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# **Fiscal revenues and macroeconomic effects : case of Burkina Faso**

**Ibrahim SAWADOGO<sup>1</sup>**

## **Abstract**

How to generate significant tax revenues without compromising the long-term growth potential of the economy? We address this question by estimating the long-run relationship between, the growth, investment and tax policy. The results showed that fiscal revenues contribute positively to economic growth in the long run. A 1% increase in fiscal revenues leads to about 0.77% increase in real GDP. The impact of indirect tax revenue is more important than the direct tax revenue. In this fact, it's very important to focus the government attention on mobilizing of resources from the indirect tax. This study indicates a 1% increase in the fiscal revenues tends to increase the investment by 0.82%. The best strategies or reform for fiscal resources mobilization in Burkina involves several critical lines, such as (i) to reduce tax exemptions, (ii) to tax optimally the informal sector, (iii) to increase the taxes for alcohol and tobacco (iv) to enhance management, governance, and human resources to support tax collection, (v) to decentralize the fiscal administration, (vi) to fight tax fraud by introducing more modern business procedures in the fiscal administration based on technologies.

**JEL classification numbers:** O11, H2, H21, H3, C5, C51

**Keywords :** tax revenue mobilization, tax policy, Economic Growth, ARDL model

## **1. Introduction**

The challenge of mobilizing domestic taxes is important for sustained growth, accompanied by structural transformation of the domestic economy and poverty reduction. Increasing a domestic resource mobilization offers many potential benefits to African economies, such as to reduce the dependency on external flows, to give African countries greater policy space, to increase their ownership of the development process.

In recent year, Burkina Faso has recorded remarkable economic growth rate, with an average GDP growth rate of 6.0% per year over the period 2007-2017. This economic performance has been accompanied by structural reforms, notably in economic governance, business climate, fight against corruption, internal and external resource mobilization for the financing of development projects. To maintain this robust economic growth, Burkina Faso need to use increasingly internal financial resources, in order to reduce the risk from instability of external financing. In addition, the mobilization of financial internal resources is essential for the financing of national development programs and the structural transformation of the economy. Efficient taxation can contribute to sustainable and inclusive economic growth when the resources is used to finance productive public expenditures in priority sectors such as transport, telecommunication, education and health infrastructure.

Thus, in Burkina Faso the issue of resource mobilization remains fundamental for the financing of productive investments and sustainable and resilient economic growth. Tax revenues represent on average 90% of total budget resources over the period 1990-2017. However, despite the implementation of many tax reforms, the tax burden rate in Burkina, although on a

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rising trend, remains below the West African Economic and Monetary Union (WAEMU) standard of 20% and its optimal level. Indeed, the tax burden rate in Burkina is about 16% of GDP in the last five years.

Given the challenges of increased mobilization of fiscal resources in Burkina Faso, it's necessary to analyze the macroeconomic effects of taxation on the economy, in order to guide fiscal policy. How to generate significant tax revenues without compromising the long-term growth potential of the economy? What new tax reforms could be envisaged, in order to increase the tax rate?

This study provides an empirical contribution to the analysis of the macroeconomic effects of fiscal tax revenue in Burkina Faso. Specifically, the aim is to estimate the impact of short and long term of the different types of taxes on different macroeconomic aggregates including Gross Domestic Product (GDP), expenditure on investment and formulate economic policy recommendations.

The remainder of the paper is organized as follows. Section 1 relates the background and recent developments. Section 2 outlines the econometric methodology employed for the empirical analysis. Section 3 reports the empirical results of the study. Section 4 concludes the study and provides some policy recommendations.

