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Evaluating the impact of the 2023-2024 personal income tax reform in Rwanda: An analysis using tax-benefit microsimulation modelling

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WIDER Working Paper 2023/73

Evaluating the impact of the 2023–2024 personal income tax reform in Rwanda

An analysis using tax-benefit microsimulation modelling

Antoine de Mahieu, Jesse Lastunen, Jeannette Mukangango,
and Theogene Harerimana*

June 2023

Abstract: Establishing an equitable and efficient tax system is essential for reducing poverty, combating inequality, and fostering sustainable economic growth. Rwanda's government has recognized this and implemented significant changes to the personal income tax schedule for 2023 and 2024 as part of broader tax reforms set forth in its Medium-Term Revenue Strategy. This study examines the fiscal and distributional effects of the personal income tax changes, employing a newly-created tax-benefit microsimulation model for Rwanda. Specifically, we compare the reform to a business-as-usual scenario with the previous income tax regime. The analysis shows that the reform enhances the disposable income of many workers, albeit at the expense of reduced government revenue. At the population level, the reform predominantly benefits the highest income deciles, who constitute the majority of income taxpayers in Rwanda. The lowest deciles, for the most part, remain unaffected by the changes.

Key words: income tax, poverty, inequality, Rwanda, microsimulation

JEL classification: D31, E24, H24

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1 Introduction

Mobilizing sufficient tax revenues is an important prerequisite to financing public programmes in developing countries. At the same time, governments often seek to balance the need for revenue generation with the need to ensure that tax policies do not overly burden low-income individuals and businesses. In addition to amendments to the tax schedule, governments practice tax policy by improving the efficiency of tax administration, reducing tax evasion and avoidance, and facilitating more efficient and fair tax collection.

The annual revenues collected by the Rwandan government were RWF2,203 billion in the fiscal year 2019/20, which is approximately 23.6 per cent of GDP. About 67 per cent of those revenues came from taxes, which represents 15.8 per cent of GDP. Approximately 43.7 per cent of the tax revenues in turn come from direct taxes on income and profit, 32.9 per cent from value-added taxes (VAT), 11.2 per cent from excise duties, 6.6 per cent from custom and import duties, and 5.7 per cent from other sources (MINECOFIN 2021).

The Medium-Term Revenue Strategy (MTRS) — a roadmap for tax reforms over the three-year period from 2021–22 to 2023–24 — contains a number of observations about the effectiveness of the Rwandan tax-benefit system and sets out a series of reforms to improve it. It includes, among others, an amendment to the income tax system, with changes in the tax schedule. This amendment was enacted in the new income tax law No.027/2022 on 28 October 2022 (hereafter ‘TTL 2022’). The changes to the income tax schedule include an increase in the exempted income threshold, effective from 2023 onwards, and lower marginal tax rates that will be introduced in 2024. This reform, together with other reforms mentioned in the MTRS, aims at making the tax benefit system more equitable, efficient and simple, and at boosting the economic recovery of the country (MINECOFIN 2021).

This paper examines the impact of the 2023–24 personal income tax (PIT) reform to provide relevant information to decision-makers about its impact on households and public revenues. While this reform only represents one aspect of the tax-benefit changes outlined in the MTRS, it offers insights that can be useful in designing future tax reforms more broadly.

The simulations use RWAMOD, the tax-benefit microsimulation model for Rwanda, underpinned by survey data collected by the National Institute of Statistics of Rwanda (NISR), namely the fifth Integrated Household Living Conditions Survey (EICV5). The paper is organized as follows. Section 2 details the PIT in Rwanda and the 2023–24 amendments. Section 3 describes the methodology used in the study, section 4 presents the results, and sections 5 and 6, respectively, discuss the results in a broader context and offer a conclusion.

2 Personal income tax in Rwanda and the 2023–24 amendments

2.1 Personal income tax in Rwanda: until 2022

The history of personal income tax in Rwanda can be traced back to the precolonial era when the monarchy levied taxes on individuals and communities. The modern system of income taxation was however introduced during the colonial period. In 1948, the Belgian authorities introduced a tax system that included an income tax, which was imposed on both locals and foreigners who were earning income in Rwanda. After gaining independence in 1962, Rwanda continued to levy

income taxes on its citizens and foreign residents. The income tax system has gone through various reforms since its conception.

Nowadays, personal income taxes are collected at the national level. Resident individuals are taxed on their worldwide income, while non-residents are taxed on their Rwandan-sourced income. Taxable income derives from (i) employment income, (ii) investment income, and (iii) business profits. Personal income taxes are usually withheld on a monthly basis by the employer from employees' salaries, following the PAYE system ('Pay-As-You-Earn'). The (monthly) PAYE brackets are equal to one-twelfth of the (annual) income tax brackets. An annual tax declaration is required from the taxpayer if the relevant employment or investment income is not subject to the withholding tax.

From 2005 to 2022, individuals who earned a monthly income of up to RWF30,000 were exempt from income tax. Those earning more paid a marginal tax rate of 20 per cent on their income between RWF30,001–100,000 and a marginal tax rate of 30 per cent on their income above RWF100,001.¹ There are a few exceptions to this scheme. Agriculturalists and pastoralists benefit from a yearly exemption of RWF12 million for income earned from agricultural or livestock activities. Capital gains on the sale or transfer of shares have been taxed separately at 5 per cent since 2018.

Note also that individuals with micro and small enterprises are allowed to opt for a turnover tax regime, which means that they do not pay taxes on profits according to the 'real' regime. Opting for turnover tax requires an annual turnover of less than RWF20 million. With a larger turnover, business profits are always taxed at 30 per cent, which is also the corporate income tax (CIT) rate levied on all incorporated companies.

