

The Impact of Indirect Taxes on Labor Income and Employment in Morocco: A dynamic CGE Modeling

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Abstract

This study examines the impact of increasing Value Added Tax (VAT) rates on labor income and employment in Morocco on various sectors using a dynamic Computable General Equilibrium (CGE) Model calibrated by Social Accounting Matrix (SAM 2019). This research introduces a notable innovation by employing a dynamic calculation of sectoral contributions to VAT over time, providing insights of the implications of sectoral tax reforms on labor income, employment by qualification. It evaluates three scenarios, increasing VAT for low-contribution sectors, high-contribution sectors, and both combined. Results show stimulation of growth and incomes. The first scenario creates unskilled jobs in modern sectors needs skilled employment manufacturing. For the medium-skilled jobs the transformation in trade and agriculture by creation more employment there, but reduces unskilled employment in finance. The second scenario boosts skilled jobs in other sector as textiles and medium-skilled jobs in traditional sector in the agriculture specially but reduces jobs in transportation and non-financial services.

Keywords: Growth economic, Fiscal policy, Income, Computable General Equilibrium Model, Value Added Tax, Labor market, Morocco...

JEL Classification: N1, E62, C68, H24, E24...

I. Introduction

Indirect fiscal policies, particularly taxes such as value-added tax (VAT), play a crucial role in developing economies. They constitute important sources of revenue for governments, enabling investment in public goods and services such as infrastructure, education, and healthcare. These investments, in turn, contribute to economic growth by fostering a more productive workforce and improving overall economic efficiency (Gemmell, 1988). Unlike direct taxes, indirect taxes tend to be less distortive to economic behavior as they are levied on consumption rather than income, which can encourage savings and investment (Goulder & Summers, 1989).

Indeed, VAT reforms can lead to increased public investments, often driving long-term economic expansion. The effectiveness of such fiscal measures in fostering growth depends on the productive use of tax revenues in sectors with high returns on investment, such as education, healthcare, and infrastructure (Bhattarai & Benjasak, 2021). However, the impact of indirect taxes on different sectors may vary depending on their consumption patterns and labor composition. For instance, sectors like agriculture or trade, which are highly dependent on consumption, may experience increased demand following VAT reforms, leading to a rise in employment in low- or medium-skilled jobs. Conversely, sectors such as finance and insurance may be negatively affected, as they rely less on domestic consumption and are more sensitive to price variations (Feldstein, 1973).

The VAT plays a crucial role in the economies of developing countries. It accounts for nearly 40% of total tax revenues in these nations, highlighting its critical capacity to expand the tax base and provide stable revenue streams. However, its economic and social effects remain widely debated. In developing countries, VAT is often criticized for its regressive impact. Poor households allocate a significant portion of their income to essential goods subject to indirect taxation. Nearly 60% of their expenditures are affected by VAT, which reduces their purchasing power due to inconsistent reforms. A 1% increase in the VAT rate can reduce the spending of vulnerable households by approximately 0.5%. The Value Added Taxes also has mixed effects on employment. In some cases, it fosters job creation. However, in sectors where price sensitivity is high, it can reduce labor demand. For instance, a 2-percentage-point increase in VAT in sub-Saharan Africa reduced employment in small informal businesses by 5% over three years.

In Morocco, VAT was introduced in 1986 as part of structural reforms. By 2022, it represented approximately 35% of the country's total tax revenues. Despite its importance, VAT faces several challenges. Tax evasion accounts for nearly 30% of potential revenues. Limited rate harmonization and its regressive effects significantly impact poor households. Moreover, the effects on employment vary across sectors and types of activities. Agricultural and retail sectors, which employ over 40% of rural workers, are penalized by taxes on inputs, reducing their competitiveness and capacity for job creation. According to the Bank Al-Maghrib report (2019), the evolution of tax revenues relative to GDP between 1990 and 2019 can be divided into three phases. From 1990 to 2004, tax revenues stagnated at around 18.7% of GDP despite an increase in income tax (IR). From 2004 to 2008, revenues reached 25.9% due to VAT reform, higher corporate profits, and an expanded tax base. However, between

2008 and 2019, revenues declined to 20.7% due to the 2008 financial crisis, reductions in IR and corporate tax rates, and lower customs duties.

This evolution highlights Morocco's efforts to modernize its tax system while underscoring the challenges posed by economic fluctuations and fiscal reforms. Many studies attempt to evaluate the effects of fiscal reforms on growth and income, affirming the positive impact of these reforms, citing Gemmell (1988), Goulder & Summers (1989), and Lee & Gordon (2005). Sectoral implications must be considered when implementing VAT reforms, as labor market resilience can support job creation in alternative sectors (Autor et al., 2015; Bhattarai & Benjasak, 2021). Between 2000 and 2023, Morocco implemented three fiscal reforms, including a VAT reform in 2005 and another in 2023, which resulted in a significant increase in tax revenues in 2024. According to the Economic and Financial Report of the Ministry of Economy and Finance for 2024, VAT revenues increased by approximately 15.2%, while income tax (IR) revenues grew by around 8.1% compared to 2023.

Fiscal policy and economic outcomes in Morocco have been extensively studied in recent years. Dkhissi (2024) employed a nonlinear threshold regression model to examine the dual effects of fiscal austerity on economic growth, depending on debt and deficit levels. This study identified key fiscal thresholds—70.9% for public debt and 7.8% for the fiscal deficit—highlighting that fiscal austerity was recessionary below these thresholds but became expansionary above them. While this research provided innovative insights into macroeconomic fiscal dynamics, it did not address the implications of fiscal policy on labor income or employment. Similarly, Belcaid (2022) explored the sustainability of public finances in Morocco using Hansen's nonlinear approach. The study revealed an inverted-U relationship between government size and economic growth, where the positive impact of government spending was offset by distortionary effects when public debt and taxes exceeded certain thresholds. However, this analysis remained confined to macroeconomic outcomes and did not examine sectoral or labor market effects.

Other studies have focused on specific fiscal challenges in Morocco. Benkejjane et al. (2024) used vector autoregression (VAR) and vector error correction (VECM) models to assess the long-term effects of tax pressure on economic growth. Their findings showed that fiscal pressure had an insignificant effect on economic growth in the long run, underlining structural inefficiencies in Morocco's tax system. However, the study did not explore how tax pressure affected income distribution or employment. El Khalifi et al. (2024) used a dynamic general equilibrium model to analyze the welfare effects of fiscal policy, focusing on public investment, government consumption, and taxation. The study found that altering the tax mix could improve output efficiency and social welfare, but it did not examine the labor market or the specific effects of indirect taxation on households.