## **2. Background and recent Developments**

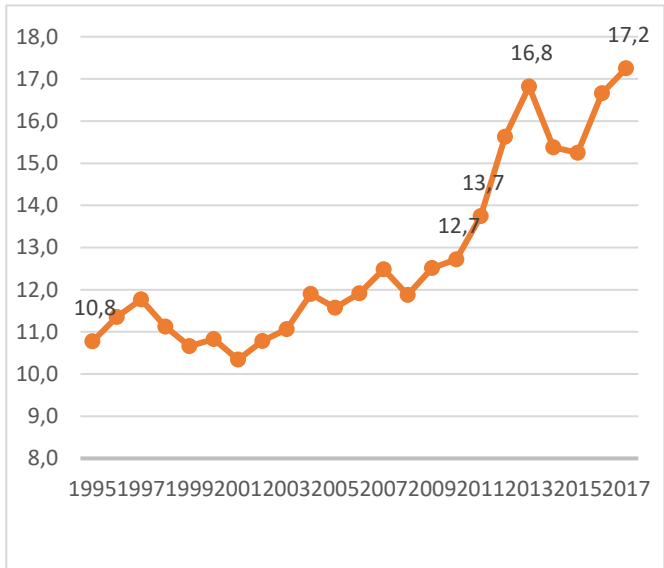
In Burkina Faso, during the period 1995 to 2010, the tax revenues stagnated, between 10 percent and 13 percent of GDP. Burkina Faso had suffered from low tax collection, under a complex tax system with many tax exemptions. Increasing domestic revenues was essential to create fiscal space while keeping growth sustainable. To address this situation, a tax reform strategy was adopted in early 2010 to streamline tax incentives, simplify income tax legislation and improve indirect tax management. This way, from 2011 to 2017, the tax revenues increased significantly. It reached around 17.2 percent of GDP in 2017 but remain below the WAEMU target of 20 percent of GDP.

Also, over the last 20 years, the structure of tax revenues hasn't changed, with a preponderance of indirect taxes. Indeed, over the period 1990-2017, indirect taxation generated about 78 percent of tax revenue and 64 percent of total fiscal revenue. The goods and services tax are the main source of fiscal revenue in Burkina Faso, with Value added tax (VAT) contributing more than half.

Furthermore, the weight of different taxes in indirect taxation has evolved significantly. Over the period from 1990 to 2008, trade taxes accounted for about 50 percent of tax revenues. Goods and services tax and personal income tax each represented 25 percent. In contrast, during the period 2009-2017, the share of trade tax has declined to 18 percent and goods and services tax has increased to 53.5 percent.

The low tax levels in Burkina Faso are in part due to low levels of per capita income, large agricultural sectors that is not taxed, the important informal economy, the corruption. Taxable capacity tends to be highly concentrated in a small number of people and firms that can often evade taxes by using their power and influence.

Figure 1 : trend in tax revenues ( percent of GDP)



Sources : national authorities and word economic outlook

Figure 2 : composition of tax revenues (percent of tax revenues)



### 3. Empirical literature studies

theoretically, there are different conclusions about the long-run effect of fiscal policies on economic growth. In the neoclassical growth models of Solow (1956) and Swan (1956), the long-run growth rate is exogenous and fiscal policy does not affect the long-run economic growth rate. However, in the endogenous growth theory of Lucas, (1988), Barro (1990), Barro and Sala-i-Martin (1992), Stokey and Rebelo (1995), Mendoza and al. (1997) taxation can have a negative and a positive effect on growth rate. The positive effect is evidenced if taxes are used to finance public investment in infrastructure, education and public health. The negative effect of taxation on growth arises from the distortions to choose and the disincentive effects, discouraging private investment and job creation.

In the empirical studies, the conclusion about the relationship between tax revenues and growth are varying and depending on the countries, methodologies, and fiscal variables used. Williamson (1961), using a sample of 33 countries, found out the positive relationship between tax revenues and per capita income. Hinrichs (1966), in a study of 20 developed countries and 40 developing countries, has concluded that the link between the tax ratio and per capita income was significant. Engen and Skinner (1992), Kormendi and Meguire (1995), Cashin (1995), Kneller et al. (1999), Fölster and Henrekson (2001), Bleaney and al. (2001), Blanchard and Perotti (2002), Holcombe and Lacombe (2004), Karras and Furceri (2009) studies have shown the taxation have a negative impact on economic growth. By contrast, Katz and al. (1983), Koester and Kormendi (1989), Easterly and Rebelo (1993), Slemrod (1995) and Mendoza et al. (1997), concluded that the taxation effect on the economic growth aren't significant.

