GAP method (Hutton, 2017).

We find Ghana's VAT compliance gap in 2024 to be close to 70% of potential revenue under policies then in place, which is equivalent to GHC69 billion or 5.9% of GDP. Most of the revenue loss arises in the domestic economy, particularly in the wholesale & retail trade, construction and manufacturing sectors. Existing VAT exemptions reduced potential revenue by a further GHC48 billion or 4.1% of GDP in a system with full compliance.

The report proceeds as follows. Section 2 provides a detailed overview of the methodology used to estimate the VAT gap. It starts by summarising the main principles of the IMF RA-GAP methodology and the key input data – supply and use tables. It then explains the individual steps in estimating potential VAT revenue and different approaches to measuring actual VAT revenue. Finally, it provides details on the application of the method to the case of Ghana, including all adjustments and assumptions and additional sources of data. Section 3 discusses the estimates of the VAT gap in Ghana, including the compliance gap and the policy gap. Both economy-wide and sectoral results are discussed. Section 4 then concludes.

2. Method of estimating the VAT gap

The VAT gap represents the difference between potential VAT revenue in a system with full compliance and a broad tax base, and actual VAT revenue. There are different ways to measure both potential and actual VAT revenue. Bottom-up approaches utilise individual taxpayer data from their tax returns and audits to estimate the degree of non-compliance and then use statistical inference to generalise the findings to the entire economy. In contrast, top-down approaches use statistical and macroeconomic data to estimate economy-wide potential revenue. This report relies on a top-down approach based on the IMF RA-GAP method (Hutton, 2017) of calculating the VAT gap. We make several adaptations to this method to account for Ghana's economic, VAT and data context.

2.1 IMF RA-GAP methodology

The IMF RA-GAP method calculates potential VAT by estimating the value added created in the economy – that is, the difference between the value of outputs produced and the value of inputs used in the production process. Because VAT is a destination-based tax that is charged based on the location of the consumer, VAT is also charged on imports, while exports are tax-free (zero-rated). Specifically:

- $\text{Potential VAT} = \text{VAT on imports} + \text{VAT on output sold domestically (i.e. net of exports)} - \text{VAT paid on intermediate consumption and investment}$

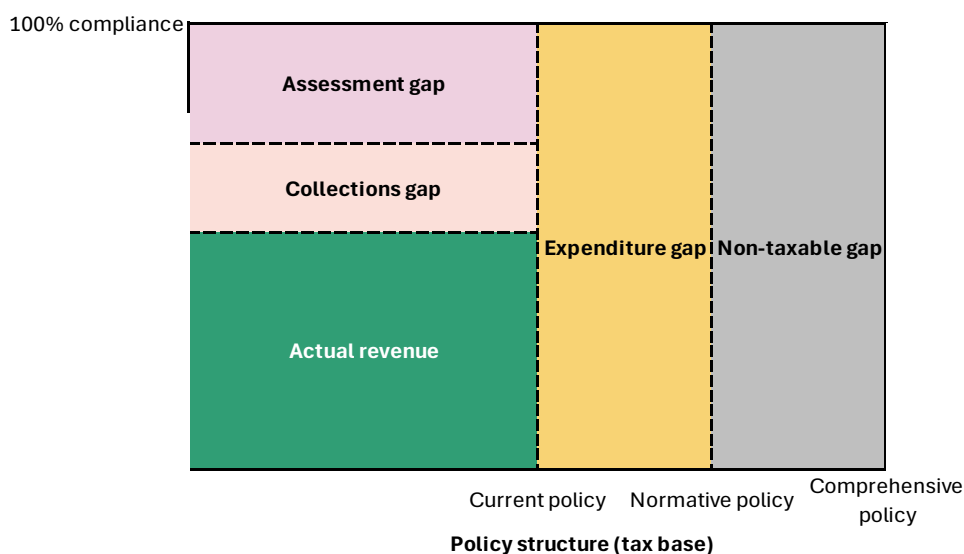
Where this information is available at the level of individual sectors of the economy, potential VAT can be estimated separately for each sector. Comparing this with sectoral VAT revenue yields VAT gap estimates separately for individual sectors and helps identify areas where increased enforcement can be most effective.

The total VAT gap can also be broken down into several components, as shown in Figure 2.1:

- The **compliance gap** measures the difference between potential revenue under the existing policy structure with all its VAT exemptions and reduced rates, and actual revenue. This is the key measure that captures the extent of non-compliance by taxpayers. Depending on the different types of non-compliant behaviour, it can be broken down further.

- The **assessment gap** compares potential revenue under the existing policy structure with the tax liabilities declared by the taxpayer or assessed by the Revenue Authority. It captures the intentional or unintentional non-declaration of taxable value added that has not been identified by the Revenue Authority (for example, during audits).
- The **collections gap** then compares the declared/assessed liabilities with actual revenue collections. It measures the extent to which the VAT liability that has been identified by the Revenue Authority is actually paid or not (for example, due to liquidity constraints, bankruptcy or simple non-payment).
- The **policy gap** captures the revenue impacts of policy choices that reduce the VAT base and is measured assuming full compliance. Depending on the nature of the policy choices, we can distinguish between different components of the policy gap.
 - The **expenditure gap** measures the difference between the potential revenue under a *normative* policy structure where all activities widely recognised as feasible to tax are fully taxed, and the potential revenue under the existing policy structure. In deriving the potential revenue under the normative policy structure, exemptions are applied only to a limited number of hard-to-tax activities. The expenditure gap provides an estimate of the fiscal impact of conscious policy choices meant to achieve certain objectives and is in principle similar to tax expenditure estimation.
 - The **non-taxable gap** compares the potential revenue under a *comprehensive* policy structure where all consumption and investment, both public and private, is fully taxed with the potential revenue under the normative policy structure used to calculate the expenditure gap. It captures the effect of exemptions for administrative reasons (such as for home production and subsistence agriculture).

However, it is often difficult to draw a clear line between the expenditure and non-taxable gaps. Defining which activities are not feasible to be taxed is not straightforward and different people take different approaches. On the one hand, it would be realistically unenforceable to tax home production for own consumption. On the other hand, exemptions under the normative structure typically include public administration as well as other publicly provided services such as education and healthcare. To the extent that some of these services charge direct fees (and hence could be considered as direct sales to consumers), those activities could potentially be taxed. The approach that we take when defining the non-taxable activities is described in more detail in Section 2.5.

Figure 2.1. Components of the VAT gap

Source: Adapted from figure 2 of Hutton (2017).

Alongside administrative data on actual tax revenues, supply and use tables (SUTs) serve as the main source of information for the calculation of the VAT gap. The SUTs are used to estimate the potential VAT revenues under different policy structures (either current, normative or comprehensive).

2.2 Supply and use tables

Supply and use tables are national accounts statistics that serve as the main source of information for the computation of GDP. They capture the structure of the entire economy, broken down into individual **sectors** or **industries** and individual **products** and describe how these products are produced and utilised by different sectors of the economy.

SUTs consist of two tables. First, the **supply table** includes details about which products are available in the economy and where they come from. Specifically, they can either be produced domestically by local industries or be imported. In particular, for each product, the supply table provides us with:

- Total supply at basic prices = Domestic output + Imports

These are all recorded in *basic prices*, which are the prices that suppliers receive. The wedge between basic prices and the price that the users pay (i.e. *purchaser prices*) consists of *net taxes* levied on those products (for example, customs duties, excises and any unrecoverable VAT, net of any subsidies) and *trade & transport margins*. These margins represent the total cost of trade

and transport embedded directly in the price of products sold. It is the additional mark-up that wholesalers, retailers and distributors put on other industries' products before selling them to customers.² Note that for the providers of these trade and transport services, the margins are recorded with a negative value in the supply table. This is to ensure that the services are not double-counted because their value is already embedded in the purchaser price of other products and not purchased directly by customers. Accordingly, the total supply at purchaser prices can be expressed as:

- Total supply at purchaser prices = Total supply at basic prices + Net taxes on products
+ Trade & transport margins

The **use table** then describes how these individual products are used, whether as inputs into further production, for final consumption (by households, non-profit organisations serving households (NPISH) or the government) or for exports. Inputs comprise of either goods and services immediately used in the production process, such as raw materials (so-called *intermediate consumption*), or the acquisition of fixed assets used in the production process for more than a year, such as machinery or buildings (called *investment* or *gross fixed capital formation (GFCF)*). These are all recorded in *purchaser prices*. For each industry, its gross value added can then be calculated as:

- Gross value added = Domestic output (at basic prices)
– Intermediate consumption (at purchaser prices)

The use table also contains *inventory change*, which accounts for any differences between what is available in the economy over a given period and what is used in that same period. If the economy produced or imported more than is needed by industries and consumers in a given period, the surplus would be stockpiled for future use. Conversely, if production falls short of actual use in a given period, the remaining demand is met by using previously stockpiled goods. The total use can be calculated as:

- Total use = Intermediate consumption + Final consumption (by households, NPISH and government) + GFCF + Inventory change + Exports

SUTs are balanced by definition at the product level. This means that for each product, total supply has to be equal to total use (both measured at purchaser prices):

- Total supply at purchaser prices = Total use at purchaser prices

² This is different from profit margins but instead represents the gross output of trade and transport sectors that is meant to cover both their costs and their profits.