2.2 Motivation for a PIT reform

The MTRS was elaborated to align with the objectives of Rwanda's First National Strategy for Transformation (NST 1). NST 1 is itself an implementation instrument for the remainder of Vision 2020 and for the first four years of Vision 2050 national development plans.

The MTRS aims to raise tax revenues by 1 percentage point of GDP (0.46 through tax policy reforms and 0.54 through administrative reforms) in just three years, between July 2021 and June 2024, in order to strengthen the country's self-sufficiency and increase resources to invest in its development plans. This net increase in tax revenues will be achieved by increased revenues of the corporate income taxes and excise taxes, while revenues from personal income taxes and VAT will decrease, albeit to a lesser extent (see Table 1). In particular, the PIT revenues are expected to decrease by 0.4 per cent of GDP, following the 2023–24 reform, which will be described greater in detail in the next section (MINECOFIN 2021).

The goal of the PIT reform is twofold. First, it seeks to address bracket creep, which results from the fact that brackets were never adjusted for inflation since their previous revision in 2005. As earnings rise in nominal terms under the influence of inflation, they become more highly taxed under progressive tax systems, even if the real value of wages and salaries has not increased. Taxpayers are pushed into higher tax brackets, resulting in them paying a higher percentage of their income in taxes. While the fiscal drag resulting from the bracket creep has led to higher tax

¹ Until 2022, Law No.016/2018 of 13/04/2018 establishing taxes on income governed the personal income taxes in Rwanda. Rates and brackets were not changed since 2005 and Law No.16/2005 of 18/08/2005 on direct taxes on income.

revenues for the government, it has also increased the tax burden on workers. By doubling the tax-free income threshold from RWF30,000 to RWF60,000 per month, and by modifying the subsequent bracket limits, the government aims at raising the disposable incomes of workers and their households. This will allow them more funds to spend, invest or save, which in turn contributes to their welfare and boosts aggregate economic activity.

Table 1: Expected revenue impact of the MTRS reforms

MTRS reform proposal	Revenue impact over the MTRS horizon (% of GDP)
<i>Tax policy reforms</i>	<i>0.46</i>
PIT reforms	-0.4
CIT reforms	0.8
VAT reforms	-0.1
Excise duty reforms	0.15
<i>Administrative reforms</i>	<i>0.54</i>

Source: MINECOFIN (2021).

Second, the personal income tax reform aims to render the tax regime more equitable. Observing that Rwanda's current PIT schedule has an average effective tax rate that rises most steeply for the poorest workers and levels off for the highest earners, the reform aims at increasing progressivity in the PIT rate structure (MINECOFIN 2021).

Finally, even though this aspect is not explicitly considered in this work or the MTRS, the reform will also likely improve labour supply incentives. As it is generally agreed that substitution effects dominate income effects (Keane 2011), lower income taxes incentivize work both at the intensive and extensive margin and can thus further stimulate economic activity.

2.3 The 2023–24 PIT reform in detail

Rwanda's government enacted the new income tax law No.027/2022 (ITL 2022) on 28 October 2022, which repealed the existing income law No.016/2018 of 13 April 2018. From 2023 on, income up to RWF60,000 monthly is exempt from income tax. In 2024, the marginal tax rate for the second bracket is decreased to 10 per cent, the rate for the third bracket is decreased to 20 per cent and a fourth bracket, taxed at 30 per cent, is created for income above RWF200,000 per month.

Those changes are summarized in Table 2 and illustrated in Figure 1, where the distribution of taxable incomes, calculated from EICV data, is overlaid with the marginal tax rates.

Table 2: Personal income tax rates, 2005–24

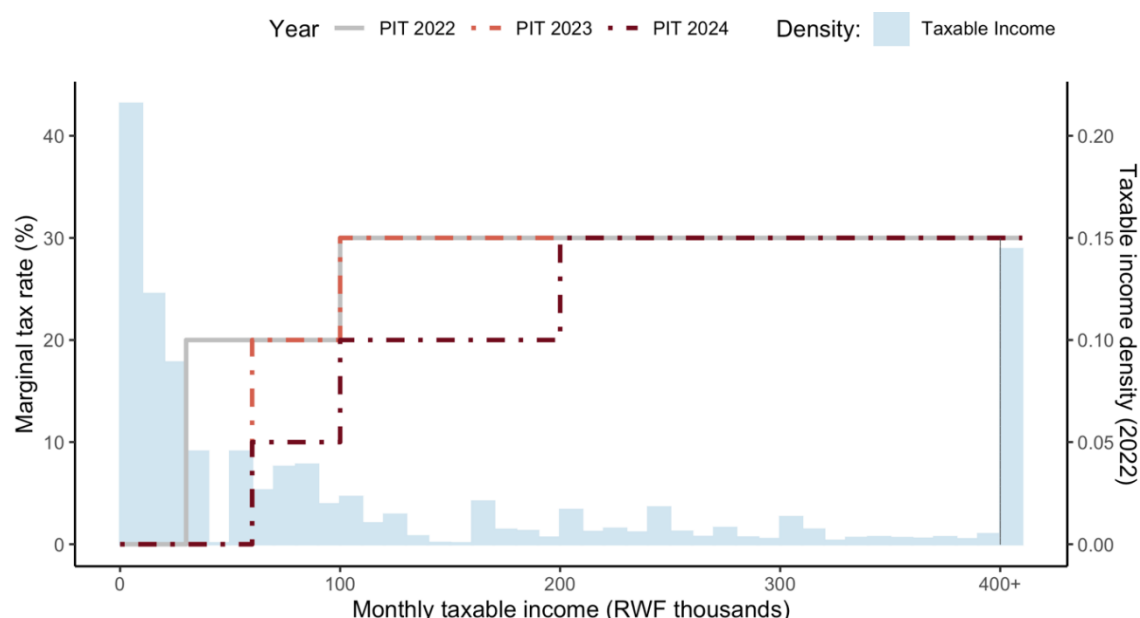
2005–2022		2023		2024	
<i>Income brackets (RWF, monthly)</i>	<i>Tax rate (%)</i>	<i>Income brackets (RWF, monthly)</i>	<i>Tax rate (%)</i>	<i>Income brackets (RWF, monthly)</i>	<i>Tax rate (%)</i>
0–30,000	0	0–60,000	0	0–60,000	0
30,001–100,000	20	60,001–100,000	20	60,001–100,000	10
≥ 100,001	30	≥ 100,001	30	100,001–200,000	20
				≥ 200,001	30