however, take only the tax burden rate in the econometrics modelling has ambiguous effects on the impact of taxation on economic activity. On that point, some studies looked at the effects of different types of taxes on economic growth. Widmalm (2001), using the panel data of 23 Economic Cooperation and Development (OECD) countries between 1965 to 1990 and Leamer extreme bond analysis, found that the taxes on personal income has negative effect on economic growth, while consumption taxes are the positive effect on economic growth. Using the error correction panel on data from 21 OECD countries over the period 1970 to 2005, Arnold (2011)

concluded that income taxes are significantly less favorable on economic activity, than taxes on consumption and property. Arnold found that 1% increase of consumption returns taxes compared with income tax increases GDP per capita for 0.74% at long-term. Lee and Gordon (2005), applying the panel estimation method to the cross-section data set of 70 countries during 1970-1997, suggested that the corporate tax rate is significantly negatively correlated with economic growth. their study has noted that an increase of 10% of the corporate tax result in decrease with 1% to 2% for the annual growth rate.

For the African countries, most empirical studies have investigated the effects of taxes on economic growth. The results are far from conclusive, varying according to the countries, the methodologies and the tax variables involved. Keho (2011), investigating the relationship between taxation and economic growth in Côte d'Ivoire, used a data from 1961 to 2006 and a two-stage modelling technique to control for unobserved non-tax growth determinants. We find that increases in the tax burden and the share of direct tax to total tax revenue are strongly associated with decreases in economic growth, with an excessive tax burden being much more damaging than the share of direct tax. Ogbonna and Ebimobowei (2011), using the cointegration approach to analysis the impact of tax reforms on the economic growth of Nigeria from 1994 to 2009, have shown that tax reforms improve the revenue generating machinery of government to undertake socially desirable expenditure that will translate to economic growth in real output and per capita basis. Kairanya (2013), using the endogenous growth model to analyze the impact of taxation on Kenya economic growth over the period 1975-2014, concluded that the negative relationship between indirect taxes and economic growth in Kenya in the short run. Wisdom (2014), applying VAR framework to study the effect of tax revenue on economic growth in Ghana for the period 1986 to 2010, found that tax revenue exerted a positive and statistically significant effect on economic growth both in the long-run and short-run implying that tax revenue enhances economic growth in Ghana. Nantob (2014) used a dynamic panel data specification over the period 1989–2012 to study the impact of taxation on economic growth of the eight WAEMU countries, the econometric results suggest the absence of a non-linear relationship between taxation and economic growth of WAEMU. Specifically, weak and high rates respectively at short run and long run do not create distortions and hence affect positively economic growth of WAEMU and generate income. This effect on economic growth then increase over time as the fiscal revenue increase. Gbato (2017), using the DCCE approach of Chudik and Pesaran on a sample of 32 countries in sub Saharan Africa over the period 1980-2010, found that a zero effect of taxation on long run growth. Moreover, the results suggest a significant negative effect of indirect taxes and taxes on individuals in short term. Consequently, the use of taxation as an instrument of intervention is not appropriate in the region. The countries of the region could therefore increase their growth, if the design of fiscal policy rests solely on logic of fiscal neutrality.

## 4. Model, econometric methodology

### 4.1 Model

The empirical analysis will focus on the sort and long-term relationship between different tax revenues and GDP. The neoclassical theoretical growth model of Solow (1956) and Swan (1956) are frequently used to analysis the relationship between economic growth and tax revenues. Also, Engen and Skinner (1996) suggest that a number of recent theoretical studies have used endogenous growth models to stimulate the effects of a fundamental tax reform on economic growth. We assume the general growth model :

$$Y_t = A_t * K_t^\beta * L_t^\alpha \quad (1)$$

Where Y is a real GDP, A is the coefficient measuring the total factor of productivity (TFP), K represents the economy's capital stock and L is the labor force.

The Engen and Skinner (1996) study showed that tax policy can affect the stock of human and physical capital directly by discouraging investment. Tax policy can also influence the relative cost of physical and human capital and research and development expenditures. Mansouri (2005), Fosu and Magnus (2006), have shown there are many variables that can affect the TFP. In this way, we assume that the tax revenues affect the TFP, K and L. The econometric model of the relationship between economic growth and taxation can be specified as :

$$Y_t = \alpha + \beta X_t + \varepsilon_t \quad (2)$$

Where Y is a real GDP and X represent the vector of the variable of taxation.

To estimate the short and long-term relationship between tax and economy growth, we use cointegration technic.