To ensure that SUTs always balance, the supply table often contains an additional column called *CIF/FOB adjustment*. In national accounts statistics, exports are recorded at *free on board (FOB)* values – this is the price that includes trade and transport costs up to the point of exit from the exporter country. On the other hand, imports are recorded at *cost, insurance and freight (CIF)* values, which include the FOB value of goods plus the cost of services (transport and insurance) provided between the point of exit of the exporter country and the point of entry of the importer country. The CIF/FOB adjustment is a balancing variable that ensures these services are not double-counted in the supply table. They are already part of the CIF value of imports of goods but are also recorded separately as imports of services if provided by non-residents and as domestic output if provided by resident firms.³

Another issue to keep in mind when it comes to international trade is that exports and imports are defined by the residence of the purchaser, not the location of the transaction. This means that purchases by non-residents are recorded as exports in the SUT even if they occur within the country – for example, tourists or foreign students purchasing goods and services in the country. Similarly, comparable purchases of the country's residents abroad are recorded as imports of those goods and services.

2.3 Estimating potential VAT revenue

Recall that for each sector of the economy:

- Potential VAT = Import VAT + Output VAT – Input VAT

Individual components of potential VAT can be estimated using information in the SUTs together with information on the design and operation of the VAT system.

Import VAT

Potential import VAT is estimated as follows:

- $\text{Import VAT} = (\text{Goods imports} + \text{Services imports} \times \text{Share VAT-registered}) \times \text{Effective tax rate}$

where the effective tax rate is the combination of the statutory VAT rate on individual products and the rate of VAT exemptions that these products enjoy.⁴

³ See section D of chapter 5 in United Nations (2018).

⁴ Most VAT exemptions are defined at the product level, but some countries provide targeted exemptions for certain importers (such as government institutions or specialised industries).

When calculating the VAT on imports, it is important to make a distinction between imports of goods and imports of services. VAT on imported goods is usually collected directly at Customs from all importers regardless of whether they are VAT-registered or not.⁵ On the other hand, VAT on imported services is collected as part of domestic tax returns using the reverse charge principle, and so only the share of imports by registered taxpayers will attract VAT.⁶

Output VAT

Potential output VAT is estimated as follows:

- $\text{Output VAT} = (\text{Domestic output} - \text{Exports} - \text{Inventory change})$
 $\times \text{Effective tax rate} \times \text{Share VAT-registered}$

To calculate domestic output VAT liabilities, exports (which are zero-rated) and change in inventories (because VAT is charged on actual sales, not on production) are subtracted from the total output of a sector. Only VAT-registered firms charge VAT on their share in total output, where the effective tax rate again accounts for both the statutory VAT rate and any VAT exemptions.

Input VAT

Potential input VAT is estimated as follows:

- $\text{Input VAT} = (\text{Intermediate consumption} + \text{Investment})$
 $\times \text{Effective tax rate} \times \text{Share VAT-registered} \times \text{Share non-exempt}$

Finally, only VAT-registered firms can claim input VAT on their purchases. To the extent that firms sell VAT-exempt products, they can only claim input VAT in proportion to the share of their output that is non-exempt. The effective tax rate in this case reflects not only exemptions of individual products but also the extent to which inputs are purchased from other VAT-registered firms.

The main policy parameters – the effective tax rate, including the rate of exemptions of individual products, and the registration threshold – are determined by the modelled policy structure and need to be estimated using external data.

⁵ This in principle includes households, NPISH and government institutions. In practice, some countries tend to exempt certain importers such as diplomatic missions or government institutions, and provide a VAT exemption on low-value imports (such as online purchases by households).

⁶ Some businesses providing services directly to households are usually required to register and remit VAT even if they are not resident in the destination country.

As explained in Section 2.1, the compliance gap is estimated using potential revenue under the current policy structure that reflects the share of products subject to any reduced rates or VAT exemptions as well as the share of output (or imports) by VAT-registered firms. To define the normative policy structure used to estimate the expenditure gap, analysts need to make a judgement about the type of activities that are considered hard to tax and then estimate their share in total output from existing data sources. This includes a judgement about whether small firms under the registration threshold are considered hard to tax. Our approach is described in more detail in Section 2.5. Finally, under the comprehensive policy structure used to estimate the non-taxable gap, all activities are considered fully taxable at the standard VAT rate.

Further adjustments

Several additional adjustments to the information in the SUTs are necessary to calculate potential VAT.

First, the supply table is shown at basic prices and the use table at purchaser prices, but we need to derive the VAT base, which is somewhere in between. It includes the trade and transport margins and net taxes on products other than VAT (such as import and excise duties) but excludes the VAT itself. Therefore, we need to split the net taxes shown in the SUTs into VAT and other non-VAT taxes. We then add the non-VAT taxes to imports and domestic output, and remove any VAT embedded in business inputs.

Second, several variables in the SUTs (such as imports, exports and investment) are typically available only at the product level. We therefore need to make assumptions about splitting them into individual sectors as well. Moreover, a portion of investment as recorded in the SUTs is usually done directly by households (for construction and purchases of dwellings) and by the government (for public infrastructure and business services such as IT systems). This needs to be split off as well because it is subject to final VAT rather than being part of deductible business inputs.

Third, we know the CIF/FOB adjustment ensures there is no double-counting of services in the supply table, but this needs to be reflected differently in the modelling of potential VAT. The VAT for the services provided during international transit is paid at Customs as part of the CIF value of the consignment. Therefore:

- When these services are provided by non-residents and are separately recorded as imports of services, the CIF/FOB adjustment value needs to be subtracted from the value of the respective service import. From a tax perspective, this ensures we do not expect the VAT to be declared separately in domestic tax returns as import of services using the reverse charge principle.
- When the services are provided by domestic firms and are recorded as part of domestic output, the CIF/FOB adjustment value needs to be added as an additional export to balance the

equations. From a tax perspective, this again ensures we do not expect VAT to be charged on this as domestic output.

Finally, we might consider adjusting imports and exports for cross-border purchases. Purchases of foreigners within the country are recorded as exports, which in general are zero-rated for VAT, but in this case they are often subject to VAT.⁷ Similarly, purchases of residents abroad are recorded as imports, which in general are subject to import VAT, but in this case are instead typically subject to VAT in the overseas country in question.

2.4 Actual VAT revenue

To estimate the VAT gap, potential revenue is compared with actual revenue. There are different measures of potential revenue depending on the policy structure under consideration, but they all rely on statistical macroeconomic data. Since macroeconomic data refer directly to the period when the actual economic activity occurred, the potential revenue is also calculated for the given period of economic activity. It is therefore important that the actual VAT revenue refers to the same period in order to ensure consistent and relevant comparison.

One can measure actual revenue simply based on cash collections. However, due to the system of filing VAT returns, tax liabilities are paid only after the period of economic activity. Data for cash collections in January of a given year actually refer to the economic activity over December (in the case of monthly taxpayers) or the whole last quarter (in the case of quarterly taxpayers) of the previous year. Therefore, the use of cash revenue data is not appropriate for VAT gap analysis because the time periods are not aligned and the data not comparable.

An alternative would be to use tax return data, which refer directly to the period when the actual economic activity occurred. VAT returns measure the assessed VAT liabilities, but we know that not all identified liabilities are paid in practice (or on time). It is therefore not advisable to rely purely on VAT liabilities assessed in tax return data because this can underestimate the total VAT gap by ignoring the collections gap.

The preferred method of measuring actual VAT revenue is to use accrual-based net revenue where cash transactions are reallocated to the periods in which the liabilities arose. However, when excess credits are carried forward and used to offset future tax liability, the actual cash transaction will contain a mix of tax liability generated in a given period and excess credit from previous

⁷ Some countries allow tourists leaving the country to claim VAT refunds on their purchases or to buy tax-free (for example, in duty-free shops at international airports).

period(s). To account for this phenomenon by reallocating each part to its respective period, assessment data on excess credits would be required as well.