Source: Law No.016/2018 of 13/04/2018 (article 12), Law No.027/2022 of 28/10/2022 (article 56).

According to MINECOFIN (2021), all 466,000 taxpayers in the PIT regime will see their tax bills either reduce or stay the same as a result of this policy change. The number of taxpayers who are exempt from income tax due to low incomes will increase from 90,000 to 169,500 in 2023,

alleviating the tax burden of 79,500 individuals. In 2024, a total of 107,500 taxpayers will see their marginal tax rate fall from 20 to 10 per cent, and 67,000 will see it fall from 30 to 20 per cent. The largest portion of taxpayers, 122,000, earn above RWF200,000 monthly and will also have reduced tax liability as a result of the lower marginal rates on their income.

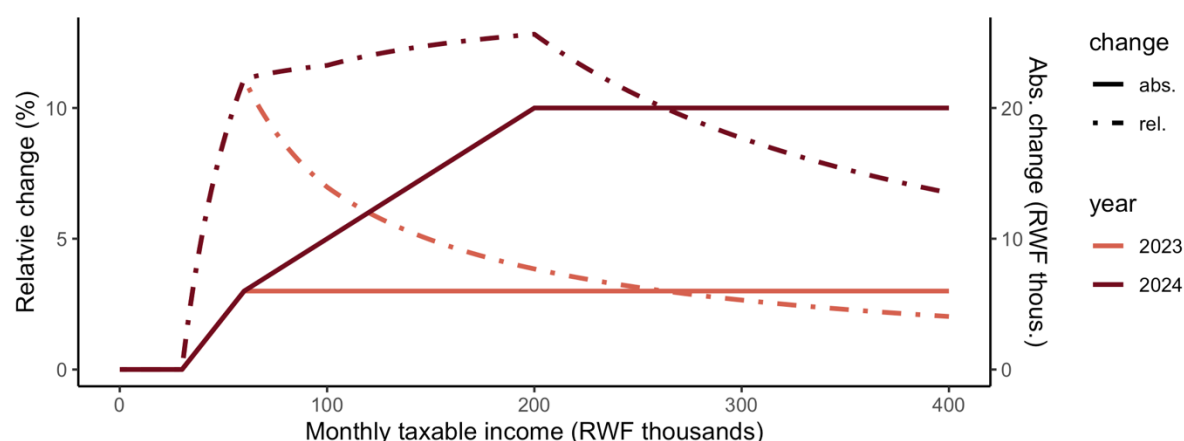
Figure 1: Marginal tax rates as a function of monthly taxable income



Notes: EIVC5 data is uprated to 2022 using the RWAMOD model. 14.8 per cent of taxpayers have monthly taxable income between RWF400,000 and RWF3,820,000, represented at the right border of the interval.

Source: authors' calculations using EICV5 and the 2022 Income Tax Law.

Figure 2: Change in disposable income as a function of taxable income, compared to 2022



Source: 2022 Income Tax Law, authors' calculations.

Figure 2 shows how disposable income increases following the tax reforms, as a function of taxable income. For example, an individual with monthly earnings of RWF100,000 will have an after-tax income of RWF86,000 in the 2022 system, RWF92,000 in the 2023 system and RWF96,000 in the 2024 system. The reform implemented in 2023 thus increases their after-tax income by RWF6,000 while the second phase of the reform implemented in 2024 increases their after-tax income by an additional RWF4,000, or RWF10,000 compared to 2022. Those values are represented by the solid lines and can be read from the right axis of the figure. These increases correspond to after-tax

income increases of 7.0 and 11.6 per cent respectively, which are represented by the dashed lines and can be read from the left axis.

The absolute changes will be the most important for individuals with monthly incomes above RWF60,000 in 2023 and above RWF200,000 in 2024, who reap full benefits from the tax cuts. In relative terms (i.e. as a percentage of 2022 after-tax income), the increases are the largest for individuals earning exactly RWF60,000 in 2023 and exactly RWF200,000 in 2024, who see their after-tax income increase by 11.1 and 12.8 per cent, respectively.