#### 4.2 Econometric methodology and data

Several cointegration econometric methods have been developed to estimate the short and long-term relationship between tax and economy growth. However, in this study, we use the autoregressive distributed lag (ARDL) bounds test developed by Pesaran et al. (2001). There are specific advantages associated with this approach. It circumvents the problem of the order of integration associated with the Johansen likelihood approach (Johansen and Juselius, 1990). ARDL cointegration technique is preferable when dealing with variables that are integrated of different order, I(0), I(1) or combination of the both and, robust when there is a single long run relationship between the underlying variables in a small sample size. Unlike most of the conventional multivariate cointegration procedures, which are valid for large sample size, the bounds test approach is suitable for small sample size study. The ARDL approach assumes that only a single reduced form equation relationship exists between the dependent variable and the exogenous variables (Pesaran, Smith, and Shin, 2001). The ARDL cointegration technique provides unbiased estimates of the long-run model and valid t-statistics even when some of the regressors are endogenous (Harris and Sollis, 2003). Since each of the underlying variables stands as a single equation, endogeneity is less of a problem in the ARDL technique because it is free of residual correlation. The Error Correction Model (ECM) can be derived from ARDL model through a simple linear transformation, which integrates short run adjustments with long run equilibrium without losing long run information.

The econometric methodology involves three steps. The first step examines the stationarity of the variables. The second, tests the presence of long-run relationships between the variables by computing the Bound F-statistic. The following ARDL model will be estimated :

$$\Delta Y_t = \alpha_0 + \sum_{i=1}^p \delta_i \Delta Y_{t-i} + \sum_{i=1}^p \gamma_i \Delta X_{t-i} + \beta_1 Y_{t-1} + \beta_2 X_{t-1} + \varepsilon_t \quad (3)$$

Where  $\delta_i$  and  $\gamma_i$  represent the short-run dynamics of the model.  $\beta_1$  and  $\beta_2$  correspond to the long-run relationship and  $\varepsilon_t$  is the error term.

The null of non-existence of the long-run relationship is defined by :

Ho:  $\beta_1 = \beta_2 = 0$  (null, i.e. the long run relationship does not exist)

H1:  $\beta_1 \neq \beta_2 \neq 0$  (Alternative, i.e. the long run relationship exists).

The hypothesis is tested by the F- statistic. The distribution of this F-statistics is non-standard, irrespective of whether the variables in the system are I(0) or I(1). The critical values of the F-statistics for different number of variables (K), and whether the ARDL model contains an intercept and/or trend are available in Pesaran and Pesaran (1996a), and Pesaran et al. (2001). They give two sets of critical values. One set assuming that all the variables are I(0) (i.e. lower

critical bound which assumes all the variables are I(0), meaning that there is no cointegration among the underlying variables). Another assuming that all the variables in the ARDL model are I(1) (i.e. upper critical bound which assumes all the variables are I(1), meaning that there is cointegration among the underlying variables). When the computed F-statistic is greater than the upper bound critical value, then the H0 is rejected (the variables are cointegrated). If the F-statistic is below the lower bound critical value, then the H0 cannot be rejected (there is no cointegration among the variables).

The study used data from two sources, which collectively cover the period 1990 to 2017. Data on tax revenues (total tax, direct and indirect tax, trade taxes, Goods and services tax) are from the database of National authorities. Data on GDP are from the IMF economic outlook database. All data are considered in real terms using the GDP deflator. In addition, the variables are transformed into the logarithmic form.

Table 1 : summary statistic

	LN (PIB)	LN (Fiscal revenue)	LN (Direct taxes)	LN (Indirect taxes)	LN (Goods and Services taxes)	LN (trade taxes)	LN (capital Expenditure)
<b>Mean</b>	7.8	5.7	4.4	5.4	4.6	4.6	5.5
<b>Median</b>	7.8	5.7	4.3	5.4	4.4	4.6	5.6
<b>Maximum</b>	8.9	7.1	5.8	6.8	6.6	5.2	6.8
<b>Minimum</b>	6.7	4.2	3.0	3.8	2.7	3.4	3.8
<b>Std. Dev.</b>	0.7	0.9	0.9	0.9	1.3	0.5	0.8
<b>Skewness</b>	-0.1	-0.1	0.1	-0.1	0.1	-0.8	-0.5
<b>Kurtosis</b>	1.7	1.9	1.9	1.9	1.6	2.8	2.3