2.5 Application to the case of Ghana

In this report, we estimate Ghana's VAT gap for the years 2013 to 2024. The analysis focuses on the VAT alone and does not assess the performance of the levies after their decoupling from the VAT in 2019. This section discusses the details of the underlying data and the application of the IMF RA-GAP method in the context of Ghana.

Data

The estimates in this report are based on the 2013 SUT for Ghana, which is the latest SUT available. The original 2013 SUT for Ghana is a matrix of 20 products $\times$ 20 industries. Each product can be considered a primary output of its respective matching industry. However, there is one slight mismatch. Out of the 20 industries in the SUT, sector *B06 (Extraction of crude petroleum and natural gas)* is recorded only as a subset of a more aggregate sector *B05-09 (Mining and quarrying)*. The latter thus includes both oil- and non-oil-related mining activities. In order to turn these into two separate, mutually exclusive sectors, we subtract the values of the *B06* sector from the values of the *B05-09* sector in both the supply table and the use table to generate a new *Mining and quarrying (excl. oil and gas)* sector. The respective product *P12 (Crude petroleum and natural gas)* is not recorded as a simple subset of the broad product category *P11-16 (Ores and minerals)* but as its own product, so no adjustment is required on the product level.

The VAT revenue data come from the Ghana Revenue Authority (GRA). These are annual cash revenues and cover different years depending on the source of data used. Aggregate revenue data are available for the entire time series 2013–24 and are split into collections by the Customs and Domestic divisions of the GRA. Only revenues collected by the Domestic division are disaggregated at the sectoral level and they cover the years 2014–24. To compute the 2013 sectoral revenue, we scale the 2014 sectoral data based on the aggregate revenue growth between 2013 and 2014. However, the revenue aggregates derived from the sectoral data do not always match the official aggregate revenues reported by the GRA. To ensure consistency, we therefore rescale the sectoral revenue to match official aggregates.

Moreover, the definitions of the sectors in the different GRA data differ slightly from the national accounts statistics in the SUT. We therefore later aggregate the data to align properly with national accounts statistics.

From 2017, information on VAT refunds by sector are available as well, which allows us to compute net VAT revenues at the sectoral level. Because the level of VAT refunds fluctuates

significantly between individual years, we make no assumptions about the amount of VAT refunds before 2017.

The aggregate cash revenues include VAT interest and penalties collected in the given year. While we have separate data on interest and penalties for years 2021–24, these represent at most 0.05% of total VAT revenue, and we therefore make no adjustments for this in any of the years.

Finally, we do not have any data on the difference between the total VAT declared by taxpayers or assessed by the GRA and the revenue that was actually collected. As a result, we cannot split the compliance gap into the assessment gap and the collections gap.

SUT uprating

Given that the underlying macroeconomic data in the SUT are from 2013, we need to uprate the data in order to estimate potential revenue and the VAT gap for subsequent years. One simple approach we use is to uprate potential VAT based on the nominal GDP or consumption growth. However, this ignores any underlying changes in the structure of the economy and can introduce bias especially when uprating over long periods.

An alternative and more accurate approach is to uprate all the individual components of the SUT separately – an approach that underpins our main results. The Ghana Statistical Service (GSS) publishes data on the individual components of GDP in two separate tables which show different levels of disaggregation. We use the *GDP by Expenditure Approach* and the *GDP by Production Approach* tables together in the uprating process.

The *GDP by Expenditure Approach* data contain information on the values of consumption by households, NPISH and the government, GFCF, imports, exports, and change in inventories. These can be used to directly uprate the relevant components of the SUT, keeping the share of individual products fixed.⁸

The *GDP by Production Approach* data contain the value added disaggregated at the sectoral level. The gross value added then needs to be decomposed into domestic output and intermediate consumption. We assume the relationship between output and intermediate consumption is given by a sector-specific productivity factor (calculated as output divided by intermediate consumption, which shows how much more a sector produces relative to its inputs). We then assume this productivity factor grows in line with real GDP per capita relative to the 2013 baseline. Finally,

⁸ The change in inventories is already detailed at the product level in the GSS data, so it can be used directly.

the aggregate output and intermediate consumption of each sector are split into individual products based on their existing product shares.

The GSS data also contain information about net taxes in each year, which need to be split into individual products as well. Some products (electricity, gas and water, and sewage and waste) are subsidised on aggregate. We assume that the subsidy rate remains the same and net taxes on these products grow in line with their output rather than in line with overall net tax revenues. The net taxes on the remaining products are then split into individual products based on those product shares in the original 2013 SUT. Finally, trade and transport margins are uprated based on the growth of output of these services and split into individual products based on their existing shares as well.

This approach ensures that the uprated SUT remains balanced on aggregate and matches the official GDP statistics. However, the principle that supply must equal use no longer holds for each individual product separately. While this is unlikely to affect the aggregate results too much, it can introduce some bias to the estimates of the VAT gap at the sectoral level. Nevertheless, this is the standard approach recommended by the IMF and is more accurate than the alternatives of simply uprating everything based on nominal GDP or consumption growth.

Policy structure

Estimating the key policy parameters under different policy structures requires additional external data. To calculate the compliance gap using the current policy structure, we first estimate the share of individual products that are VAT-exempt:

- We use customs data from the Ghana Customs Management System (GCMS) covering years 2016–19, which include information on the value as well as all the taxes and fees paid at Customs for every individual consignment. Based on the correspondence between the Harmonised System (HS) codes used in the customs data and the Central Product Classification (CPC) codes in the SUT, we can directly calculate the share of CIF at the product level that was VAT-exempt. These exemption shares are then used primarily for the modelling of exemptions of imported goods.
- We also use information from the Ghana Living Standards Survey (GLSS) 2016/17 wave together with the statutory exemptions of individual products to estimate the share of VAT-exempt goods and services that households consume. This is then used primarily for modelling domestic exemptions and for the exemptions of imported services.
- The exemption share for trade and transport margins is calculated endogenously in the model based on the mix of goods that are traded in the economy.

Second, we estimate the share of the value added in each sector of the economy produced by firms under the VAT registration threshold:

- We use the 2014 Integrated Business Establishment Survey (IBES) and compare firms' value added to the VAT registration threshold of GHC120,000 applicable at the time.

To split the policy gap into the expenditure and non-taxable gaps, we need to identify the share of activities that are, in principle, taxable and those that are considered too hard to tax and are therefore exempt under the normative policy structure.

- For public administration, we assume that VAT could potentially be levied on some administration fees (for example, issuance of passports or driving licences). Based on the government revenue from fees & charges in the 2013 Budget as a share of total output of public administration services in the SUT, we assume this represents around 5% of all public administration services. The remaining 95% is considered non-taxable because it often does not involve any direct sale of services to consumers.
- Based on Ghana's Healthcare Sector Report (Ghana Investment Promotion Centre, 2022), the share of private spending in total healthcare expenditure is around 60%, which is considered potentially VAT-able. Only the remaining 40% of expenditure, assumed to be paid directly by the government for healthcare that is free at the point of use, is considered hard to tax.
- Data in the Ghana Education Sector Report (GCB Bank, 2023) indicate that around 60% of total education spending in 2018 was done privately and can potentially attract VAT. Only the remaining 40% of expenditure paid directly by the government for free public schools is considered hard to tax.
- We do not account for imputed rent in any way. Imputed rent should be recorded under real-estate services but in the 2013 SUT, 92% of real-estate services are used as inputs by firms, and households consume close to zero real-estate services directly.
- To estimate the taxable share of financial services, we look at the share of fees & commissions in the total income of financial institutions. According to statistics of the European Central Bank, banks in the Euro Area earned up to 30% of their income from fees & commissions (European Central Bank, 2013 and 2016). This share is used for the potential VAT from imported financial services. The remaining 70% (coming from margin-based financial services) is considered non-taxable. Similarly, based on the financial statements of a set of large banks in Ghana, local banks earned around 15% of income from fees & commissions. This share is used for the potential VAT from domestic financial services, and the remaining 85% is considered non-taxable.
- To estimate the share of agricultural output that is taxable, we need to strip out subsistence farming. According to the data in the 2015 Social Accounting Matrix for Ghana, 25% of agricultural output and 5% of fishing is produced directly by households for their own consumption and therefore considered non-taxable.
- We assume the VAT registration threshold is part of the normative structure, which means that small entities under the threshold are considered hard to tax.

Assumptions and adjustments

To calculate potential VAT from the available data in Ghana, several additional assumptions and adjustments need to be made.

First, when adjusting the values of imports and exports based on the *CIF/FOB adjustment* column, we assume that services between the point of exit of the exporter and the point of entry into Ghana are primarily provided by non-residents. The values of *CIF/FOB adjustment* are first used to reduce imports of respective services recorded in the supply table. Only if the values of *CIF/FOB adjustment* exceed the values of service imports do we assume that the residual services are provided domestically by Ghanaian firms. This residual amount is added to the exports of the respective services in the use table.