These studies collectively contributed to advancing the understanding of fiscal policy in Morocco, but they also revealed important gaps. Most notably, existing research focused on macroeconomic outcomes, with limited attention to the mesoeconomic and labor market dimensions of fiscal reforms. Furthermore, while dynamic modeling approaches such as VECM were employed, the use of computable general equilibrium (CGE) models to analyze the distributional and employment effects of fiscal reforms remained largely unexplored.

Our study makes two key contributions to the literature. First, it fills an **empirical gap** by focusing on the meso-economic effects of indirect tax reforms in Morocco on employment and disposable income. In contrast to previous research, our study investigates how changes in indirect taxes influence labor income and employment, providing critical insights into the socio-economic consequences of fiscal reforms. By extending the analysis beyond macroeconomic aggregates, this research offers a more comprehensive understanding of fiscal policy's real-world implications. Second, the study bridges the **methodological gap** by employing computable general equilibrium (CGE) modeling. This methodology enables the simulation of complex interdependencies across sectors and income groups, offering a more detailed and policy-relevant framework for assessing the impacts of indirect taxation. The subsequent sections present the structure of this article as follows: **Section 1** offers a literature review exploring the impact of fiscal measures on labor market qualifications and income inequality. **Section 2** outlines the methodology applied and describes the data sources utilized. **Section 3** provides a detailed presentation and discussion of the empirical results.

II. Literature Review

The theoretical framework examining the impact of indirect taxation reforms on economic growth and employment insights into this relationship, citing crucial theories such as the Laffer Curve and Barro's endogenous growth model. The Laffer Curve illustrates the non-linear relationship between tax rates and tax revenue. Laffer demonstrate that while increasing tax rates initially generates higher revenue, there is a threshold beyond which further rate increases discourage economic activity (consumption and investment) impact total tax revenue declines. Moreover, Barro's endogenous growth model emphasizing the productive utilization of tax revenue and argues that an optimal reform can generate increased public revenue, which can then be strategically invested in crucial areas such as infrastructure, education, and healthcare. These investments are intended to enhance productivity and stimulate economic expansion. However, the effectiveness of this approach depends on the government's capacity to efficiently allocate these resources to high-value-added sectors, ensuring that the investments translate into tangible economic benefits. Laffer and Barro's theories confirm the importance to identify an optimal tax rate to maximize revenue without hindering economic growth.

The Value Added Taxes reforms impacts on the employment in the recent literature presents two primary perspectives. One perspective, based on theories such as Harberger's (1962) analysis of tax incidence and Keynesian aggregate demand models, suggests that a VAT increase can negatively affect employment, particularly in price-sensitive sectors. These theories argue that higher VAT rates can reduce consumer demand, potentially forcing businesses to decrease production and lay off workers, leading to short-term employment contractions. One major critique of VAT is its regressive nature, as it disproportionately affects low-income households. According to Mirrlees (1971) model of redistributive taxation, fiscal reforms can be structured to mitigate this regressive impact by reallocating VAT revenues toward targeted transfers and social programs. By reinvesting these revenues in redistributive policies, governments can reduce inequality while enhancing fiscal equity. Diamond and Saez's (2011) optimal taxation model further underscore the need to balance

fiscal revenue objectives with incentives for consumption and investment. Consequently, a well-conceived VAT reform can not only improve fiscal efficiency but also address economic and social disparities, ultimately contributing to sustainable economic justice.

The other perspective, grounded in labor market theories within general equilibrium frameworks (Heckman, 1974; Kaldor, 1955), emphasizes the significance of how the additional revenue generated by a VAT reform is deployed. These theories contend that the long-term employment outcomes depend on the strategic allocation of these funds. If the revenue is directed toward labor-intensive sectors or used to support programs promoting job creation, the reform can positively impact employment. Moreover, a well-designed VAT reform can incentivize businesses to formalize their operations, thereby broadening the tax base and fostering more inclusive labor market growth by integrating previously informal workers into the formal economy. This transformation can result in improved working conditions, social security benefits, and enhanced economic stability.

As evidenced by studies evaluating the economic effects of indirect tax reforms on macroeconomic aggregates, employment, and incomes. This section presents an overview of the applications of CGE models in tax policy analysis in developing countries analyzing their impacts of VAT reforms on economic activity, revenue redistribution, and employment.

Since the early 1980s many studies have used multisectoral models to analyze the effects of tax policy on macroeconomic aggregates, including employment and income in developing countries, as highlight Rotemberg and Woodford (1994), Ludvigson (1996), Ramsey & Shapiro (2000). Discuss the effects of adjusting the VAT rate in developing countries, citing Emini (2000) analyze the impact of implementing a value-added tax (VAT) in Cameroon between 1994-2000 focusing on the short and long-term effects on welfare effects and resource allocation considerations. The short run, where only labor is mobile, contrasts with the long run, when capital also becomes mobile. The results indicate that while an imperfect VAT could initially improve welfare in the short run, this benefit diminishes in the long run. Conversely, a pure VAT leads to a widening welfare improvement from the short to the long run. Any short-term welfare deterioration tends to disappear or turn into gains over time.

Mankiw et al. (2009) observed that capital income is often taxed at lower rates, higher income tax rates are reduced, and the progressivity of income tax is moderated. They noted a rising prevalence of value-added tax (VAT) on final goods in OECD countries, as opposed to intermediate goods. In Pakistan, Ahmed et al (2010) focusing on widening the tax base and rationalizing tax rates examines the general equilibrium effects of existing taxes by removing them one by one.

It then assesses the micro-macro impacts of four policy experiments, including increasing the sales tax rate by 33%, applying a 10% sales tax on currently zero-rated goods, and bringing the services sectors into the tax net. Additionally, it evaluates the impact of imposing a 5% flat tax on agricultural incomes. In addition, they suggest that while these reforms may lead to a decrease in investment levels and lower consumption, they could ultimately reduce poverty.

Acosta Margain (2013) examined the effects of eliminating the zero-rating on food in Mexico's Value Added Tax (VAT) system using (CGE) model.

This change was intended to broaden the tax base and had two main outcomes. Firstly, it

addressed the price distortion between food and other items caused by the zero-rating. Secondly, its efficiency impact relied on alterations in the average productivity of the retail sector. The findings indicated that while a uniform tax approach increased efficiency, this was partly counteracted by a resource shift to the less productive informal sector. Despite attempts to mitigate regressivity, the reform had regressive effects as low-income households could not entirely avoid the tax by purchasing food from the informal sector.

