Changing the Narrative:
From Persistent Fiscal Deficits to Fiscal Surpluses

Part I: Income Taxes

Ghana has suffered from perennial fiscal deficits (a situation where government expenditure exceeds government revenue). Between 2019 and 2024, Ghana experienced high fiscal deficits, with the overall balance averaging 8% of GDP whilst the primary balance averaged 2.6% of GDP. Compared to its peers, Ghana's tax collection ratio ranging between about 15 - 18% of GDP is far below its potential. Comparator countries such as Rwanda, Kenya and Senegal tend to achieve higher revenue collection benchmarks compared to Ghana. Sufficient government revenue is important in financing the activities of the state without crowding out the private sector due to government borrowing in the domestic financial markets. Indeed, a significant contributor to Ghana's economic woes are attributable to fiscal indiscipline and an economy where most economic agents including financial institutions such as banks prefer to lend to the government as opposed to the private sector. This has for many years led to very high government borrowing rates which lead to unsustainable borrowing rates for the private sector – the private sector pays a premium above the government borrowing rate. Ghana has historically been plagued with expenditure-side inefficiencies, including wasteful spending, arrears, and weak public financial management. The focus of this series though will be on improving revenue mobilization.

This article is a thought experiment, with the view to generate discussions that will shape a fairer, robust and optimal revenue generation system that contributes to the accelerated growth and development of the country. I consequently discuss my views on how I believe that the government and tax authorities can significantly ramp up domestic tax collection. This will be a series of three articles focused on the Income Tax (Part I), Property Taxes (Part II) and Road Levies (Part III). This first article in the series will focus on the income tax.

Digital Income Withholding Tax (DIWT)

The NDC government after winning power in the 2024 elections fulfilled its campaign promise by scrapping the Electronic Transactions levy, popularly known as the E-Levy. Though I believe that the design of the E-Levy was poor, I think the fundamental idea of generating revenue from the informal sector was sound. This is because Ghana is largely an informal economy with the informal sector largely out of the tax net. I believe that by scrapping the E-Levy the government leaves much needed domestic revenue on the

table especially with a better design that avoids the well-known negative externalities associated with the E-Levy. For example, in 2024, revenue collection data shows that the E-Levy raised about Ghs 2 billion. Some of the problems associated with the E-Levy was that all transactions regardless of whether they represented income to the recipient or not, were taxed.

This article does not advocate another levy on digital transfers. Instead, it presents a broader and more sophisticated framework for using electronic transfer technology and artificial intelligence (AI) to expand and formalize Ghana's tax base. The focus is on leveraging technology to identify and tax legitimate income—particularly in the informal sector—rather than taxing transactions themselves. Consequently, this proposal emphasizes that not all e-transactions should be taxed but rather transactions that represent income should be taxed as most people can agree to this principle. The big question is how might such a system be designed and implemented? In my view, there should first of all not be a blanket tax on all e-transfers. The idea as stated above is to tax legitimate income earned by economic agents particularly in the informal sector.

How Do We Identify Taxable Income?

My suggestion is that e-transactions should be classified and taxed based on the classification. For example, if I earn income outside of my formal employment and I'm paid using for example Mobile Money, the sender should indicate that this is income to the recipient. As another example, if I'm paying a worker or employee, the worker or employee should pay tax on this income. So as the employer, in paying the employee, I should have an option to select paying an employee or this is income to the recipient. So for example, if I'm paying an employee (for example a driver, gardener, house help, cleaner, artisan etc), I select this option in the mobile money app and the appropriate tax is deducted not from my funds, but from the amount to be received by the recipient. Indeed, I can register this person as an employee so that I do not have to indicate this in future payments. So for example, if I'm transferring Ghs 300 to the recipient, the recipient receives Ghs 285 (300 * 0.95) if the tax rate is 5%. The tax of Ghs 15 is then remitted to the government by the mobile money provider. Of course, in the short-term, recipients will seek to transfer this tax to the sender, however, I believe that in the medium-term and with education, this should subside or abate. My proposal is that the tax rate should be sufficiently low to get people into the tax net. I believe that a rate of 5% is fair as those in the informal sector usually are low income earners. A progressive tax system requires that low income earners pay lower or no taxes. Also, lower tax rates will reduce resistance from those who need to pay the tax.