Second, when accounting for the consumption of non-residents in Ghana and the consumption of Ghanaian residents abroad, no further adjustments are made to the SUT directly. Ideally, we would want to adjust the imports and exports of all products based on external data, but this is not possible in our case due to lack of such additional data.

Instead, when calculating the VAT base, we identify certain products as non-tradable and treat them differently. Their use is assumed to take place directly at the place of production. In the 2013 SUT for Ghana, this affects only the imports and exports of accommodation & restaurant services. The imports are assumed to be done fully by residents abroad and therefore do not attract any domestic VAT. Similarly, the exports of accommodation & restaurant services are considered to be consumed by non-residents in Ghana and are thus subject to the VAT in the same way as final household consumption. No partial adjustment is done for other products such as manufactured goods. Given that the extent of such additional cross-border trade is likely small relative to the size of the whole economy, we do not expect this assumption to affect the results significantly.

We make further assumptions on top of the basic equalities that hold in every SUT.

- The total supply of goods in the economy can be either used domestically or exported. We assume that no imports are directly re-exported. Therefore, only domestic production gets exported, and imports are only directly used domestically.
- All aggregate variables (imports, margins, taxes, exports, GFCF, inventory) are split proportionally into individual sectors, based on the sector's share of the total supply or use of the given product.
 - To estimate the portion of capital investment done directly by households, we use OECD statistics on the share of dwellings in total investment. The data indicate that the share is smaller in smaller and poorer countries. We therefore assume a 10% share for Ghana, which is at the lower bound for OECD countries and close to the recent share of around 13% in South Africa.

- To estimate the portion of capital investment done by the government, we look at the expenditure on acquisition of non-financial assets in the 2013 Budget. The GH¢5.2 billion represents around 17% of total investment in 2013, and this share is used for subsequent years as well.
- We assume that households do not import any products directly (other than the consumption of residents abroad).⁹ This means that all imports are only done by firms and the government.
- We assume that the trade & transport margins apply only to domestic output that is used domestically (i.e. not exported). This implies that any imports of inputs or exports of outputs are done by firms directly procuring external services and not trading through any specialised trading companies that embed the costs of transport and trade into the final price of the product.
- Net taxes are assumed to apply only on products used domestically and not on exports.
- Changes in inventories are assumed to represent only the stockpiling of unsold output of domestic firms, and not any stockpiling of inputs.

⁹ This does not exclude households importing indirectly through intermediary importing agents.

3. Results and interpretation

The headline results presented in this section are based on the method of detailed and disaggregated SUT uprating discussed in Section 2.5. Results based on alternative methods of uprating based on nominal GDP or consumption growth are sometimes shown for comparison.

3.1 Economy-wide estimates

We first examine the aggregate compliance and policy gaps over time. The estimates at the economy-wide level are not very sensitive to the underlying modelling assumptions. Neither the proportional splitting of aggregate variables into sectors nor the SUT uprating changes the overall economic aggregates entering the model. Slight inaccuracies can arise from the differential rate of exemptions of different sectors and products, but these are relatively accurately derived from external data.

Compliance gap

We estimate the compliance gap in 2024 to be 69.5% of potential revenue under the contemporaneous policy structure in place in 2024. That was worth around GH¢69 billion at the time or 5.9% of GDP, almost 2.3 times higher than actual VAT revenues of 2.6% of GDP. Expressed as a share of total consumption, the implied c-efficiency of the VAT, which measures actual VAT revenues relative to potential VAT revenues in a system with perfect compliance where the standard rate applies to all consumption, is equal to 20%.¹⁰ The estimated compliance gap is in line with the latest estimate from the IMF of 70% of potential revenue and the c-efficiency of 20.1% (Baunsgaard and van Oordt, 2025).¹¹ These are very large estimates by international standards, with the average compliance gap across 38 African countries of around 40% of potential revenue or 3% of GDP (Barra and Prokof'yeva, 2025) and the average c-efficiency in sub-Saharan Africa of around one-third (Baunsgaard and van Oordt, 2025).

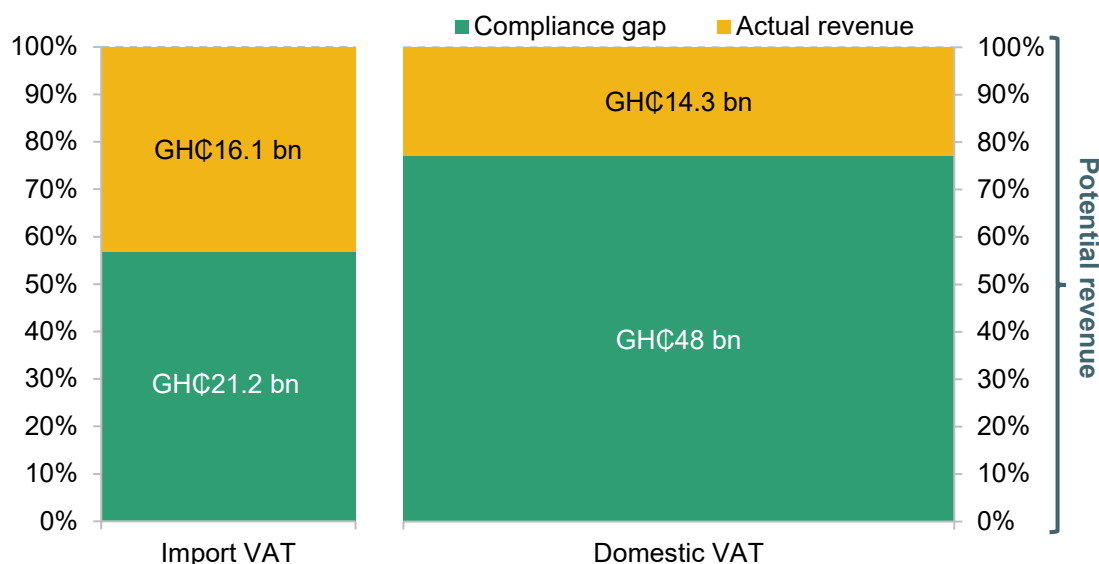
As shown in Figure 3.1, the estimated compliance gap is driven mostly by non-compliance within the domestic market, where the compliance gap of GH¢48 billion was equivalent to 77% of

¹⁰ More formally, c-efficiency is calculated as $\text{Revenue} / \{\text{Standard rate} \times (\text{Consumption} - \text{Revenue})\}$.

¹¹ The IMF calculates the compliance gap for the VAT and the associated levies together, so its estimate is higher at 8.3% as a share of GDP. The c-efficiency refers to that of the VAT alone.

potential VAT revenues and around 4.1% of GDP. For imports, the estimated compliance gap of GH¢21.2 billion was equal to 56.9% of potential VAT revenues and 1.8% of GDP.

Figure 3.1. Compliance gap (2024)



The solid green line in Figure 3.2 shows that the overall compliance gap has increased since 2013 when it was 64.1% of potential revenue. This is mostly driven by falling compliance for imports, where the gap has increased substantially from its level of 38.3% in 2013. On the other hand, compliance on the domestic side has improved slightly since 2013, when the gap was 78.3%, with the declining trend most visible until 2022. The subsequent two years have seen an increase in the domestic compliance gap again, which reinforced the trend of an increasing overall compliance gap.