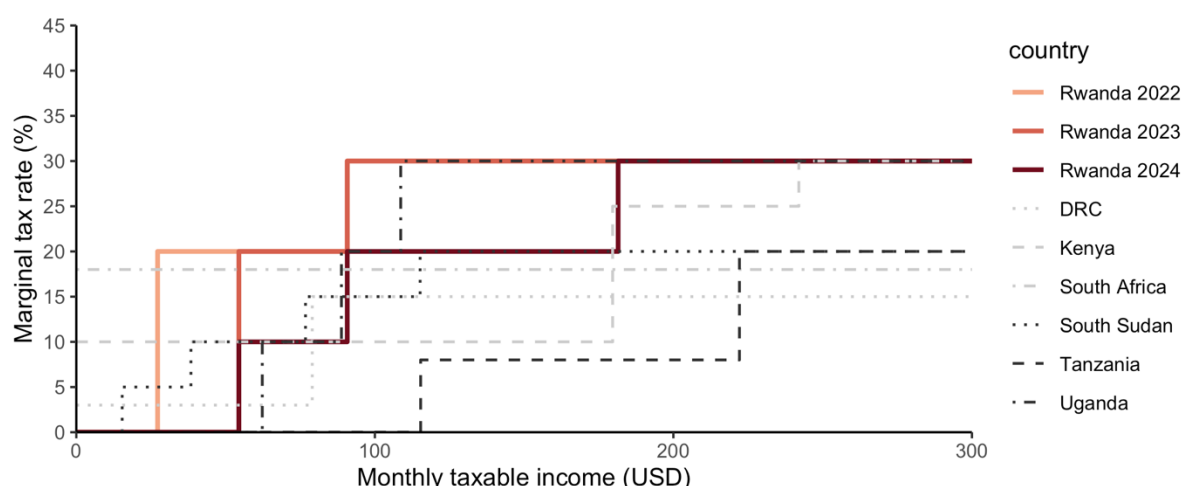
The cost of the reform will depend on the evolution of the labour force and wages. The MTRS predicts a decrease of tax revenues close to 0.4 per cent of GDP, which would amount to about RWF57.3 billion in 2024.

Note that the ITL 2022 also includes a number of reforms regarding the taxation of foreign experts, start-ups, digital services, gaming activities, etc. as well as a number of administrative procedure changes. Those changes aim at simplifying the tax system, improving the ease of doing business, and enhancing tax collection (*The New Times* 2022b).

2.4 Personal income tax in Rwanda compared to other countries

Figure 3 compares the tax brackets and rates for incomes up to US\$300 per month in Rwanda and six other African countries, including neighbouring countries Uganda, Tanzania and the Democratic Republic of Congo (DRC). Up to 2022, Rwanda taxed the lowest incomes quite heavily compared to the other countries, with the 20 and 30 per cent brackets starting at lower income levels. When the reform will be completed in 2024, the first and second brackets will start at income levels close to those that prevail in Uganda. Moreover, the tax-free bracket, increased to RWF60,000, will benefit low-income individuals more than in countries that do not have tax-free brackets, namely Kenya, South Africa and DRC.

Figure 3: Comparison of marginal tax rates as a function of taxable income (US\$0–300)



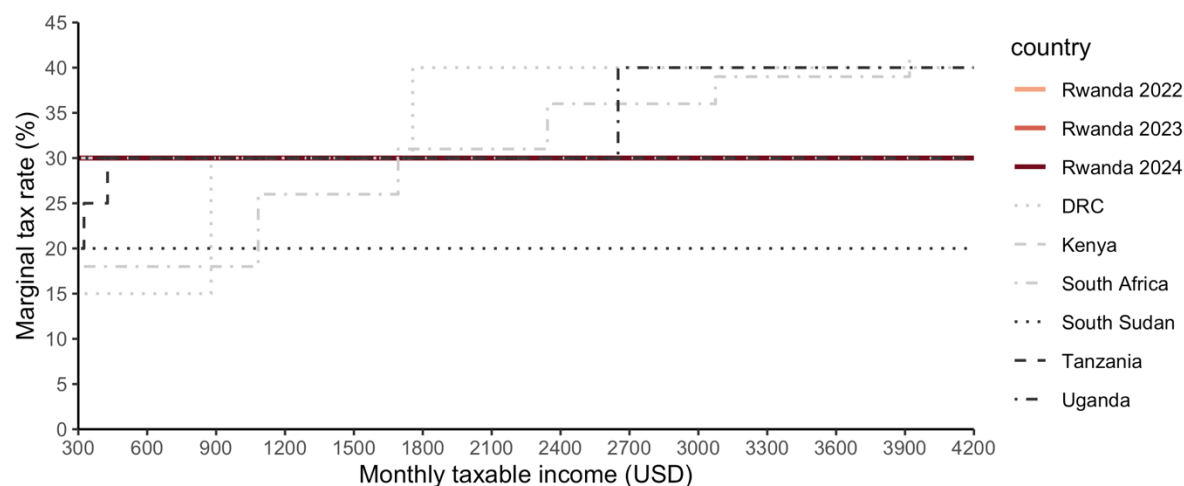
Notes: tax brackets are converted into US\$ using the following exchange rates from 6 April 2023: US\$1 = RWF1,102 = CFF2,050 = KES133.6 = ZAR18.24 = TZS2,341 = UGX3,773.

Source: authors' calculations using ITL 2022, Kenya Revenue Authority (2023), South African Revenue Service (2023), South Sudan National Revenue Authority (2023), Tanzania Revenue Authority (2023), Uganda Revenue Authority (2023), and PWC Tax Summaries (2023).

Figure 4 shows how the tax rates and brackets evolve for higher incomes, from US\$300–4200 per month. Interestingly, the Rwandan tax system, same as the ones in Kenya and Tanzania, applies a

constant marginal tax rate of 30 per cent on incomes in this range, with no changes ITL 2022. South Sudan applies a lower constant marginal tax rate of 20 per cent on those incomes. The other countries included in the analysis have a more progressive tax system, reaching rates of 40 per cent in DRC and Uganda and rates of up to 45 per cent in South Africa.