Subsequently, Amir & al (2013) examines Indonesia's recent income tax reforms and their impact on crucial macroeconomic factors, poverty levels, and income distribution. They suggest that, though reductions in personal and corporate income taxes stimulate economic growth within a balanced budget framework. While, these changes marginally reduce poverty. Additionally, Bhattarai (2020) evaluates the micro and macro impacts of India's Goods and Services Tax (GST) using a CGE dynamic model of the Indian economy in 2017. It aims to assess the efficiency of resource allocation, income and employment growth, and income redistribution. The model is calibrated to micro-consistent input-output data and finds that GST reforms improve specialization among economic sectors, enhance transparency, and maintain a growth rate of over seven percent in output, investment, and physical capital. The reforms also promote human capital and infrastructure development. Sarwar (2023) via GCE analyze the impacts of direct and indirect tax reforms in Pakistan in 2017. The results suggest that, in the long term the reforms lead to economic growth, increased consumption, and stimulation of household incomes. Furthermore, the study shows a long-term balanced budget condition leads to better economic outcomes.

In Morocco, the empirical studies about tax reforms impacts remain limited, citing two general studies analyze the tax reforms impacts on economy, Chiadmi et al (2014) evaluates the economic impacts of different tax policies in Morocco via GCE applied a uniform VAT rate for all sectors. The results show an increase in VAT leads to an endogenous increase of GDP 5% in general, and Karim & Mansouri (2015) via dynamic multi-sectoral computable general equilibrium analyzes the implementation impact of a new system of agricultural taxation income in Morocco. The implementation of such a taxation system has negative effects during the year of implementation. Moreover, they suggest that the contraction of GDP is certainly less severe when limited to irrigated areas, although the impact on the well-being and income of rural households is not negligible. However, implementing a taxation model adapted to the agricultural sector will generate positive effects if postponed by one year and the income of poor and medium farmers will improve only one year after the implementation of the tax on the sector.

III. Methodology and Model Specification

- **The PEP 1.t model:**

This study employs the recursive dynamic PEP (1-t) adapted for the Moroccan economy. The model simulating the effects of Tax policy reforms on economic growth and employment in Morocco. It recursive a dynamic structure enables the examination of medium-term adjustments to policy changes, such as indirect tax reforms, capturing the evolving relationships among economic variables over time. Moreover, the model's calibration based on the 2019 Social Accounting Matrix (SAM) provided by Morocco's High Commission for

Planning (HCP), which includes 22 economic sectors and products across the primary, secondary, and tertiary sectors. Labor is disaggregated into unskilled, medium-skilled, and skilled categories, informed by the 2019 National Employment Survey. The tax system is represented through direct taxes (corporate and income taxes) and indirect taxes (VAT, product taxes, and subsidies). This disaggregation enables a comprehensive analysis of the fiscal impacts at both sectoral and labor market levels. The use of the PEP CGE model is motivated by its capacity to capture complex intersectoral dynamics, making it ideal for evaluating the broader effects of tax reforms on economic aggregates such as GDP, employment, and income distribution. The model was chosen over static alternatives to account for long-term capital accumulation, labor mobility, and productivity changes. This approach provides a more complete and dynamic assessment of fiscal policy impacts, with an emphasis on the temporal evolution of the economy following policy interventions.

The analysis follows a comparative statics approach, focusing on differences between baseline scenarios and those reflecting fiscal reforms. Key indicators, such as GDP, sectoral output, employment, and household income, are examined to assess the direct and indirect consequences of tax changes. Additional analyses are conducted by sector and labor skill level to uncover potential trade-offs between efficiency and equity in tax policy.

The MNO account “Education, health and social action” is disaggregated into three sub-accounts, firstly, public education, private education, and health, social action on the basis of the structures elaborated by HCP of 2019. Then, concerning the labor factor by qualification in unskilled, medium skilled and skilled for each branch, based on data from the national employment survey (ENE, 2019, HCP) For the evaluation study, based on SAM 2019 we devise taxes on direct taxes (Corporate tax and income tax) and indirect taxation aggregates (VAT, other taxes on products and consumption subsidies) applied to products and those applied to industries (taxes on production and production subsidies). Finally, as part of the dynamization of the model, among other things, investment by product has been broken down into private and public based on HCP structures, and the time period of the study extends from 2024 to 2030. In below (table 2) we will present the list of sectors of SAM 2019.

Fig 1. Social Accounting Matrix (SAM) Summary in Morocco (2019)

MILLIARD DIRHAMS	SECTORS	Product	EXPORT	USK	MSK	SK	cap	TM	IR	IS	TVA	AIO	SUBC	TAXP	SUBP	FIRM	GVT	HH	ROW	VSTK	INV PRIV	INV PUB	TOTAL
SECTORS	0	1326,2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1791,1
Product	771,5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	223	661	0	49,6	274,4	44,3	2020,3
EXPORT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	465	0	0	0	464,9
USK	90,2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90,2
MSK	60,9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60,9
SK	150,3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150,3
cap	651,9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	651,9
TM	0	9,8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9,8
IR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	0	29,3
IS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67,4	0	0	0	0	0	0	67,4
TVA	0	87,7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87,7
AIO	0	50,1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50,1
SUBC	0	-14,4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-14,4
TAXP	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
SUBP	-0,8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-0,8
FIRM	0	0	0	0	0	0	320	0	0	0	0	0	0	0	0	62,5	25	32	8,8	0	0	0	447,2
GVT	53	0	0	0	0	0	20	10	29	67	88	50	-14,4	14	-0,8	29,8	127	28	5,1	0	0	0	505,9
HH	0	0	0	90	61	150	312	0	0	0	0	0	0	0	0	76,5	82	17	75,6	0	0	0	865,4
ROW	0	563,9	0	0	0	0	0	0	0	0	0	0	0	0	0	28,5	5	4,5	0	0	0	0	602
VSTK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49,6	0	49,6
INV PRIV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	183	0	94	47,7	0	0	0	324
INV PUB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	0	0	0	0	0	44,3
TOAL	1791,1	2020,3	464,9	90	61	150	652	10	29	67	88	50	-14,4	14	-0,8	447	506	865	602	49,6	324	44,3	

Source: Authors compilation based on social account matrix published by High Commission for Planning

- **Simulation Strategy**

This model is applied specifically to the Moroccan context, with modifications made to the indirect tax equation. These modifications enable us to assess the economic sectors that contribute significantly to Morocco's economy, as well as those with a lesser contribution. The Value-Added Tax (VAT) equation for each product incorporates various components, such as labor costs, intermediate goods costs, import prices, domestic demand, and subsidies. This ensures that changes in VAT rates are accurately captured, reflecting their impacts on production costs, consumer prices, and overall consumption patterns.