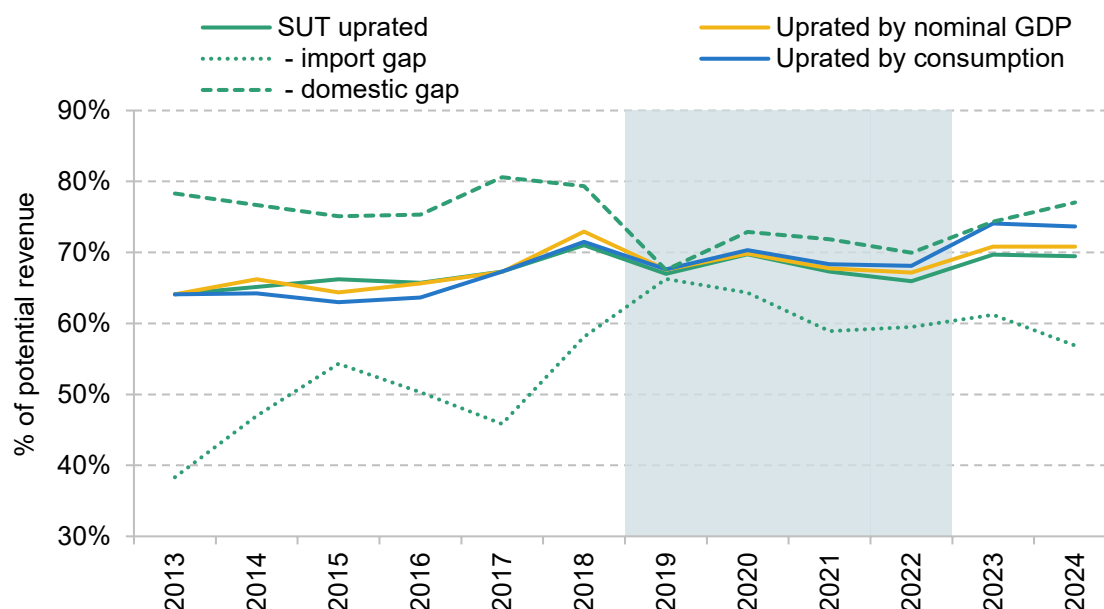
However, note that the compliance gap before 2017 is potentially biased downwards due to the lack of data on VAT refunds (which reduce actual revenues) for that period. Accounting for this would only strengthen the overall trend of improving domestic compliance until 2022. Figure A.1 in the appendix illustrates this by showing the results without taking VAT refunds into consideration. On the other hand, the increase in the overall compliance gap since 2013 appears smaller when refunds are not taken into consideration.

It is also important to note that the results for years 2019 to 2022 could be biased by the introduction of the import benchmark discount policy, which is not included in the modelling of potential VAT for this period. The policy reduced the tax base for import taxes (including import VAT) by up to 50% compared with the full CIF value of imports captured in the SUTs (Iddrisu et al., 2021). This results in lower potential import VAT and higher potential domestic VAT (due to lower deductions for VAT paid on imported inputs) than the modelling here suggests. A back-of-the-envelope calculation based on the estimated impact of the policy on tax revenues in Iddrisu et

al. (2021) suggests the import gap in 2019 would have been 60% rather than the 66% shown here, and the domestic gap 70% rather than 68%.¹² Nevertheless, the overall trend across the whole period 2013 to 2024 still shows an improvement in compliance on the domestic side and an increased VAT gap on the import side. A partial reversal of this trend after 2022 should remain valid, given that the discount policy was partially phased out in 2022.

The central estimates based on the disaggregated SUT uprating, which better accounts for the changing structure of the economy, show similar trends to estimates based on nominal GDP growth (the solid yellow line) or household consumption growth (the solid blue line), at least through to 2022. The latter method shows a much sharper increase in the compliance gap in 2023 and consequently a somewhat higher increase in the overall compliance gap over the whole period in question.

Figure 3.2. Compliance gap as % of potential revenue using different uprating methods (2013–24)



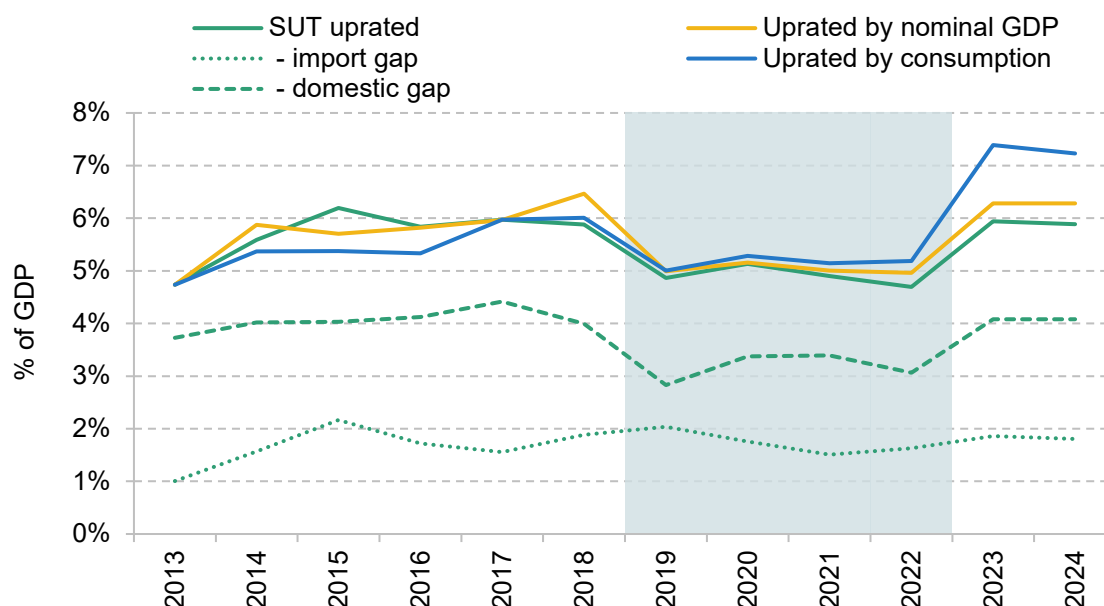
Note: Data on VAT refunds are available only from 2017 onwards, so the estimates of the domestic and overall gaps for earlier years are biased downwards. The import benchmark discount policy was in place from April 2019 until the end of 2022 and reduced potential import VAT as well as potential domestically claimed input VAT deductions.

The compliance gap has also increased since 2013 as a share of GDP, as shown in Figure 3.3. Most of this increase has occurred after 2022, when the compliance gap reached its lowest point of 4.7% of GDP. These results can be explained by the increasing share of consumption (which is

¹² Figure 3.12 of Iddrisu et al. (2021) indicates a decline in tax revenues of around 16% over the whole of 2019 due to the policy change. The calculation here assumes the same decline in potential import VAT revenue. At the same time, our modelling indicates that around 70% of import VAT is normally reclaimed as inputs domestically, and the subsequent calculation accounts for an equivalent increase in domestic VAT liabilities.

taxable) in total GDP at the expense of declining (non-taxable) investment. Consumption increased from 76% of GDP in 2013 to 84% in 2024. At the same time, investment declined from 25% to 10% of GDP, with the largest increases in consumption and largest falls in investment seen after 2022. This is the reason why the estimates based on household consumption growth show such a sharp jump in 2023. This pattern remains true even when one ignores the role of VAT refunds, as in Figure A.2 in the appendix.

Figure 3.3. Compliance gap as % of GDP using different uprating methods (2013–24)



Note: Data on VAT refunds are available only from 2017 onwards, so the estimates of the domestic and overall gaps for earlier years are biased downwards. The import benchmark discount policy was in place from April 2019 until the end of 2022 and reduced potential import VAT as well as potential domestically claimed input VAT deductions.

Policy gap

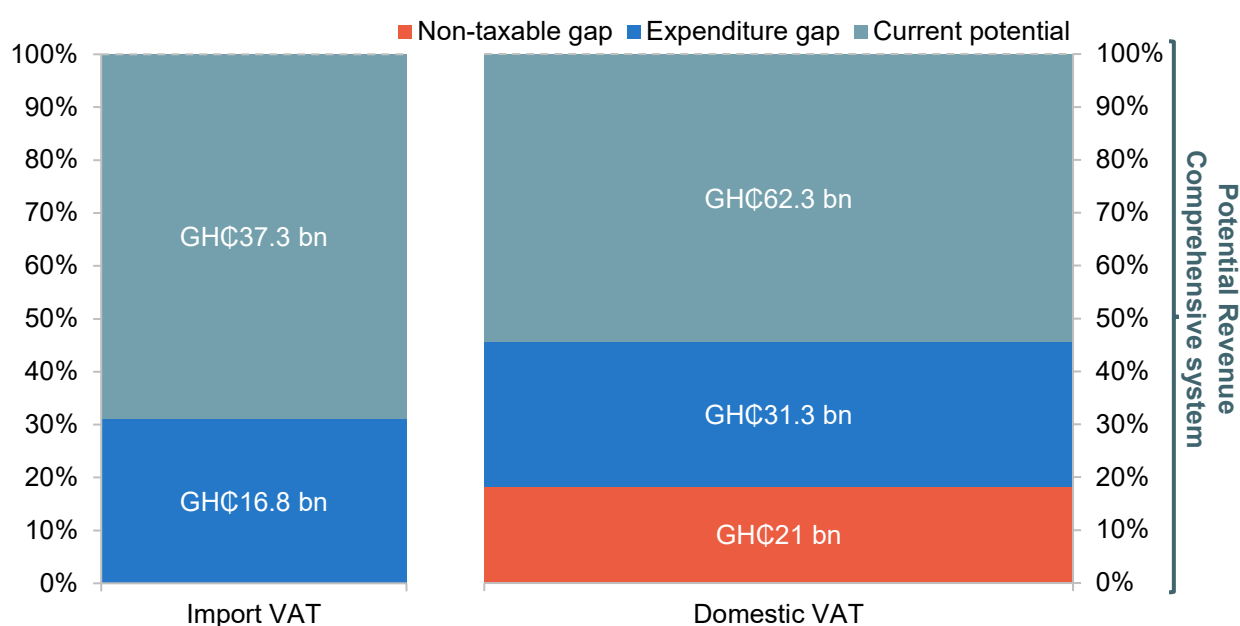
The total policy gap in 2024 was 40.9% of potential revenue under the comprehensive system where all activities are taxed. This amounted to GHC69 billion or 5.9% of GDP. As shown in Figure 3.4, the policy gap as a share of potential revenue is higher for domestic consumption (45.6%) than for imports (31.1%) due to a higher rate of exemptions (including the registration threshold) in the domestic market. The domestic policy gap also contributes more in absolute terms – 4.4% of GDP or three-quarters of the overall policy gap – due to a relatively higher share of consumption in the whole economy.