Figure 4: Comparison of marginal tax rates as a function of taxable income (US\$300–4200)



Notes: tax brackets are converted into USD using the following exchange rates from 6 April 2023: US\$1 = RWF1,102 = CFF 2,050 = KES 133.6 = ZAR 18.24 = TZS 2,341 = UGX 3,773.

Source: authors' calculations using ITL 2022, Kenya Revenue Authority (2023), South African Revenue Service (2023), South Sudan National Revenue Authority (2023), Tanzania Revenue Authority (2023), Uganda Revenue Authority (2023), and PWC Tax Summaries (2023).

3 Methodology

3.1 Tax-benefit microsimulation model for Rwanda and associated survey data

RWAMOD, developed as part of the SOUTHMOD project at UNU-WIDER, is a static tax-benefit microsimulation model developed for Rwanda. The model enables the simulation of the effects of various tax-benefit reforms on individual-level disposable incomes and consumption, along with related distributional and budgetary impact assessments. RWAMOD was released in May 2023 and developed in collaboration between researchers from UNU-WIDER, SASPRI and RRA.

The model uses data from the 2016/17 Integrated Household Living Conditions Survey (EICV5, or *Enquête Intégrale sur les Conditions de Vie des ménages* in French; NISR 2021). EICV5 is the fifth national cross-sectional household survey conducted by the National Institute of Statistics of Rwanda. The database contains detailed information on demographic and household characteristics, expenditures, incomes, and social protection. The 2016/17 EICV survey is used as the underpinning dataset in the model because the most recent wave, EICV6 from 2020/21, was not fully implemented due to the COVID-19 pandemic. EICV6 includes data only on 40 per cent of the intended household sample. The EICV5 data were collected for a period of 12 months, from October 2016 to October 2017, from a total of 14,580 households. Income data were gathered in relation to the previous week, month or year before the first date of the interview.

The RWAMOD model simulates all taxes directly impacting households: personal income taxes, rental income taxes, immovable property taxes, value-added taxes, and excise duties. Most benefits

are also included in the model: VUP direct support and public works, Girinka, RDRP, FARG and pensions. More details on how the taxes and benefits are modelled, which assumptions are made and how the original dataset is adapted to the model are available in the RWAMOD Country Report (de Mahieu 2023).

3.2 The implementation of personal income tax in the model

The implementation of personal income tax (PIT) in the tax-benefit microsimulation model for Rwanda entails the following assumptions:

Tax unit. The tax unit is at the level of the individual. Some of the smaller income sources contributing to the tax base are only available at the household level in the data (see below). In the model, those incomes are allocated to the household head.

Tax base. The tax base for personal income tax adheres as closely as possible to the definition of taxable income contained in Chapter I of ‘Law No.027/2022 of 20/10/2022 establishing taxes on income’. It is composed of self-employment income or business profits from main and secondary job (individual level); profit from agricultural production (household level); employment income from main and secondary job (individual level); investment income, namely lease, interest or profit-sharing of non-business household assets (household level); and royalties and copyright income (household level).

Restrictions, exemptions and allowances. First, the model simulates PIT on self-employment income only if the taxpayer is a self-employed worker who cannot opt for the turnover tax regime due to a large turnover (of more than RWF20 million) and obtains income from their business. Second, PIT is applied to profit on agriculture and livestock from RWF12 million and up due to the associated tax exemption on income earned from these activities. In practice, this means that income tax does not apply to subsistence agriculture. Third, PIT applied to employment income is restricted to those in the formal sector.²

Tax schedule. The tax base in the baseline (previous tax regime from 2005–22) and reform scenarios are taxed at rates shown earlier in Table 2.

Model validation. As shown in Table 3, the income tax revenue simulated by RWAMOD is relatively close to the external statistics from OECD (2021), provided by RRA. The declining ratio can be explained by the growing population, which is not accounted for in RWAMOD. In the model, monetary values in the input dataset, based on EICV5, are only adjusted for inflation, following SOUTHMOD Modelling Conventions (UNU-WIDER 2022).

Figure 5 shows a comparison of the number of taxpayers per tax bracket, based on data from the MTRS and the EICV5. The figure indicates that high-income taxpayers are overrepresented in the EICV dataset. This may be explained by the unrepresentativeness of the EICV sample or under-declared revenues to the tax authority. Taxpayers in the first brackets are conversely underrepresented in the EICV dataset. Again, this may be due to unrepresentativeness of the

² Questions 12 and 16 in Section 6 of the EICV survey have been utilized to determine formality when preparing the model input data. Question 12 determines whether or not the person is ‘still working’, while question 16 asks about the nature of the respondent’s employment contract (‘permanent worker’, ‘fixed-term contract’, ‘casual worker’, ‘seasonal worker’, ‘daily worker’, or ‘other’). Formal employees are defined as those ‘still working’ who were either ‘permanent workers’ or those with a ‘fixed-term contract’. Informal workers are defined as those ‘still working’ but not ‘permanent workers’ or with a ‘fixed-term contract’.

EICV, the fact RWAMOD does not adjust the EICV5 data for population growth, or an overly strict formality condition in the model.