• **Equation 1**

$$TVA_i = ttva_i \cdot \left\{ \left[\left(PL_i + \sum_{ij} PC_{ij} tmrg_{ij,i} \right) DD_i + \left((1 + ttim_i) PWM_i e + \sum_{ij} PC_{ij} tmrg_{ij,i} \right) IM_i \right] + AIP_i - SUB_i \right\}$$

Variables

TVA_i Public revenues from value-added tax on product i
PC_i Consumer price of composite product i

Parametrs

ttai_i : Other tax rates on the product i
ttsub_i : Subsidy rate for the consumption of product i
ttva_i : Value-added tax rate on product i
ttim_i : Import duty rate on product i
ttip_j : Tax rate on the production of branch j

To incorporate unemployment in the labor market segmented by qualifications into our Moroccan model, we have employed the wage curve equation developed by Blanchflower & Oswald (2005). They establish a negative relationship between the unemployment rate and the real wage rate. supported by empirical studies across several countries, indicating a negative correlation between local labor market unemployment rates and wage rates. The dispoible Studies by Blanchflower & Oswald (2005) and Card (1995) encompassing all developing countries suggest an elasticity φ close to -0.1, which is interpreted as a measure of the wage responsiveness degree in the labor market by qualification.

The equation is formulated as follows:

• **Equation 2**

$$\log \left(\frac{W(l,j)}{P_c} \right) = \varphi (l,j) * \log(u (l,j))$$

With :

W(l,j) : The wage rate by qualification and by branch of activity
u(l,j) : Unemployment rate by qualification and by branch of activity
P_c : Consumer price index
 $\varphi (l,j)$: Calibrated parameters (negative sign)

In a second phase, the unemployment rate is influenced by public sector wages, which are characterized by the overall economic and private sectors. Public wages are determined by public authorities and exhibit downward rigidity. Indeed, the difference between public and private wages depends on the level of successful negotiation. In the case of negotiation failure, a constant increment is applied to the negotiated wage. This relationship implicitly sets the wage in each company as a result of negotiations between the company and the union. This allows for the deduction of the wage equation for the entire economy, taking into account the wage differentiation between the two sectors in relation to the unemployment rate (assumed to be endogenous) Bontout & Jean (1998) as modeled through a Phillips curve-type equation. It is expressed as follows:

- **Equation 3 :**

$$\log \left(\frac{W_{pr}(l,j)}{P_c} \right) = \varphi(l,j) \log(u(l,j)) + \psi_p \log \left(\frac{W_{pu}(l,j)}{P_c} \right)$$

Including :

$W_{pr}(l,j)$: Private sector wage rate by qualification and by branch of activity

$W_{pu}(l,j)$: Public sector wage rate by qualification and by branch of activity

$\log(u,l)$: Unemployment rate by qualification and by branch of activity

ψ_p : Elasticity of real public wage to real private wage (positive sign)

$\varphi(l,j)$: Calibrated parameters (negative sign)

P_c : Consumer Price Index

The dynamics of the model mainly include capital accumulation, demographic evolution, factor productivity growth, and economic growth. Capital accumulation and investment by destination are accounted for in the model. Capital accumulation, or the function of depreciation rate and investment volume (IND), is considered. Additionally, investments from the previous period generate a new capital stock for the following period.

The capital stock by branch of activity is defined by the following equation:

- **Equation 4**

$$KD_{(i,kt,t+1)} = (1 - \delta)KD_{(i,kt,t)} + IND_{(i,kt,t)}$$

For modeling investment by destination (sectors), we follow the functional form proposed by Lemelin and Decaluwe (2007). The capital accumulation rate is a function of the ratio between the capital return rate (Rent) and the capital usage cost (U).

- **Equation 5**

$$\frac{IND_{(i,kt,t)}}{KD_{(i,kt,t)}} = \varphi_{(i,kt)} \left(\frac{Rent_{(i,kt,t)}}{U_{(i,kt,t)}} \right)^2$$

Capital usage function in the industry branch: The capital usage cost depends on the price of new capital (replacement cost of capital), the depreciation rate, and the interest rate. It serves as a regulatory device that modulates investment demand to maintain total private investment spending within the constraint imposed by the equilibrium condition.

There are no actual payments in the model that depend on the interest rate. However, in a model with financial assets, the interest rate would play a more elaborate role

Where:

- **Equation 6**

$$U_{(i,kt,t)} = P_{inv}(\delta + IR)$$

The interest rate here is more of an adjustment variable for investment demand, to ensure equilibrium between savings and the overall volume of investment.

Before presenting our three scenarios, our simulation strategy based on sectoral classification by VAT-contributing sectors. A calculation of VAT-contributing sectors was carried out during the period 2015-2020 using input-output tables published by the High Commission for

Planning. This aimed to target key low VAT-contributing sectors and others with high VAT-contributing sectors. The classification aimed to guide assist in decision-making if policymakers consider it for new indirect tax reforms in Morocco.

Using the tax revenues of the Value Added tax in Morocco between 2015-2020 Prevented the Input-Output tables published by High Commisiion for Planning to calculate the VAT contribution of 22 sectors in morocco involved calculating variations, multipliers, and finally classifying sectors using the rank. As result, we identify the highest contributing sectors were : construction and public works, the food and tobacco industry, water and electricity, and the metallurgical, electrical, and mechanical industries. In opposite the lowest contributing were : fishing, extractive industries, hotels and restaurants, and transportation as we present in the (table 3) below.

Table 1. VAT- contributing sectors in Morocco during 2015-2020

Hight Contributor			Low Contributor		
Rank	Product	Labels	Rank	Product	Labels
1	F45	Construction	1	B05	Fishing
2	D01	Food Industry and Tobacco	2	C00	Mining Industry
3	E00	Electricity and water	3	H55	Hotels and restaurants
4	D04	Metallurgical and Electrical Industry	4	I01	Transport

Source: Authors based on input-output tables (2015-2020)

Scenarios

To ensure the neutrality of the VAT system, the proposed reforms to VAT rates align with the guidelines set forth in the 2024 finance law. The selection of these scenarios is based on maintaining the overall tax burden while simplifying the current VAT structure. The aim is to reduce the multiplicity of VAT rates and exemptions, which currently create inefficiencies and disparities in the system. Ideally, a uniform VAT rate would be applied to all products. However, given the need to support certain sectors with lower rates, the reform is designed to strike a balance between tax fairness and sectoral support. The reforms propose two VAT rates, which will evolve gradually over time, avoiding excessive tax pressure on businesses and consumers. The proposed increases from 7% to 10% and from 14% to 20% are calculated to be equal in relative terms, with a variation of 3/7 for both transitions, ensuring a gradual and fair adjustment. In contrast, more abrupt increases, such as from 7% to 20%, would result in a tax burden increase greater than 100%, leading to potential fiscal pressure.

The approach aims to implement two rates evolving gradually over time, without creating excessive tax pressure. The increase from 7% to 10% is comparable to the increase from 14% to 20%. An illustration comparing a change from 4 rates to 2 rates with a change from 4 rates to 1 rate thus demonstrates the progressive and balanced approach of tax reform.