As part of our study, we estimate five (05) econometric model following:

$$(Eq1) \quad \Delta GDP_t = \alpha_0 + \sum_{i=1}^p \delta_i \Delta GDP_{t-i} + \sum_{i=1}^p \gamma_i \Delta Fisc\_rev_{t-i} + \beta_1 GDP_{t-1} + \beta_2 Fisc\_rev_{t-1} + \varepsilon_t$$

$$(Eq2) \quad \Delta GDP_t = \alpha_0 + \sum_{i=1}^p \delta_i \Delta GDP_{t-i} + \sum_{i=1}^p \gamma_{i1} \Delta Direct\_taxes_{t-i} + \sum_{i=1}^p \gamma_{i2} \Delta Indirect\_taxes_{t-i} + \beta_1 GDP_{t-1} + \beta_{21} Direct\_taxes_{t-1} + \beta_{22} Indirect\_taxes_{t-1} + \varepsilon_t$$

$$(Eq3) \quad \Delta GDP_t = \alpha_0 + \sum_{i=1}^p \delta_i \Delta GDP_{t-i} + \sum_{i=1}^p \gamma_{i1} \Delta GS\_taxes_{t-i} + \sum_{i=1}^p \gamma_{i2} \Delta Trade\_taxes_{t-i} + \beta_1 GDP_{t-1} + \beta_{21} GS\_taxes_{t-1} + \beta_{22} Trade\_taxes_{t-1} + \varepsilon_t$$

$$(Eq4) \quad \Delta Cap\_Exp_t = \alpha_0 + \sum_{i=1}^p \delta_i \Delta Cap\_Exp_{t-i} + \sum_{i=1}^p \gamma_i \Delta Fisc\_re_{t-i} + \beta_1 Cap\_Exp_{t-1} + \beta_2 Fisc\_re_{t-1} + \varepsilon_t$$

$$(Eq5) \quad \Delta Cap\_Exp_t = \alpha_0 + \sum_{i=1}^p \delta_i \Delta Cap\_Exp_{t-i} + \sum_{i=1}^p \gamma_{i1} \Delta Direct\_taxes_{t-i} + \sum_{i=1}^p \gamma_{i2} \Delta Indirect\_taxes_{t-i} + \beta_1 Cap\_Exp_{t-1} + \beta_{21} Direct\_taxes_{t-1} + \beta_{22} Indirect\_taxes_{t-1} + \varepsilon_t$$

Where GDP represent the real GDP, Direct\_taxes correspond to the total of the direct tax revenue and Indirect\_taxes is total of indirect tax revenue. In Burkina Faso, the direct tax revenue comprises essentially by real property tax, personal property tax, income tax, or taxes on assets. The indirect tax revenue refers to goods and services tax and trade tax. Cap\_Exp represent the capital expenditure.

## 5. Econometric results and discussion

### 5.1 Unit root and ARDL cointegration test

The bound test requires that the variables were not a higher order than I(1). If the variables are I(2), the computed F-statistics of the bounds test are rendered invalid because they are based on the assumption that the variables are I(0) or I(1) or mutually cointegrated (Chigusiwa et al., 2011). Therefore, in order to avoid biased results, the Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) tests were applied to all variables in levels and in first difference. The results in the table 1 suggest that all the variables are stationary in the first difference.

Therefore, in order to avoid biased results, the Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) tests were applied to all variables in levels and in first difference. The results in the table 2 suggest that all the variables are stationary in the first difference

**Table 2** : results of unit root tests

	Level		First difference	
	ADF	PP	ADF	PP
	P_Value		P_Value	
Growth (LN_GDP)	0,90	0,90	0,00	0,00
Direct taxes (LN_Direct_taxes)	0,88	0,95	0,00	0,00
Indirect taxes (LN_Indirect_taxes)	0,90	0,95	0,00	0,00
Fiscal revenues (LN_Fisc_rev)	0,93	0,94	0,00	0,00
Trades tax (LN_trade_taxes)	0,45	0,45	0,00	0,01
Goods and services taxes (LN_GS_taxes)	0,94	0,97	0,00	0,00
Capital Expenditure (LN_Capital_exp)	0,41	0,06	0,00	0,00

The results of the unit root test suggest the possibility of long-run relationship between the variables. we apply the bounds test to examine the long-run relationship between the variables. The results are reported in Table 3. The appropriate lag length for each of the underlying variables in the ARDL model are selected following the smallest Akaike Information Criterion (AIC) and Schwarz Bayesian Criterion (SBC). For each five (5) models, the computed F-test statistics is greater than the upper bound critical value. It suggests that the null hypothesis of no cointegration is rejected at the 5% level. The variables are cointegrated.