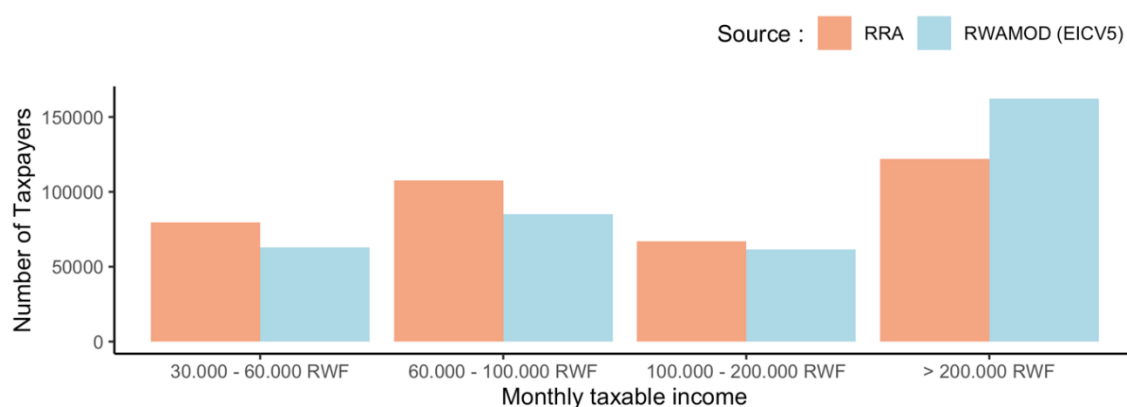
Table 3: Official and simulated tax revenue

	Year of simulation					
	2017	2018	2019	2020	2021	2022
RWAMOD	310.6	312.9	319.3	322.3	330.7	457.8
External statistics	277.3	311.7	353.4	361.5	-	-
Ratios	1.12	1.00	0.90	0.89	-	-

Notes: Tax revenue estimates are in RWFbillions. Ratios (RWAMOD/external) have been calculated before rounding the estimates. '-' reflects that no external data is available for the year in question.

Source: Authors' simulations using RWAMOD, which is underpinned by data from EICV5, and external statistics from OECD (2021), provided by RRA.

Figure 5: Number of taxpayers by monthly taxable income bracket



Notes: EICV5 data is updated to 2022 in the RWAMOD model.

Source: authors' calculations using EICV5 and RRA estimates directly come from the MTRS.

3.3 Estimation strategy

The effects of the 2023–24 income tax changes are evaluated by comparing different outcome variables under these reforms to 'business-as-usual' or 'counterfactual' scenarios where the previous income tax regime prevails in 2023 and 2024.

In the counterfactual 2023 and 2024 scenarios, the 2022 tax and benefit parameters are kept unchanged, while in the 2023 and 2024 reform scenarios, the new tax brackets and rates are implemented. Both the counterfactual scenarios and the reform scenarios run on the updated EICV5-based dataset. Price indices for 2023 and 2024 were not available at the time of writing, so average growth rates over the 2017–22 period (NISR 2022) are used to extrapolate the indices to the following two years.

The RWAMOD output datasets, containing simulated income tax liabilities and resulting disposable incomes, were then analysed using statistical software. The results were also compared with predictions from external sources where available.

3.4 Caveats

First, RWAMOD is a static, non-behavioural model and hence does not account for behavioural responses to changes in tax and benefit policies (e.g. labour supply changes or tax evasion). In

other words, the simulations reflect the morning-after effects of tax-benefit reforms. For example, the revenue losses resulting from the tax cuts evaluated in this work may be overestimated if the reforms increase labour supply or reduce tax avoidance behaviour.

Second, all consumption-based outcomes derived from the model are based on a one-to-one relationship between disposable income and consumption; a simulated decrease (increase) of RWF100 in disposable income results in a simulated decrease (increase) of RWF100 in consumption. The only exception to this rule in the model is a ‘protected share’ of consumption under which simulated consumption never falls. It was incorporated into the model in recognition of the fact that there may be some consumption of own-account-produced food. The protected share is assumed to be 25 per cent of the original consumption, following Tschirley et al. (2015).

Finally, the analysis covers the personal income tax reform, which only represents a part of the policy reforms outlined in the MTRS. Conclusions can therefore only be drawn regarding PIT changes, while an assessment of all planned policy changes described in the MTRS would require further simulations and additional information about these reforms.

4 Results

4.1 Main results

The main results are summarized in Table 4.

Table 4: Estimated impacts of the personal income tax reform in 2023–24

	2005–22 PIT rules in place in 2022	2023 impact evaluation		2024 impact evaluation	
		2005–22 regime in place in 2023 (counterfactual)	2023 regime in place in 2023	2005–22 regime in place in 2024 (counterfactual)	2024 regime in place in 2024
Government revenue (RWF billion)	963.8	1,033.4	1,006.7 -26.7 (-2.6%)	1,102.7	1,033.7 -69.0 (-6.3%)
Poverty rate (income based)	56.02%	56.08%	55.91% -0.17 pp.	56.13%	55.89% -0.24 pp.
Poverty rate (consumption based)	38.42%	38.48%	38.40% -0.08 pp.	38.53%	38.35% -0.18 pp.
Gini coefficient (income based)	55.01	54.95	55.03 +0.08	54.92	55.20 +0.28
Gini coefficient (consumption based)	45.73	45.70	45.82 +0.12	45.69	46.05 +0.36

Notes: the effect estimates compare the 2023 regime to the 2005–22 regime in 2023 (counterfactual) and the 2024 regime to the 2005–22 regime in 2024 (counterfactual).

Source: authors' calculations based on RWAMOD v1.0 (EICV5).