Based on our estimates of the share of activities that are considered hard to tax, 30% of the policy gap is considered non-taxable, with this falling entirely on the domestic side. This is because all the hard-to-tax activities either take place fully in the domestic market, or their potential VAT

would be payable through domestic VAT returns (such as in the case of imported financial services).

The remaining 70% of the policy gap, equivalent to GH¢48 billion or 4.1% of GDP, is due to the expenditure gap caused by the various VAT exemptions and reliefs, but excluding the effect of the registration thresholds (where small firms under the threshold are considered hard to tax). GH¢16.8 billion or 1.4% of GDP is attributable to exemptions of imports at the border. Exemptions of domestic consumption reduce potential revenue (assuming full compliance) by GH¢31.3 billion or 2.7% of GDP.

Figure 3.4. Policy gap (2024)



3.2 Sectoral estimates

In this section, we disaggregate the economy-wide results into estimates of the VAT gap for each individual sector of the economy represented in the SUT and in the GRA revenue data. Note that actual import VAT revenue data are not disaggregated by sector, so we focus only on the domestic VAT gap here.

In contrast to the economy-wide estimates, the sectoral gap estimates can be quite sensitive to the underlying modelling assumptions. First, we reallocate aggregate variables into individual sectors proportionally, based on the sector's share of the total supply or use of the given product. Incorrectly assigning potential input or output VAT to a different sector can then lead to underestimation of the VAT gap in one sector and overestimation in other sectors. Second, the method of SUT uprating preserves the principle that supply is equal to use in aggregate but violates

it at the level of individual products. This can again lead to inaccurate measures of input and output VAT in individual sectors. It is therefore important to recognise that the sectoral VAT gap estimates are indicative and intended to help prioritise compliance and administrative efforts, rather than to produce precise point estimates for individual sectors.

Compliance gap

In 2024, the largest compliance gaps – in excess of 90% of potential revenue under the contemporaneous system – were in the agriculture, forestry & fishing, construction and wholesale & retail sectors, as shown in Table 3.1. While the degree of non-compliance in the former two sectors has not changed significantly since 2013, it has grown by around 15 percentage points in the trade sector. It is also important to note that the VAT Flat Rate Scheme (VFRS) was available for all firms in the trade sector between 2017 and 2021, but the model currently does not account for this. Charging a flat 3% on sales results in lower potential revenue than under the standard VAT system and this in turn translates into a lower estimated compliance gap. After the restriction of the VFRS to only small traders in 2022, the potential bias in the estimated potential VAT for this sector should be smaller. Therefore, if we accounted for the VFRS, the trade sector would show improved compliance between 2013 and 2017, and the decrease in compliance in the trade sector since 2017 would be even sharper.

The aforementioned sectors are then followed by the water & sewage, transport & storage, and accommodation & food services sectors, each with a compliance gap exceeding 80% of potential VAT. All of these sectors have seen increased compliance since 2013, when their respective gaps exceeded 90% of potential revenue. However, compared with 2017, when our revenue data can first account for VAT refunds at the sectoral level, only the accommodation & food services sector has seen an increase in compliance.

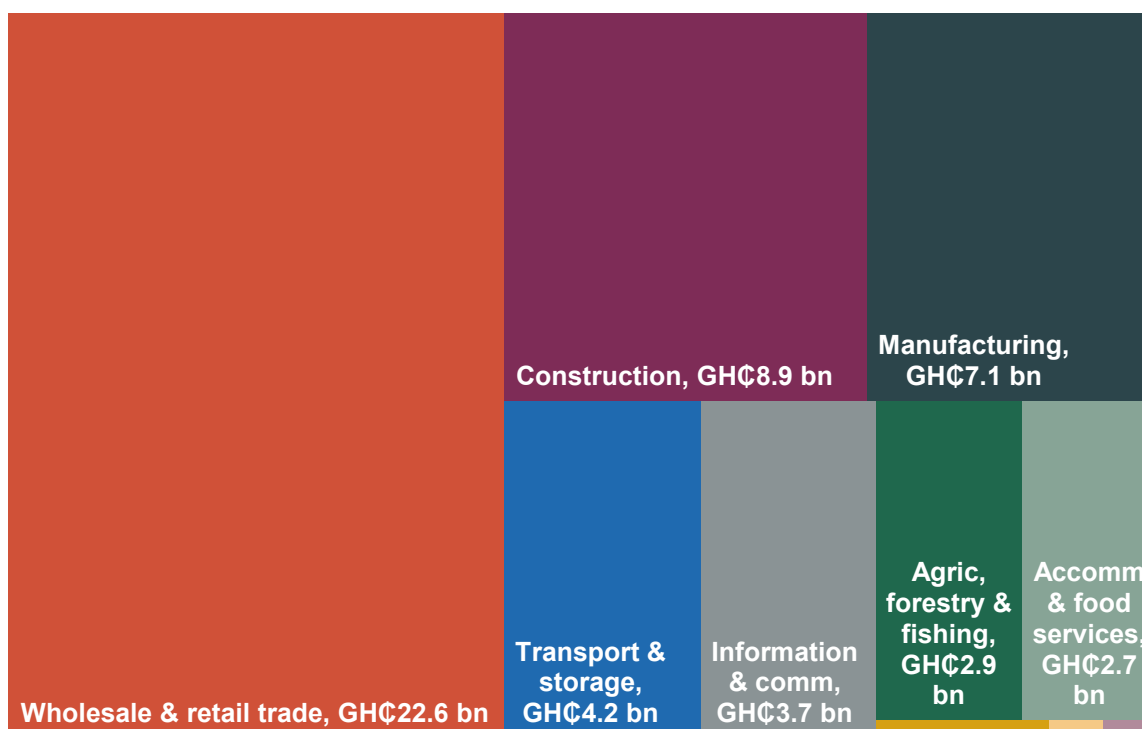
At the other end of the spectrum are sectors with a negative compliance gap. This implies that the GRA is collecting more from the sector than that sector's modelled potential revenue. While this needs to be interpreted with caution due to the modelling assumptions mentioned above, it can indicate either the lack of claiming input VAT credits or the limited availability of VAT refunds in these sectors. The most notable cases are the mining & quarrying and petroleum & gas sectors, whose potential revenue in all years is negative. These are heavily export-oriented sectors which are expected to pay almost no domestic VAT but can claim VAT on their inputs. Results in all years indicate that actual VAT refunds are lower than what the sectors are entitled to.