Table 2. Approach of tax reform

Old tax	New reform (tax)	Variation in %
7%	10%	$(10/7) - 1 = 3/7$
14%	20%	$(20/14) - 1 = 3/7$

In opposite side, the passage will be heavy in this case and can result fiscal pressure

Old tax	New reform (tax)	Variation in %
7%	20%	$(20/7) - 1 = 13/7 > 100\%$
7%	20%	$(20/10) - 1 = 100\%$

Source: Authors

Scenario 1: Increase Rates for High VAT-Contributing Sectors

The second scenario focuses on sectors that currently contribute a higher share to VAT revenue. In this scenario, the VAT rates will be adjusted in two phases. The first phase involves increasing the VAT rate for sectors that currently face a rate below 10%, raising it to 10%. These sectors include the food and tobacco industries, as well as the water and electricity sectors, and the metal, metallurgical, and electrical industries. In the second phase, the VAT rate for the construction sector, which currently faces a 14% VAT rate, will be increased to 20%. This gradual approach ensures that the adjustment is spread across different sectors, taking into account their varying contribution to the economy while avoiding sudden disruptions.

Scenario 2: Increase Rates for Low VAT-Contributing Sectors

In the first scenario, the VAT rates for sectors that contribute less to the overall VAT revenue will be increased. This includes industries such as fishing, extractive industries, hotels and restaurants, and transportation. For these sectors, the VAT rate will increase from 7% to 10%. In the transportation sector, however, the VAT rate will experience a more significant change, rising from 14% to 20%. The rationale behind this approach is to ensure that sectors with lower tax contributions are gradually aligned with broader tax reforms without imposing undue financial pressure on them. The impact of this increase will be monitored in terms of its effect on overall economic activity, macroeconomic aggregates, and disposable income.

Scenario 3: Combined Shock – Increase in VAT for Low and High VAT-Contributing Sectors

The third scenario presents a combined shock, where VAT rates are increased for both low-contributing and high-contributing sectors. This combined shock involves implementing the changes outlined in Scenario 1 and Scenario 2 simultaneously. Specifically, the VAT rate will increase for sectors such as fishing, extractive industries, hotels and restaurants, and transportation (low-contributing sectors), as well as for sectors like food and tobacco, water

and electricity, and construction (high-contributing sectors). The combined shock will be analyzed in terms of its impact on various economic indicators, including employment and income distribution. Additionally, the effects on employment qualification will be assessed, particularly how these VAT changes influence the demand for different skill levels across sectors. In this simulation, the shock is combined (1 and 2) or an increase rate of VAT for low VAT-contributing sectors and for the high VAT-contributing sectors with the rates already mentioned in the paragraphs above (scenario 1 +scenario 2). The results will be presented in the following sequence. First, we will examine the impact of fiscal policy, particularly the Value-Added Tax (VAT), on macroeconomic aggregates and household disposable incomes, as illustrated in Figure 1. Following this, we will analyze the effects of VAT increases on employment qualifications under three distinct scenarios: Scenario 1 will focus on the impact of VAT rate increases for high VAT-contributing sectors, Scenario 2 will examine the effects on low VAT-contributing sectors, and Scenario 3 will assess the combined shock—VAT increases for both low and high VAT-contributing sectors. Subsequently, we will explore how these VAT increases, under the three scenarios, affect employment qualifications in Morocco through 2030.

IV. Results and Discussion

This section presents the results of an analysis by examining the macroeconomic effects of a VAT increase, focusing specifically on its impact on household disposable income and the resulting changes in household consumption and savings patterns. Subsequently, three simulations investigate the effects of an increase in VAT on employment by qualification within sectors categorized as high-contributing, low-contributing, and a combined scenario incorporating both high- and low-contributing sectors in the last section. The three simulations explore how differing sectoral contributions to VAT influence the demand for labor and the allocation of employment opportunities in the Moroccan economy and can change the structure and the dynamic of labor in developing countries focusing on public investment and optimal indirect taxation. The comparative analysis in this study will provide an understanding of the consequences of indirect tax reforms on employment qualification, considering the complex intersectoral dynamics that create dynamic transformation in jobs in the long term. This approach allows for an evaluation of whether the indirect tax reform promotes a redistribution of skilled jobs or exacerbates the dynamic employment between high- and low-contributing economic sectors in the long-term using the Equilibrium dynamic model.

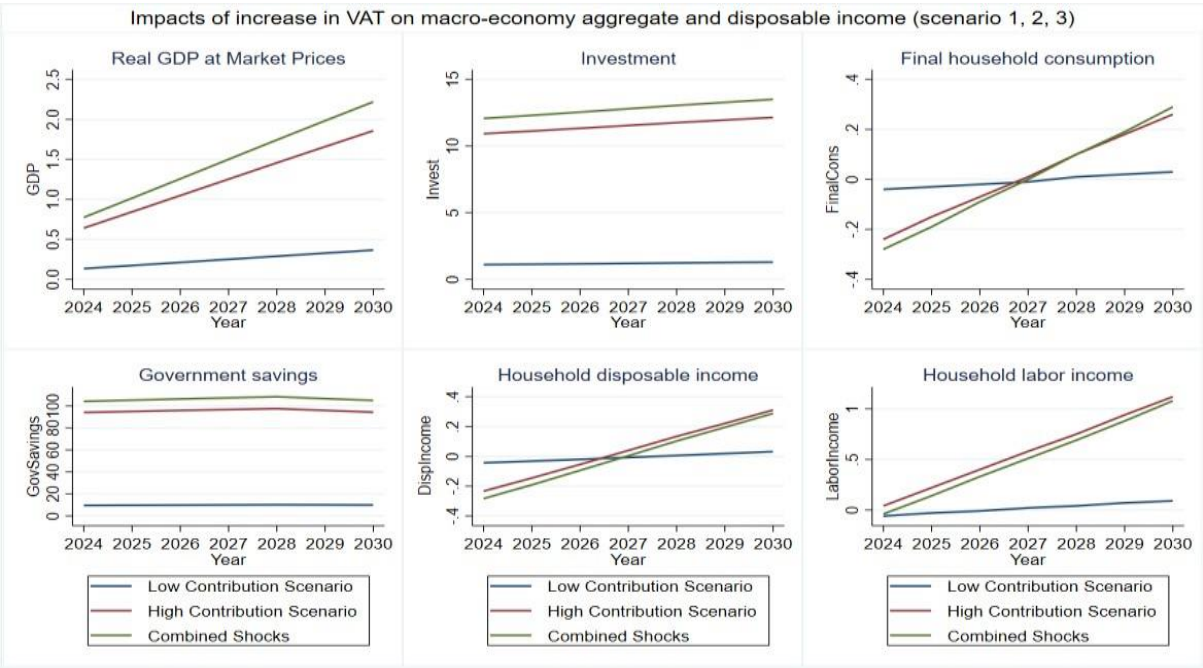
Impacts on macro-economy aggregate and disposable income