A necessary and inbuilt feature of such a design should be that the recipient can dispute the tax payment if they believe they should not pay the tax or they believe they fall below the defined income threshold for the informal sector – say Ghs 6000 per annum. The tax authorities in reviewing this dispute can refer to for example the prior year's income to make a determination if the recipient falls below the tax threshold and examine other evidence provided by the recipient as to why they should not pay the tax. To make this simple, technology such as AI can be used for some of these verification tasks. To facilitate accuracy and to provide a database to train future AI models that will check classification of transactions, the recipient can be asked to verify if the classification was right after receiving a payment. If the classification is wrong, then they have an option to reclassify the payment or dispute the payment for a tax refund. To provide an incentive for economic agents to do this, small or nominal tax credits can be awarded to recipients who confirm or verify such transactions.

Payment for Goods and Services

If I'm paying for a service, again the receiver of the payment is earning income from providing the service and consequently should pay taxes. To implement this, the payer should be required to select paying for a service when making a payment. In making the payment, once the payer enters the phone number of the recipient, if the recipient is registered for taxes purposes (the recipients number will be searched against the tax authorities database) then no taxes will be deducted from the income received as the recipient is expected to pay income taxes in the regular way. If the phone number is not matched against the tax database, then the recipient will incur the tax on services. Recipients should be able to dispute this by being able to select the transaction in their Momo application and providing evidence as to why they should not pay the tax. This information will then be passed on to the tax authorities to make a determination within a reasonable period (say two weeks) as to whether the tax payment should be reversed and the recipient's account should be credited with the tax paid. Again, initially human reviewers can do the bulk of this work, but an AI model with a human in the loop can subsequently perform this task once there is enough data to train the model.

Taxing goods is a more complicated matter and may lead to double taxation and discourage consumption. I think in the short-term the government should grant a waiver for the payment for goods. In the medium-term, after learning lessons on how this redesigned system works, the government may consider policies that taxes goods that legitimately should have paid taxes.

Donations, Gifts and Social Transfers

The principle here is that generally donations, gifts, church offerings and social transfers should be tax exempt. However, given the risk that economic agents may intentionally misclassify gifts to avoid the tax, I propose that transfers below Ghs 500 should be tax exempt. This amount can be reviewed annually or periodically to stay in tune with economic conditions. Amounts above the set threshold should attract a tax of 2.5% unless the payer provides evidence that this is a donation, gift or social transfer and should be consequently exempt from the tax. Evidence could include for example funeral flyers, evidence of group contributions, evidence of friendship or family connection etc.

Payment of Bills

Payment for bills such as electricity, water, DSTV, Netflix, internet bundles and airtime, and school fees should not be taxed or remain untaxed as the receivers of these income are likely to be registered tax payers or are exempt from paying taxes.

Savings and Investments

Mobile money transfers for purchasing financial services such as savings, insurance, pensions and investments should be tax exempt . The financial services providers will pay taxes on the income that they have earned from their operations.

Self-transfer

Self-transfers from one Momo account to another or from a Momo to bank account should not incur a tax. Once the identity of the sender is matched using the mobile money and bank platforms, the transfer should be exempted from tax.

Fees, Charges and Payments for Government Services

Fees, charges and payments for government services such as passports, driving licenses, birth certificates, business registrations, and court fees should be exempt from the payment of taxes.

Other

The final categorization should be ‘other’. This provides the option for the sender to choose this classification if they believe that the transaction does not fall into any of the above categories. Upon, selecting other, the recipient would be asked to classify and describe the transaction. These transactions can be allowed to go through, however, the tax authorities can study these transactions and make a determination as to whether a tax is payable or not. Again, the benefit of this is that it may allow the tax authorities to come out with new classifications for some of these transactions with their appropriate tax

rates. If the tax authorities make a determination that a tax is payable, it would be posted to the sender's mobile money tax account indicating when a refund is due or a payment has to be made. A key feature of this proposal consequently is that every mobile money user will have a 'tax account' in built into their mobile money dashboard where they can see their tax credits (payments that is due them) and taxes owed (payments that they will be required to pay to the tax authorities). Ideally, this account should be directly linked to their TIN and unified across all e-transaction platforms.