Table 3.1. Sectoral compliance gap as % of potential revenue under the current system

Sector	2013	2017	2024
Agriculture, forestry & fishing	99%	97%	96%
Mining & quarrying	–109%	–30%	–57%
Petroleum & gas	–100%	–134%	–219%
Manufacturing	48%	71%	61%
Electricity, gas, steam & air conditioning supply	85%	42%	–43%
Water supply, sewage & waste management	92%	80%	81%
Construction	99%	98%	97%
Wholesale & retail trade	77%	77%*	92%
Transport & storage	97%	85%	85%
Accommodation & food services	95%	93%	85%
Information & communication	84%	49%	58%
Financial & insurance services	91%	17%	–148%
Real-estate activities	86%	45%	27%
Professional, scientific, administrative & support services	67%	28%	–6%
Public administration & defence; compulsory social security	77%	43%	–116%
Education	99%	92%	70%
Human health & social care	49%	–50%	–28%
Arts, entertainment, recreation, social work & other services	–46%	–16%	–533%

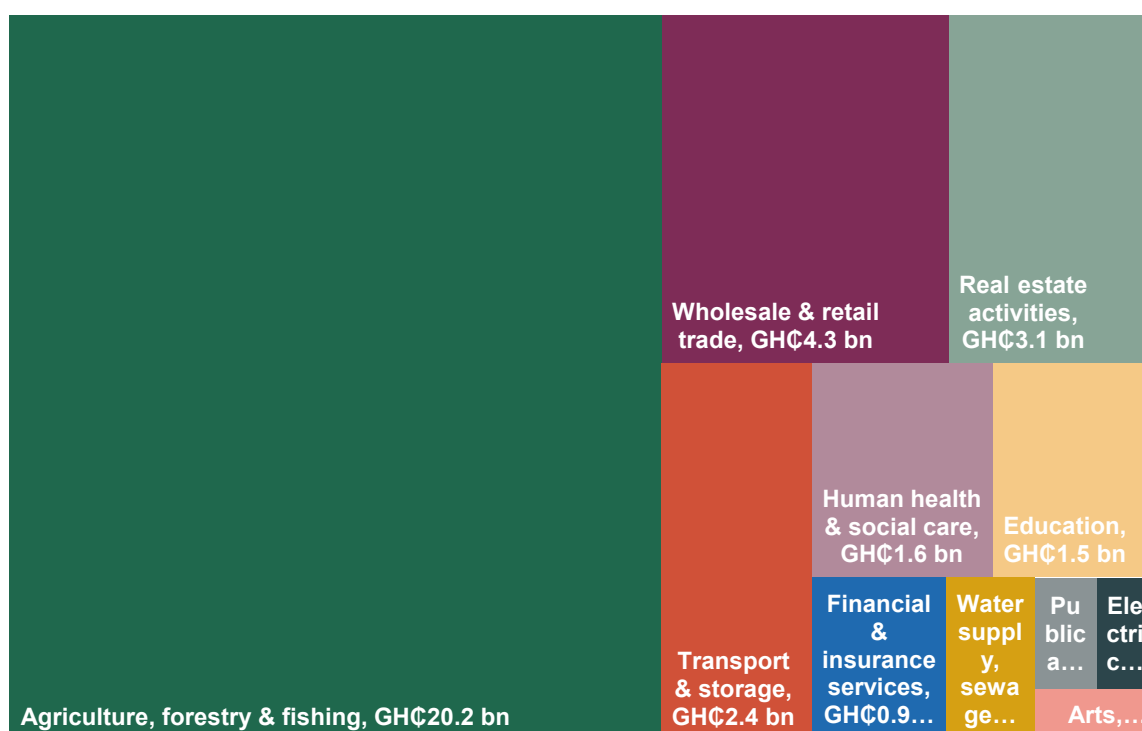
Note: Data on sectoral VAT refunds are available only from 2017 onwards, so the estimates for 2013 are biased towards zero. The figure for the wholesale & retail sector in 2017 is biased upwards by the existence of the VAT Flat Rate Scheme at the time.

The actual revenue forgone due to non-compliance also depends on the relative sizes of the individual sectors. As shown in Figure 3.5, the largest absolute compliance gap – of GH¢22.6 billion in 2024 – was in the wholesale & retail sector, which accounts for almost half (47%) of the overall domestic compliance gap. This is followed by the construction sector with a gap of GH¢8.9 billion, which represents another 18% of the overall gap. Next, even though the compliance gap in the manufacturing sector in 2024 was only 61% of potential revenue, due to its relative size in the economy it represents the third-largest absolute gap, amounting to GH¢7.1 billion, and accounts for 15% of the overall gap. These three sectors combined account for 80% of the overall domestic compliance gap.

Figure 3.5. Contribution to the overall compliance gap by each sector of the economy (2024)

Policy gap

Figure 3.6 shows the expenditure gap by each sector in absolute terms. By far the biggest revenue loss due to VAT exemptions is in the agricultural sector. It accounts for GH¢20.2 billion, which is almost two-thirds (64%) of the overall domestic expenditure gap. However, the total cost of exemptions on agricultural products is even higher as it reduces the VAT due on wholesaler and retailer margins for the sale of agricultural products too. In fact, the trade sector shows the second-largest expenditure gap, of GH¢4.3 billion. This is followed by the real-estate and transport & storage sectors, where the expenditure gaps are GH¢3.1 billion and GH¢2.4 billion respectively.

Figure 3.6. Contribution to the overall expenditure gap by each sector of the economy (2024)

The agricultural and real-estate sectors also enjoy a relatively high rate of VAT exemptions, with 87% and 93% of their respective potential revenue under the normative system currently forgone due to policy choices, as shown by the expenditure gap in Table 3.2. Other sectors such as education and healthcare also enjoy a relatively high exemption rate, with the expenditure gap in excess of 90%. Charging VAT on private spending in these sectors could (under full compliance) raise GH¢1.5 billion and GH¢1.6 billion respectively. However, note that the expenditure gap is expressed as a share of revenue that it would be feasible to collect, and this represents only a portion of the sector's overall activities. Another share of overall activities – the non-taxable gap in Table 3.2 – is considered hard to tax. For example, 50% and 41% of the education and healthcare sector activities respectively are considered non-taxable as these represent direct provision of services by the government for free.

Another thing to note is the negative policy (either expenditure or non-taxable) gap in several sectors. This means that removing certain existing VAT exemptions could lead to lower VAT revenues *from these sectors*. It does not necessarily mean that VAT exemptions raise revenues *overall*. The negative policy gap can be caused by currently taxable sectors buying exempt inputs. If these inputs are no longer exempt, it is the supplier sector that remits the additional VAT (positive policy gap in that sector). The purchasing sector then has additional input VAT to reclaim without changing its output VAT (negative gap in that sector).

Table 3.2. Sectoral policy gap as % of potential revenue under different policy structures (2024)

Sector	Expenditure gap	Non-taxable gap
Agriculture, forestry & fishing	87%	19%
Mining & quarrying	–27%	–10%
Petroleum & gas	–28%	–14%
Manufacturing	–1%	–7%
Electricity, gas, steam & air conditioning supply	37%	–4%
Water supply, sewage & waste management	72%	–2%
Construction	–23%	–2%
Wholesale & retail trade	15%	12%
Transport & storage	33%	0%
Accommodation & food services	–23%	20%
Information & communication	–9%	–7%
Financial & insurance services	69%	78%
Real-estate activities	93%	–2%
Professional, scientific, administrative & support services	–7%	4%
Public administration & defence; compulsory social security	68%	92%
Education	95%	50%
Human health & social care	97%	41%
Arts, entertainment, recreation, social work & other services	67%	51%

Note: The non-taxable gap is expressed as a % of potential revenue under the comprehensive system. The expenditure gap is expressed as a % of potential revenue under the normative system.

4. Conclusion

This report presents estimates of the VAT gap in Ghana for the years 2013 to 2024 using the IMF RA-GAP methodology. Over this period, Ghana has seen a slight decrease in the degree of compliance with the VAT, with the compliance gap reaching around 70% of potential revenue as of 2024. This means that Ghana collects less than one-third of its potential VAT and the revenue forgone due to non-compliance amounts to GHC69 billion or 5.9% of GDP.

While non-compliance is higher in the domestic market, where the compliance gap reached 77% in 2024, it has seen a slight improvement since 2013. The highest contributors to the revenue loss are the trade, construction and manufacturing sectors, which together account for 80% of the revenue losses in the domestic economy. In contrast, compliance at Customs is higher than in the domestic market but has deteriorated substantially since 2013.

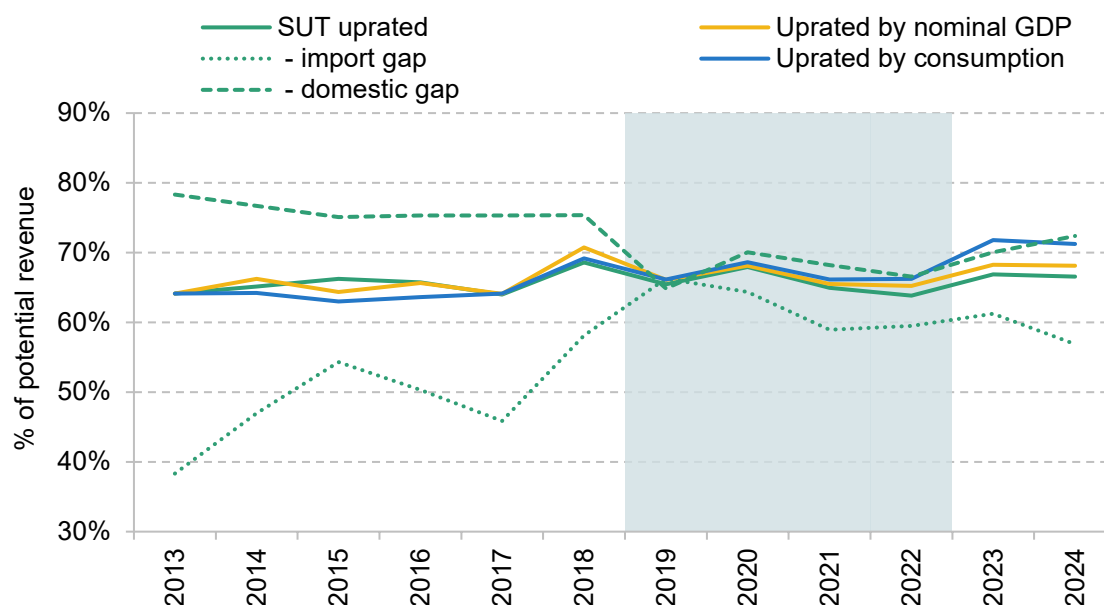
Policy choices to exempt multiple products from the VAT reduce potential revenue by one-third. This represents a revenue loss under full compliance of GHC48 billion or 4.1% of GDP. The largest contributors are the exemptions in the agricultural sector, which account for two-thirds of the domestic expenditure gap.