**Table 3 : results of ARDL cointegration test**

	Computed F-Stat	Critical values at 5% level		results
		Lower Bounds I(0)	Lower Bounds I(1)	
<b>Cointegration test between growth and fiscal policy</b>				
<b>(Eq1)</b> $\Delta GDP_t = \alpha_0 + \sum_{i=1}^p \delta_i \Delta GDP_{t-i} + \sum_{i=1}^p \gamma_i \Delta Fisc_{rev_{t-i}} + \beta_1 GDP_{t-1} + \beta_2 Fisc_{rev_{t-1}} + \varepsilon_t$				
$F_{Stat}$	26,27 (*)	3,62	4,16	Cointegration
<b>(Eq2)</b> $\Delta GDP_t = \alpha_0 + \sum_{i=1}^p \delta_i \Delta GDP_{t-i} + \sum_{i=1}^p \gamma_{i1} \Delta Direct_{taxes_{t-i}} + \sum_{i=1}^p \gamma_{i2} \Delta Indirect_{taxes_{t-i}} + \beta_1 GDP_{t-1} + \beta_{21} Direct_{taxes_{t-1}} + \beta_{22} Indirect_{taxes_{t-1}} + \varepsilon_t$				
$F_{Stat}$	24,30 (*)	3,10	3,87	Cointegration
<b>(Eq3)</b> $\Delta GDP_t = \alpha_0 + \sum_{i=1}^p \delta_i \Delta GDP_{t-i} + \sum_{i=1}^p \gamma_{i1} \Delta GS_{taxes_{t-i}} + \sum_{i=1}^p \gamma_{i2} \Delta Trade_{taxes_{t-i}} + \beta_1 GDP_{t-1} + \beta_{21} GS_{taxes_{t-1}} + \beta_{22} Trade_{taxes_{t-1}} + \varepsilon_t$				
$F_{Stat}$	16,03 (*)	3,10	3,87	Cointegration
<b>Cointegration test between Investment and fiscal policy</b>				
<b>(Eq4)</b> $\Delta Cap_{Exp}_t = \alpha_0 + \sum_{i=1}^p \delta_i \Delta Cap_{Exp}_{t-i} + \sum_{i=1}^p \gamma_i \Delta Fisc_{re_{t-i}} + \beta_1 Cap_{Exp}_{t-1} + \beta_2 Fisc_{re_{t-1}} + \varepsilon_t$				
$F_{Stat}$	8,16 (*)	3,62	4,16	Cointegration
<b>(Eq5)</b> $\Delta Cap_{Exp}_t = \alpha_0 + \sum_{i=1}^p \delta_i \Delta Cap_{Exp}_{t-i} + \sum_{i=1}^p \gamma_{i1} \Delta Direct_{taxes_{t-i}} + \sum_{i=1}^p \gamma_{i2} \Delta Indirect_{taxes_{t-i}} + \beta_1 Cap_{Exp}_{t-1} + \beta_{21} Direct_{taxes_{t-1}} + \beta_{22} Indirect_{taxes_{t-1}} + \varepsilon_t$				
$F_{Stat}$	6,04 (*)	3,10	3,87	Cointegration

We estimate the long-run relationship, using ARDL approach, between, on one hand, the growth and tax policy, and on the other hand, Investment and tax policy. In addition, we estimate the fully modified ordinary least squares (FMOLS; Phillips and Hansen 1990) and dynamic ordinary least squares (DOLS; Stock and Watson 1993) to verify the robustness of the empirical results obtained with ARDL approach. FMOLS and DOLS methods correct for endogeneity and serial correlation in cointegrating regressions, thereby providing unbiased estimates of the cointegrating coefficients. The Error Correction Model (ECM) can be derived from ARDL model through a simple linear transformation, which integrates short run adjustments with long run equilibrium without losing long run information.