If a mobile money user receives payments throughout the year that are not taxed, the tax authorities can determine that this is income or provision of services that are taxable. The tax authorities can develop a model (such as a regression model) that determines what proportion of taxes that an average informal sector business in Ghana should pay and then apply this to the recipient. Inputs into this model could include for example sales revenue, cost, profitability, assets, and the effective tax rate. For individuals, it could be based on the average by day rate based on the employment type of the individual.

How Much Revenue Could Potentially Be Generated

To get a sense of how much revenue could be generated, we provide some estimates of potential revenue. What we do is to estimate the shares of mobile money transactions attributable to 'income', 'services', 'gifts' and 'other'. We then multiply these shares by the value of transactions. We estimate the year end value of Mobile Money Transactions for 2025 at Ghs 4.46 trillion. This serves as the baseline estimate. We cap the taxable transactions at a maximum of 45% of the total transactions.

Revenue Model

$$R = V \times (s_{inc}\,\tau_{inc}\,c_{inc} + s_{svc}\,\tau_{svc}\,c_{svc} + s_{gift}\,\tau_{gift}\,c_{gift} + s_{other}\,\tau_{other}\,c_{other})$$

where:

- R denotes total annual revenue from the Digital Income Withholding Tax (DIWT) system
- V is the total annual value of mobile money transactions
- s_i represents the share of the total mobile money value attributable to category i
- τ_i is the statutory tax rate applied to category i; and
- c_i captures effective collection and compliance to category i.

Category definitions and tax rates

- Income/wages:
  $s_{inc}\,,\ \tau_{inc} = 5\%\,, c_{inc}$
- Services to unregistered recipients:
  $s_{svc}\,, \tau_{svc} = 5\%\,, c_{svc}$

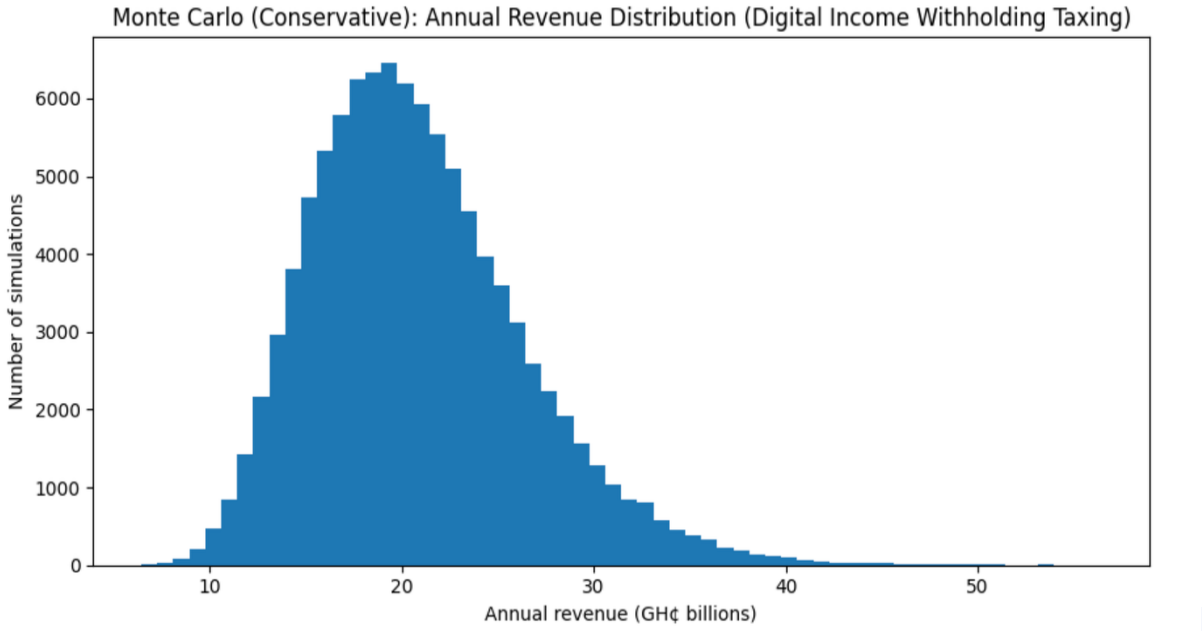
- Large gifts (above threshold):

  s_{gift} , $\tau_{gift} = 2.5\%$, c_{gift}
- Other taxable receipts:

  s_{other} , $\tau_{other} = 5\%$, c_{other}

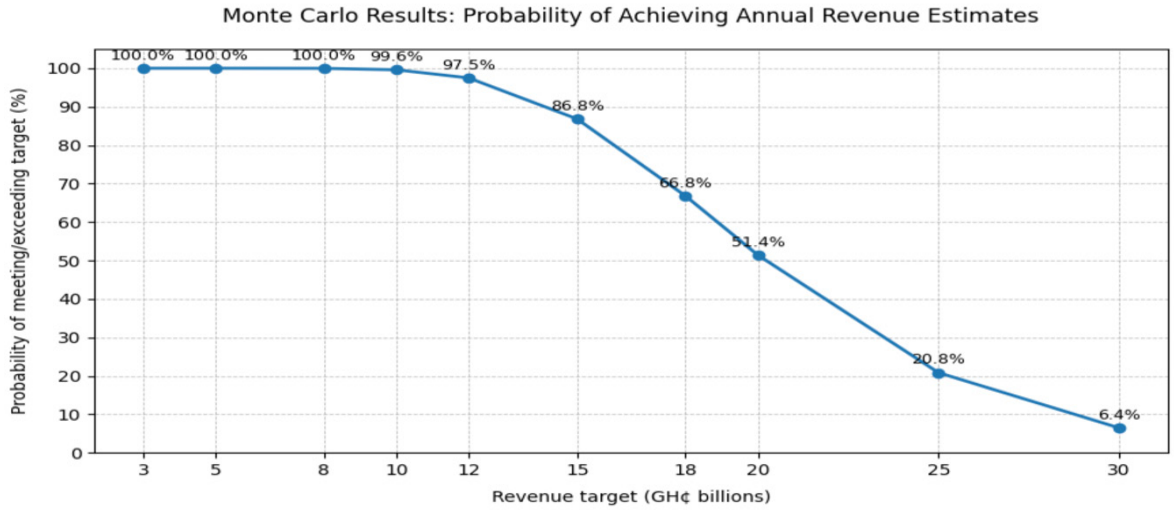
We then perform a Monte-Carlo simulation to account for uncertainty in the key inputs or assumptions. The full assumptions underlying the Monte Carlo simulation are provided in Appendix 1. The results from the Monte Carlo simulation show that the expected or mean revenue is Ghs 20.87. In 80% of simulated scenarios, revenues lie between GHS 14.37 billion and GHS 28.23 billion, suggesting that the revenue potential is robust to uncertainty in key inputs. There is a 10% probability that revenues exceed GHS 28.23 billion, and a 10% probability that revenues fall below GHS 14.37 billion. Panel B of Figure 1 shows that the probability of achieving higher revenue estimates are progressively lower. The estimates are based on conservative assumptions.

Figure 1 (Panel A): Monte Carlo Simulation



Statistic	Revenue (GH¢ bn)
Mean (expected)	20.87
Median	20.19
10th percentile (P10)	14.37
25th percentile (P25)	16.88
75th percentile (P75)	24.11
90th percentile (P90)	28.23
95th percentile (P95)	31.00

Figure 1 (Panel B): Probability of Achieving Revenue Estimates



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Appendix 1: Assumptions Underlying Monte Carlo Simulation

Input	Assumption / Distribution
Annual mobile money transaction value (V)	Lognormal (mean = GH¢4.46 trillion, CV = 22%)
Eligible share: income/wages ($s_{(}inc_{)}$)	Triangular (0.025, 0.045, 0.070)
Eligible share: services to unregistered providers ($s_{(}svc_{)}$)	Triangular (0.055, 0.090, 0.140)
Eligible share: large gifts ($s_{(}gift_{)}$)	Triangular (0.005, 0.012, 0.025)
Eligible share: OTHER ($s_{(}other_{)}$)	Triangular (0.005, 0.015, 0.050)
Maximum eligible share	Combined eligible shares capped at 45%
Tax rate: income	5.0%
Tax rate: services	5.0%
Tax rate: large gifts	2.5%
Tax rate: OTHER	5.0%
Collection/compliance (all categories)	Triangular (0.60, 0.70, 0.80)
Behavioural leakage	Triangular (0.12, 0.20, 0.35), applied multiplicatively