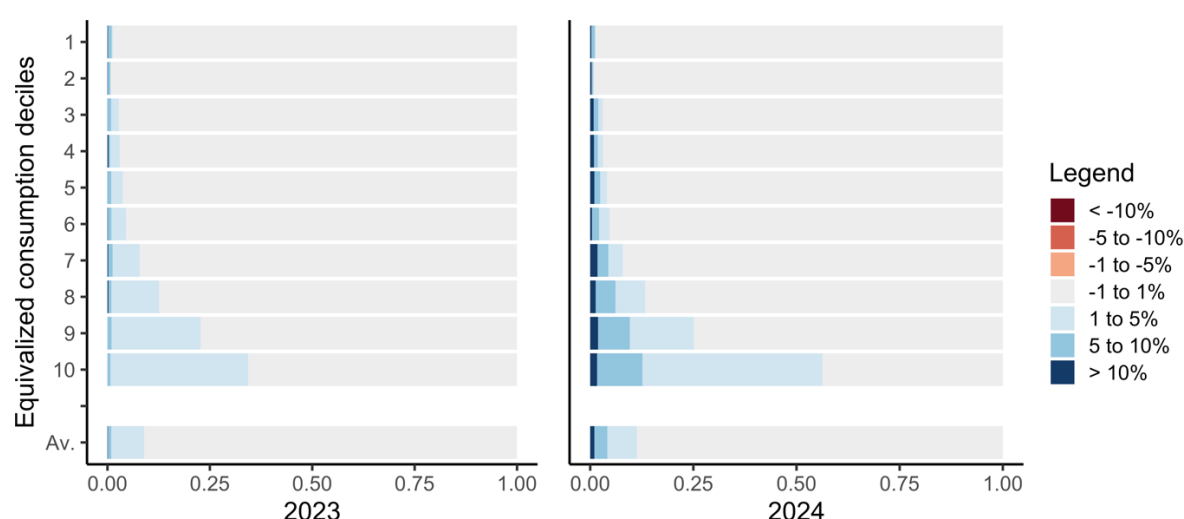
The government revenues from income tax are expected to decrease by RWF26.7 billion in 2023 and RWF69.0 billion in 2024, compared to the counterfactual scenarios. The MTRS suggests that the income tax reform would decrease the tax-to-GDP ratio by 0.4 percentage points, which is

expected to represent about RWF57.3 billion in 2024. Our predictions are of the same order of magnitude but slightly higher. This is potentially due to the fact that there are more individuals in the highest tax brackets according to the EICV5 dataset (used in RWAMOD) than the MTRS estimates (based on administrative data from RRA).³

Poverty rates, using both income- and consumption-based measures, are predicted to decrease slightly in 2023 due to the reform, by 0.17 and 0.08 percentage points, respectively. In 2024, those rates will decrease further, by 0.24 and 0.18 percentage points respectively, when compared to the counterfactual. These results have the expected sign, as some individuals who see their income taxes decrease fall under the poverty line in the counterfactual.

Inequality, as measured by the Gini coefficient, will however increase. This is because individuals that will benefit from the tax cuts mostly belong to households in the highest deciles (see Figure 1). Workers who do not pay taxes, i.e. those with earnings below RWF30,000 per month or those who benefit from exemptions (such as subsistence agriculturalists and pastoralists), often belong to the poorest households and will not be impacted by the reform. In contrast, the workers whose monthly taxable incomes exceed RWF30,000 generally belong to households in the middle and upper deciles and will experience decreases in their tax liabilities.

Figure 6: Effect of the 2023 and 2024 income tax reforms on household consumption, by decile



Source: authors' calculations based on RWAMOD v1.0 (EICV5).

Figure 6 shows the equivalized consumption changes by decile. Equivalized consumption is based on EICV data and follows a one-to-one relationship with disposable income following tax-benefit changes. As seen from the figure, households in the highest deciles will benefit the most from the reform. This becomes even more pronounced after the second phase of the reform in 2024.

³ Those estimates differ from the numbers reported in the media, namely RWF20.7 billion in 2023 and RWF22.5 billion in 2024 as reported in the New Times (2022a). The figures reported in the media are likely underestimated. Using the number of taxpayers in each bracket according to the MTRS, lower and upper estimates can be calculated straightforwardly by assuming that the taxpayers have revenues at the lower and upper bound of the brackets respectively. For example, in 2023, the 296,500 taxpayers that have a taxable income above RWF60,000 per month will see their taxes decrease by RWF6,000 monthly (as 30,000 of their income in the first bracket will be taxed at 0 per cent instead of 20 per cent). This provides a lower bound for the cost of the reform of RWF21.4 billion per year. The upper bound in 2023 is estimated at 27.1 billion per year. In 2024, the lower and upper bounds are, respectively, RWF37.3 and 64.0 billion per year. Our predictions are thus in that interval for 2023 and slightly above that interval for 2024.