Following the increase in investments stimulated by increasing VAT rates in dynamic sectors, significant growth in macroeconomic aggregates is presented in (Figure 2) below. The changes in real sectoral GDP at market prices over the 6 years at a rate of 1.90% for high-contributing sectors and 1.87% when we applied combined shock. However, for low sectors, the increase in VAT results in very weak trend changes in real sectoral GDP. However, less influential sectors exhibit a more moderate trajectory, showing minimal engagement in macroeconomic aggregates, income generation, and consumption, even after the increase in

VAT. Furthermore, the characteristics specific to sectors affected by policy reforms notably influence final household consumption, household disposable income, and overall income dynamics. Except for a moderate trend observed in the initial scenario, less influential sectors are at risk of experiencing a decline in household consumption, decreasing from -0.04% in 2024 to 0.03%, primarily due to the increase in relative prices (pc), resulting in a decrease in disposable income. This moderation in consumer spending will coincide with a moderate pace of economic expansion, gradually progressing from 0.13% to 0.36% by 2030, while investment levels remain relatively stagnant.

Moreover, applying a combined shock increases macro-economy aggregate and disposable income due to the predominance of the positive effects of the second scenario, characterized by the stimulation of economic activity and investment with upward trends. The VAT increase resulting from activity and public investment stimulation will achieve the intertemporal effect. This effect influences the relative consumption prices, creating a substitution effect among products. This implies overall substitution effects generated by the fiscal shock, especially in scenarios 2 and 3, where the shock is combined.

Fig 2: Impacts of increase in VAT on macro-economy aggregate and disposable income (scenario 1,2,3)



Source: Authors

Impacts of increase in VAT on employment qualification for High-contributing sectors (shock 1)

A VAT increase in Morocco is projected to have varying employment effects across different sectors. High-contributing sectors (food and tobacco, water and electricity, metal, and construction) demonstrate diverse responses (Table 5). Notably, labor-intensive sectors like

textiles are expected to experience a significant 11% increase in skilled jobs. This growth is likely driven by relatively stable consumer demand for textile products, input-output relationships that may favor domestic production, and a potential shift of resources from modern to traditional industries. The agricultural sector, a key component of the Moroccan economy, is also projected to see employment gains across all skill levels (6.7% skilled, 8.9% medium-skilled, and 12% unskilled). This reflects consistent demand for essential agricultural goods and the possibility of increased consumer spending on these products.

In contrast to the gains in traditional sectors, modern sectors are projected to experience job losses across all skill levels following the VAT increase (1% unskilled, 3% medium-skilled, and 10% skilled). This decline can be attributed to several factors. Demand in modern sectors tends to be more sensitive to price changes, meaning that the VAT-induced price increases could lead to reduction in consumer demand. Additionally, these sectors are typically more capital-intensive, relying more technology than on labor, which can exacerbate job losses when faced with increased costs. The price elasticities of demand also impact the productivity of these modern sectors, further contributing to potential job losses. The analysis of high-contributing sectors reveals differing employment dynamics following the VAT increase. While sectors with a smaller proportion of skilled jobs, such as textiles, are projected to see an 11% increase in skilled jobs, traditional sectors like agriculture will also experience growth across all skill levels. However, modern sectors are projected to experience job losses across all qualifications. Overall, the VAT increase is expected to have a mixed impact, creating jobs in some sectors (particularly textiles and agriculture) while leading to job losses in others (such as transportation). This highlights the complex and varied effects of the policy change across different parts of the Moroccan economy.

Table 3. Impacts of increase VAT for High-contributing sectors on employment by qualification in Morocco (2024-2030)

Code	Label	Unskilled workers	Medium-skilled workers	Skilled workers
A00	Agriculture	12,23%	8,95%	6,71%
B05	Fishing	0,86%	0,55%	-0,34%
C00	Mining industry	1,34%	1,62%	2,07%
D01	Food industry and tobacco	-0,03%	-0,14%	-0,39%
D02	Textile and leather industry	0,01%	-5,15%	11,27%
D03	Chemical industry	0,43%	0,88%	1,59%
D04	Metallurgical and electrical Industry	0,09%	0,08%	0,03%
D05	Other manufacturing	0,07%	-0,17%	-0,82%
E00	Electricity and water	0,46%	0,38%	0,20%
F45	Construction	0,33%	0,40%	0,54%
G00	Trade	-0,15%	-0,80%	-3,14%
H55	Hotels and restaurants	-0,20%	-0,45%	-1,14%
I01	Transport	-1,19%	-2,53%	-10,22%

I02	Post and telecommunications	-0,39%	-0,79%	-1,98%
J00	Financial activities and insurance	0,27%	0,07%	-0,47%
K00	Real estate	0,77%	0,90%	1,15%
L75	Public administration	0,04%	0,04%	0,04%
EM	Private Education,	1,36%	1,12%	0,45%
ENM	Public Education,	0,74%	0,35%	-0,83%
SN	health and social action	0,49%	-0,18%	-2,78%
OP0	Other non-financial services	-0,91%	-1,91%	-6,30%

Source: Authors

Impacts of increase VAT for low-contributing sectors on employment qualification (shock 2)

The increase of Value Added Taxes within low-contributing sectors (fishing, extractive industries, hotels and restaurants, and transportation) impact the employment qualifications across 22 sectors are present in Table 4. The VAT reform is expected to result in both job gains and losses across different sectors and skill levels. However, the magnitude of these changes will vary considerably. For example, the construction sector is projected will see employment growth due to factors such as government infrastructure spending or increased private investment in construction, offsetting the potential negative impact of the tax. However, the fishing sector is expected to see a significant decline in unskilled jobs. This decline could be attributed to higher prices caused by the VAT in the sector, increased operating costs for fishing businesses, or shifts in fishing practices. This highlights the uneven sectoral impact of the VAT reform. Moderate impacts on skilled jobs are projected in the agriculture sector (A00), with a notable 39% employment growth rate between 2024 and 2030. This substantial growth in skilled agricultural jobs could be driven by factors such as increased demand for higher-value agricultural products, adoption of new technologies requiring skilled labor, or government policies promoting agricultural development. Conversely, some sectors, such as commerce, are expected to experience a significant 28% decrease in employment. This decline in commerce sector jobs could be due to reduced consumer spending as a result of higher prices due to the VAT, increased competition from online retailers, or other structural changes within the retail sector.