The quality and reliability of the estimates presented here depend on the data and assumptions that underpin the analysis. While the key policy parameters are derived from reliable external sources and the input data from the supply and use tables are uprated with detailed official data using standard methods, the individual estimates are not without issues. Modelling over such a long period cannot capture all the policy nuance (such as the VAT Flat Rate Scheme or the import benchmark discount policy) and simplifications are necessary in the absence of reliable data. Focusing on the long-term trends and broader patterns rather than individual estimates is therefore more informative. Moreover, in the absence of the data and modelling weaknesses, the broad patterns and trends would be even starker in most cases.

As part of an ongoing effort to improve and update the analysis, steps can be taken to address some of these issues when producing the next round of results. Using a new up-to-date SUT once it is published can help validate the accuracy of the results using the SUT uprating method used here. Assumptions about the share of exempt products, the share of output under the registration threshold and the share of hard-to-tax activities in individual years can be fine-tuned based on additional data. Finally, using consistent and appropriate revenue data (including VAT refunds) covering the whole period will make long-term comparisons even more reliable.

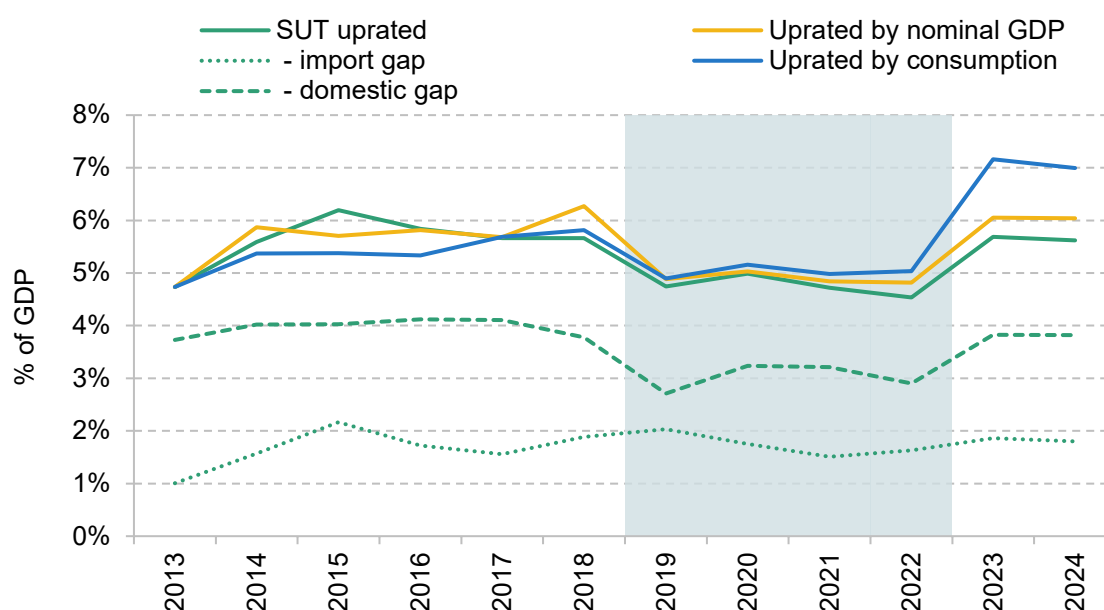
Appendix

Figure A.1. Compliance gap without VAT refunds as % of potential revenue (2013–24)



Note: Data on VAT refunds from 2017 onwards are not used for the calculation of actual revenues. The import benchmark discount policy was in place from April 2019 until the end of 2022 and reduced potential import VAT as well as potential domestically claimed input VAT deductions.

Figure A.2. Compliance gap without VAT refunds as % of GDP (2013–24)



Note: Data on VAT refunds from 2017 onwards are not used for the calculation of actual revenues. The import benchmark discount policy was in place from April 2019 until the end of 2022 and reduced potential import VAT as well as potential domestically claimed input VAT deductions.

References

- Banda, P., Penane, I., Akibo-Betts, A. and Oller, N., 2025. Ghana VAT Administration Review (May 2025). International Monetary Fund, Technical Assistance Report.
- Barra, P. and Prokof'yeva, P., 2025. The reverse method: a new indirect technique for global VAT compliance gap monitoring. International Monetary Fund, Technical Notes & Manuals 2025/15, <https://www.imf.org/-/media/files/publications/tnm/2025/english/tnmea2025015.pdf>.
- Baunsgaard, T. and van Oordt, M., 2025. Ghana Value Added Tax Policy Review (April 2025). International Monetary Fund, Technical Assistance Report.
- European Central Bank, 2013. Financial Stability Review, November 2013. <https://www.ecb.europa.eu/pub/pdf/fsr/financialstabilityreview201311en.pdf>.
- European Central Bank, 2016. Financial Stability Review, November 2016. <https://www.ecb.europa.eu/pub/pdf/fsr/financialstabilityreview201611.en.pdf>.
- GCB Bank, 2023. Ghana Education Sector Report, August 2023. <http://gcbbank.com.gh/downloads/research/sector-industry-reports/358-ghanas-education-sector-report-2023-v2-1/file>.
- Ghana Investment Promotion Centre, 2022. Ghana's Healthcare Sector Report, November 2022. <https://www.gipc.gov.gh/wp-content/uploads/2023/03/Ghanas-Healthcare-Sector-Report.pdf>.
- Hutton, E., 2017. The Revenue Administration–Gap Analysis Program: model and methodology for value-added tax gap estimation. International Monetary Fund, Technical Notes & Manuals 17/04, <https://www.imf.org/-/media/files/publications/tnm/2017/tnm1704.pdf>.
- Iddrisu, A. M., Warwick, R., Abrokwah, E., Conron, H., Nuer, D. and Bob-Eshun, E., 2021. Customs revenue in Ghana: recent trends and their causes. IFS Report R198, https://www.taxdev.org/sites/default/files/2021-12/Customs_revenue_in_Ghana_recent_trends_and_their_causes_0.pdf.
- Iddrisu, A. M., Phillips, D., Abrokwah, E., Blanchard, T., Chackson, B. K. and Nuer, D., 2023. Distributional analysis of Ghana's tax system. IFS Report R285, https://ifs.org.uk/sites/default/files/2024-02/TaxDev-report-IFSR285-Distributional-analysis-of-Ghanas-tax-system-4_1.pdf.

Ministry of Finance, 2023. Medium-Term Revenue Strategy (MTRS) (2024-2027). Government of Ghana, https://mofep.gov.gh/sites/default/files/reports/revenue/Ghana%20Medium%20Term%20Revenue%20Strategy%20%28MTRS%29%202024-2027_v2.pdf.

United Nations, 2018. *Handbook on Supply and Use Tables and Input-Output Tables with Extensions and Applications*. https://unstats.un.org/unsd/nationalaccount/docs/SUT_IOT_HB_Final_Cover.pdf.

Warwick, R., Harris, T., Phillips, D., Goldman, M., Jellema, J., Inchauste, G. and Goraus-Tańska, K., 2022. The redistributive power of cash transfers vs VAT exemptions: a multi-country study. *World Development*, 151, 105742, <https://doi.org/10.1016/j.worlddev.2021.105742>.

Warwick, R., Iddrisu, A. M., Nair, V., Phillips, D., Tyskerud, Y., Abrokwah, E., Nuer, D. and Anoff, S. A., 2024. A review of Ghana's value-added tax (VAT) system. IFS Report R306, <https://mofep.gov.gh/sites/default/files/reports/revenue/Review-of-Ghanas-VAT-System.pdf>.