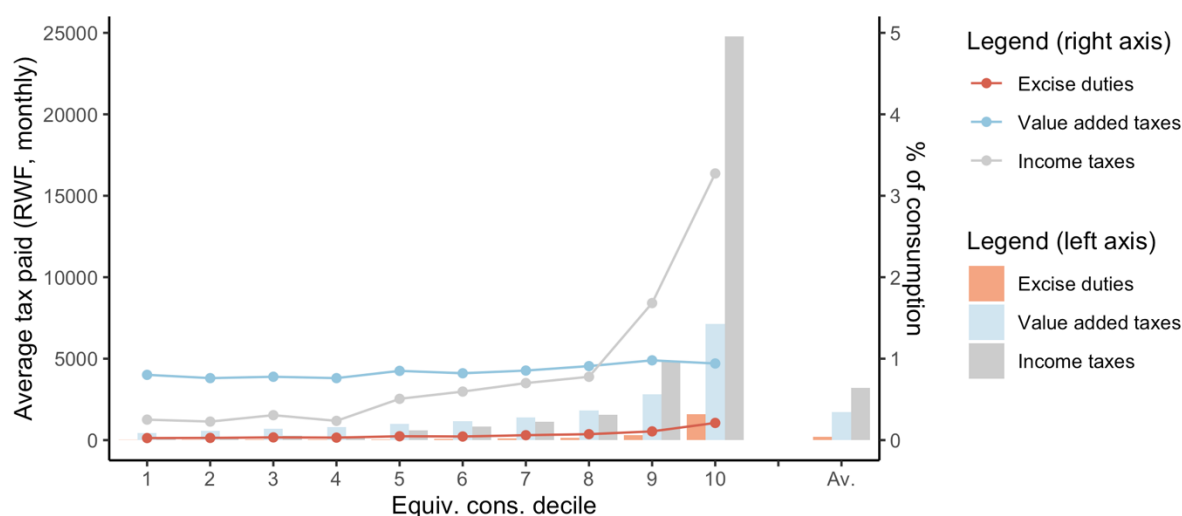
Changes in equivalized consumption are mostly between 1 and 5 per cent of pre-reform consumption, with smaller shares of households enjoying larger gains. The figure also shows that no households see their equivalized consumption decrease, which is a direct consequence of the fact that no one sees their taxes increase.

The analysis highlights that the personal income tax reform increases the disposable incomes of many workers who currently earn more than RWF30,000 per month. The simulation also shows that those workers generally belong to wealthier households, i.e. those in the upper deciles of equivalized consumption.

5 Discussion

As discussed above, the MTRS contains a number of tax reforms that include not only income taxes but also corporate income taxes, value-added taxes, and excise duties, all of which are being implemented from 2021–22 onwards. Those reforms are accompanied by administrative reforms to improve tax compliance. Importantly, all of these policy changes will have an impact on household incomes and government revenues. While corporate income taxes have an indirect impact on households – via changes in capital income as dividends and interests, or by being passed through to final prices or wages – VAT and excise duties have a direct impact on household budgets by increasing end-consumer prices. An interesting question that arises from the above analysis is how poverty outcomes and income distribution will evolve after all changes outlined in the MTRS have been achieved.

Figure 7: Progressivity of income taxes, VAT, and excise duties



Source: authors' calculations based on RWAMOD v1.0 (EICV5 uprated to 2022).

The parameters of the indirect tax reforms are not known yet, but it is possible to evaluate who pays those taxes in order to anticipate how their changes will impact the population. As can be seen from Figure 7, monthly VAT liabilities increase with the consumption deciles, and wealthier households contribute on average more to VAT revenues. When measured as a fraction of total consumption, the tax reflects a trend that vaguely increases with consumption, meaning that the tax is on average slightly progressive. This is due to the fact that a higher fraction of the consumption of poor households is made of VAT-exempt first necessity goods and self-produced agricultural goods.

Excise duties are more progressive. As can be seen from the same figure, the vast majority of excise duty revenues come from the top deciles. Those duties are usually levied on goods that create negative externalities on health or on the environment. Some duties can be however levied on industries that can be otherwise difficult to tax, such as excise duties for telecommunications (Matheson and Petit 2021). Further analysis suggests that the most progressive excise duties are the environmental excises (e.g., oil and lubricants), which is due to the fact households possessing fossil-fuel-propelled vehicles generally belong to the highest deciles. Health-related excise duties are also relatively progressive.

While the exact contours of the future VAT and excise duty reforms mentioned in the MTRS are not public at the time of writing, these observations allow for a relatively confident prediction that reducing VAT and increasing excise duties will generally increase the overall progressivity of the tax system and thereby improve the budgetary situation of the poorest households. Neither VAT nor excise duties are however as progressive as income taxes, and it is therefore uncertain whether the MTRS reforms will lead to an overall reduction in economic inequality.

6 Concluding remarks

This paper shows that the recently decided personal income tax reform in Rwanda will benefit a large number of taxpayers who will see their tax liabilities decrease in 2023 and 2024. National poverty will decrease slightly compared to the previous tax regime, as some of the affected households will climb the poverty line. Across the entire population, however, the reform mostly benefits the middle and upper deciles of households. The reform is also expected to lead to a significant decline in tax revenue for the government.

Compared to other major taxes affecting households in Rwanda, personal income tax is shown to be the most progressive. Comparisons of the Rwandan tax system with those of some of its peers, however, underline that there would still be room for higher income taxes for individuals at the top of the income distribution. In contrast to Rwanda, many of its peers levy taxes on high incomes at rates up to 40 to 45 per cent. Reducing VAT rates would also benefit a large share of the population, including the poor, due to the limited progressivity of the VAT regime. Reforms to VAT and excise duties can also be designed to be targeted at specific goods to increase their progressivity.

Finally, given that the income tax reform evaluated is only one of several reforms that will be implemented as part of the MTRS, this analysis only provides a partial view of how inequality and poverty will evolve following the ongoing and coming changes in the Rwandan tax-benefit system. Considering the ambitious objectives of eradicating poverty and reducing inequality, which are central to Rwanda's Vision 2050 development goals and a core ambition of the MTRS, further research about other aspects of the tax reforms outlined in the MTRS (i.e. CIT, VAT and excise reforms) could prove useful, including research using the newly released RWAMOD model.

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