This further emphasizes the heterogeneous effects of the VAT reform across different sectors of the Moroccan economy. Commerce and agriculture are expected to experience growth in medium-skilled employment by 6.2% and 4.6%, respectively, during the fiscal reform period. Additionally, the creation of unskilled jobs will be evident in sectors such as manufacturing, other manufacturing industries, and agriculture, with increases of 1.6%, 3.8%, and 1.4%, respectively. In contrast, the finance and insurance sector are anticipated to witness a 37% reduction in unskilled employment between 2024 and 2030. Overall, while the VAT increase will positively impact certain sectors by creating new jobs, particularly in construction and agriculture, it will also lead to job losses in other sectors such as fishing and commerce. These effects highlight the varied impacts of the policy change across different areas of the economy

Table 4. Impacts of increase VAT for low-contributing sectors on employment by qualification in Morocco (2024-2030)

Code	Labels	Unskilled workers	Medium-skilled workers	Skilled workers
A00	Agriculture	-1,20%	4,33%	-0,67%
B05	Fishing	-1,21%	3,33%	-0,71%
C00	Mining industry	-1,22%	2,58%	-0,75%
D01	Food industry and tobacco	-1,23%	2,01%	-0,77%
D02	Textile and leather industry	-1,24%	1,57%	-0,80%
D03	Chemical industry	-1,25%	1,21%	-0,82%
D04	Metallurgical and electrical industry	-1,25%	0,93%	-0,84%
D05	Other manufacturing	-1,23%	2,09%	-1,12%
E00	Electricity and water	-1,23%	1,85%	-0,76%
F45	Construction	-1,24%	1,62%	-0,86%
G00	Trade	-1,24%	1,39%	-0,88%
H55	Hotels and restaurants	-1,25%	1,19%	-0,90%
I01	Transport	-1,25%	0,99%	-0,91%
I02	Post and telecommunications	-1,25%	0,81%	-0,92%
J00	Financial activities and insurance	-1,09%	2,98%	0,11%
K00	Real estate	-1,09%	2,84%	0,45%
L75	Public administration	-1,09%	2,67%	-0,02%
EM	Private Education,	-1,09%	2,47%	-0,02%
ENM	Public Education,	-1,09%	2,26%	-0,03%
SN	health and social action	-1,09%	2,02%	-0,05%
OP0	Other non-financial services	-1,08%	1,77%	-0,07%

Source: Authors

Impacts of increase VAT for High/low contributing sectors on employment qualification (combination shock)

Increasing VAT for the low and high-contributing sectors across 22 industries will be shown in (Table 6) below. This change is expected to lead to a growth in employment between 2024 and 2030. In agriculture, new skilled, medium, and unskilled jobs are predicted to increase by 4.7%, 8.7%, and 8.2%, respectively. The chemical and para-chemical industry is also expected to grow, with new skilled jobs increasing by 6.3% and medium-skilled jobs by 5.3%. However, there may be job losses in the non-financial services sector across all skill levels (unskilled, medium-skilled, and skilled), with reductions of 1.5%, 2.2%, and 5.8% respectively. Additionally, the public and private healthcare sector may experience a 3% reduction in skilled jobs during the study period.

Table 5. Impacts of increase VAT for high/low contributing on employment growth rate (in %) by qualification (combined shock) in 2024-2030

Code	Label	Unskilled workers	Medium-skilled workers	Skilled workers
A00	Agriculture	4,71%	8,70%	8,20%
B05	Fishing	0,57%	0,37%	-0,05%
C00	Mining industry	1,35%	1,86%	2,49%
D01	Food industry and tobacco	-0,06%	-0,17%	-0,43%
D02	Textile and leather industry	-0,17%	-2,28%	-22,62%
D03	Chemical industry	0,96%	5,25%	6,31%
D04	Metallurgical and electrical industry	0,10%	0,08%	0,03%
D05	Other manufacturing	0,04%	-0,21%	-0,87%
E00	Electricity and water	0,48%	0,39%	0,21%
F45	Construction	0,32%	0,39%	0,53%
G00	Trade	-0,37%	-1,06%	-3,57%
H55	Hotels and restaurants	-0,06%	-0,20%	-0,56%
I01	Transport	-0,62%	-1,02%	-2,39%
I02	Post and telecommunications	-0,58%	-0,95%	-2,17%
J00	Financial activities and insurance	0,30%	0,06%	-0,50%
K00	Real estate	0,75%	0,91%	1,19%
L75	Public administration	0,05%	0,05%	0,05%
EM	Private Education,	1,64%	1,18%	0,44%
ENM	Public Education,	0,89%	0,36%	-0,80%
SN	health and social action	0,66%	-0,26%	-2,91%
OP0	Other non-financial services	-1,52%	-2,20%	-5,88%

Source: Authors

• Discussion

The results of this study provide valuable insights into the effects of VAT reforms on economic growth, employment, and income distribution. The study confirms the validity of endogenous growth theories and public investment theories, which suggest that increased government revenue, primarily from VAT, can stimulate economic growth and job creation. By broadening the tax base, the government can fund productive investments that foster private sector growth, especially in key sectors such as infrastructure, construction, and services. This increased demand for goods and services leads to higher production, which in turn creates additional employment opportunities. The ripple effect of these investments contributes to long-term economic development, as supported by Keynes' multiplier effect (1931). The findings align with earlier research by Sahn & Younger (2000) and Brøchner et Sørensen (2007), who emphasized the positive impact of public investments on private sector activity and employment. However, this study also faces certain limitations. One notable concern is the regressivity of VAT, as pointed out by Bird & Gendron (2007). The impact of

VAT reforms on income distribution requires careful consideration, particularly since VAT tends to disproportionately affect lower-income households. While the simulation results indicate positive effects on employment and income, these benefits may not be evenly distributed across all income groups. Additionally, the reliance on simulation-based methods means that the actual impact of VAT reforms may differ due to unforeseen factors such as changes in consumer behavior, economic shocks, or alterations in government policy. Another limitation is the assumption that public investment will always efficiently translate into increased private investment and job creation. While this holds in many cases, the efficiency of public spending can vary, and there may be circumstances where the expected multiplier effects are less pronounced.

Despite these limitations, the study highlights several successes. The simulations consistently show a positive relationship between VAT rate increases and employment growth, particularly in low-skilled sectors like agriculture, commerce, and construction. This aligns with findings from Moroccan studies such as those by Ezzahidi & El Alaoui (2014), who used Input-Output modeling to assess job-creating sectors in Morocco. The study also reinforces the idea that increased government investment can drive economic growth by stimulating both public and private sector activity. In particular, the increase in public investment, fueled by higher VAT revenues, positively impacts sectors that require substantial labor input, thereby creating new employment opportunities. Additionally, the study offers important insights into the potential dynamics of job creation and income generation in Morocco, which can inform future policy decisions.

In comparing the results of the different simulations, it is evident that the combined shock scenario (Scenario 3) yields the most significant employment and income impacts. The increase in VAT rates for both high and low VAT-contributing sectors provides a more balanced approach, stimulating growth across various sectors of the economy. However, this approach also carries the risk of higher production costs, which may reduce profitability and lead to job losses in certain industries. As observed in our simulations, the agricultural sector experienced the most significant positive variation in employment, while modern sectors, which require fewer workers, saw more modest gains. This reflects the structural nature of the economy and the differing impacts of VAT reforms on various sectors.

The findings of this study align with the work of Barro & Lee (1993), who emphasized the role of productive investments in driving long-term economic growth. The increase in public investments, driven by VAT revenue, can create new employment opportunities and enhance income levels across various sectors. However, as seen in the simulations, the potential negative effects on production costs and employment in certain industries should not be overlooked. Future research could explore the long-term effects of VAT reforms on the distribution of wealth and income, as well as the potential for targeted policies that mitigate the regressive impacts of VAT on lower-income households.

The increase in VAT in three scenarios stimulate demand where a significant variation in public investment has led to an increase in local demand, stimulating employment and household incomes in long time presented in (table 7) below.

Table 6. The overall impacts on Moroccan economy of the three reforms/indirect tax policies

	Economic activity (GDP, Investment, Revenue)	Revenue (disposable revenue, consumption revenue, labor income)	Employment by qualification		
			Unskilled	Medium	Skilled
Low contributing sector (Scenario 1)	+	+	-	+	-
High contributing sector (Scenario 2)	+	+	+/-	+/-	+/-
Combinate Schock (Scenario 3)	+	+	+/-	+/-	+/-

Source: Authors

The increase in have a positive impact on Morocco's economic activity, leading to increases in GDP, investment, and government revenue. These 3 reforms boost income, including disposable income, consumption revenue, and labor income. However, the effects on employment vary by qualification level. Scenario 1, targeting low-contributing sectors, supports medium-skilled employment but reduces opportunities for unskilled workers. Scenario 2, focusing on high-contributing sectors, results in mixed outcomes across all qualification levels due to shifts in sectoral employment demand. Scenario 3, combining both approaches, presents a balanced yet mixed impact on employment. These findings emphasize the importance of well-targeted VAT reforms in economic growth and labor market.

Conclusion

This study contributes significantly to understanding increasing VAT in Morocco by providing a nuanced analysis of their potential economic. Using a dynamic Computable General Equilibrium (CGE) model calibrated to the 2019 Social Accounting Matrix (SAM) of Morocco, this research offers a comprehensive multisectoral and meso-economic analysis. This approach is essential for addressing the specific needs of Morocco's diverse and evolving economy. By considering sectoral and household-level dynamics, the study provides a deep dive into the complex effects of VAT reforms, which have often been oversimplified in broader fiscal discussions. The findings confirm that VAT reforms can increase government revenue and stimulate economic growth. However, they also introduce challenges regarding income distribution and employment dynamics. The study highlights the nuanced relationship between VAT increases and sectoral performance. It demonstrates how different sectors, such as agriculture, trade, and textiles, respond to VAT reforms in distinct ways. Understanding these sectoral variations is critical to developing tax policies that are both effective and equitable. By addressing these differences, the Moroccan government can ensure that VAT reforms lead to broader economic benefits without exacerbating existing inequalities.

This research advances the current body of knowledge on VAT reforms by emphasizing the importance of considering sectoral and labor market heterogeneity. Traditional analyses often treat labor markets as homogenous, overlooking the differential impacts of policy changes on workers with varying skill levels. This study, however, underscores the necessity of considering labor qualifications when evaluating VAT reforms. The findings suggest that VAT increases disproportionately affect low-skilled workers, particularly in more sensitive sectors to tax changes. Conversely, medium- and high-skilled workers in growing sectors like trade and textiles may benefit from increased employment opportunities.

Moreover, this study provides empirical evidence on the potential employment impacts across various sectors, shedding light on the challenges faced by low-skilled workers and the opportunities for medium- and high-skilled workers. The results indicate the need for targeted policies to support low-skilled workers, such as retraining programs or targeted social transfers, to prevent exacerbating income inequality. It also emphasizes the need to strengthen sectors with the potential to generate employment for skilled workers, thus ensuring a more balanced and sustainable labor market. The study also highlights the importance of disaggregating households by social class and consumption behavior to understand VAT reforms' microeconomic effects better. Lower-income households, who spend a more significant proportion of their income on consumption, are more likely to be negatively affected by VAT increases. By analyzing the effects on different social groups, this research provides valuable insights into the redistributive effects of VAT. These findings suggest that VAT reforms, if not carefully designed, could lead to greater inequality, making it imperative for policymakers to incorporate compensatory measures to mitigate these effects.

The Moroccan government must implement complementary measures to ensure that VAT reforms lead to inclusive and sustainable economic growth. Targeted transfers to low-income households, subsidies for basic goods, and investments in human capital development are

essential to offset the regressive effects of VAT increases. Without such measures, the government risks exacerbating existing disparities, which could undermine the broader economic objectives of the reforms. In this context, it becomes clear that a broader social policy framework must accompany VAT reform to ensure its success. Additionally, focusing on sectors that have the potential to generate employment for skilled workers can further enhance the long-term sustainability of these reforms. As the study shows, the impact of VAT reforms is not uniform across sectors. While some sectors may face challenges, others, particularly those with high value-added and export potential, could experience significant growth. By targeting these sectors through investment and policy support, the government can maximize the employment benefits of VAT reforms and help ensure that the workforce is prepared for the demands of a modernizing economy.

This study provides a solid foundation for designing VAT reforms that are not only fiscally sound but also socially equitable. The research highlights the importance of considering the complexities of Morocco's economy, labor market, and income distribution when designing tax policies. Policymakers must adopt a holistic approach to VAT reform, considering the diverse impacts on various sectors and households. By doing so, they can create a tax system that fosters sustainable economic growth while ensuring that the benefits are broadly shared across society. This research offers important guidance for future studies on VAT reforms in developing economies, particularly those with structural characteristics similar to Morocco. The methodologies used in this study, including CGE modeling and the disaggregation of households by income group, can be applied to other countries looking to evaluate the potential impacts of tax reforms.

Furthermore, the findings suggest that VAT reform should not be viewed in isolation but as part of a broader package of economic and social policies to achieve inclusive growth. The broader implications of this work extend beyond VAT policy to the ongoing discussion on tax reform, fiscal sustainability, and social equity in emerging economies. Tax systems must be designed to raise revenue and promote social justice and economic inclusion in an era of increasing economic challenges. This study contributes to that discussion by providing evidence on how VAT reforms can be tailored to address the specific needs of developing economies like Morocco. By taking these lessons to heart, policymakers in other countries can craft VAT reforms that are both effective and equitable, paving the way for a more inclusive global economy.

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