The results, reported in table 4, indicate that Fiscal revenues contributes positively to economic growth in the long run. other things being equal, a 1% increase in fiscal revenues leads to about 0.77% increase in real GDP. It means that tax revenue would lead to economic growth when it is used to undertake infrastructural developments and spending in other sectors by the government to increase productivity. The impact of indirect tax revenue is more important than the direct tax revenue on the economic growth. A 1% rise in indirect taxes revenue increases real GDP by 0.65%, while real GDP rise by 0.11% when direct tax revenue increases by 1%. But, direct tax coefficient is not significant at 5% level. In this fact, it's very important to focus the government attention on mobilizing of resources from the indirect tax. Indeed, the results of the estimates show that a real GDP increase by 0.46% when the goods and services tax revenue, such as the VAT revenue, rise by 1%. This fiscal revenue is very important to finance the public investment in infrastructural developments in other strategic. Indeed, a 1% increase in the fiscal revenues tends to increase the investment (government capital expenditure) by 0.82%.

Table 4 : results of the long-run estimates

	Regressor	Dependent variable : GDP					
		ARDL		FMOLS		DOLS	
		Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
Equation 1	Fiscal Revenues	0.77	28.86	0.78	39.91	0.79	44.45
Equation 2	Direct taxes	0.11*	0.48	0.32	2.53	0.23*	1.14
	Indirect taxes	0.65	2.42	0.46	3.62	0.55	2.7
Equation 3	Goods and Services taxes	0.46	15.80	0.48	29.04	0.48	32.87
	Trade taxes	0.23	3.0	0.17	4.04	0.18	4.13
Dependent variable : Investment							
	Regressor	ARDL		FMOLS		DOLS	
		Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
		ARDL		FMOLS		DOLS	
Equation 4	Fiscal Revenues	0.82	15.95	0.83	16.37	0.81	14.04
Equation 5	Direct taxes	0.11*	0.48	0.32	2.53	0.23*	1.14
	Indirect taxes	0.66	2.82	0.458411	3.624646	0.554319	2.707027

(\*) coefficient not significant at 5% level

The short-run dynamics results for all equation, reported in table 5, show that the coefficient of error correction term is negative and significant, supporting the evidence of a stable long-run relationship among the variables. In the short term, the effect of fiscal revenue on the growth is positive. The indirect tax effect is positive and significant, but the indirect tax effect is positive and not significant at 5% level. For the investment (government capital expenditure), the impact of fiscal revenue on the growth is positive in the short term. The indirect tax effect is positive and significant, but the indirect tax effect is positive and not significant at 5% level. Thus, the short and long-run results show that the government needs to focus on its priorities on the on increasing resources from indirect taxes.

Table 4 : results of the short-run estimates

	Regressor	Dependent variable : GDP			
		ARDL		Error Correction term	
		Coeff.	t-stat	Coeff.	t-stat
Equation 1	Fiscal Revenues	0.27	1.72*	-0.82	-4.48
Equation 2	Direct taxes	0.03*	0.44	-0.28	-2.83
	Indirect taxes	0.18	2.94		
Equation 3	Goods and Services taxes	0.11	2.32	-0.42	-3.05
	Trade taxes	0.1	2.69		
Dependent variable : Investment					
	Regressor	ARDL		Error Correction term	
		Coeff.	t-stat	Coeff.	t-stat
		ARDL		Error Correction term	
Equation 4	Fiscal Revenues	0.55	4.61	-0.67	-5.08
Equation 5	Direct taxes	0.03*	0.44	-0.28	-2.83
	Indirect taxes	0.183	2.94		

(\*) coefficient not significant at 5% level

## 6. Conclusion and policy recommendation

From theoretically and empirically point of view, fiscal policy and economic growth have complex relationship. The complexity derives from the very nature of taxes themselves. A certain rate of taxes may be necessary to finance growth-enhancing projects. But, a tax rate beyond the optimal level can have distortionary effects on both the demand and the supply-side of the economy.

The question to increase the domestic resources in Burkina Faso is hotly debated in academic and policy circles. Each year, tax measures are adopted to increase the level of tax revenue, in response of a rise of public expenditure. This study provides an empirical contribution to the analysis of the macroeconomic effects of fiscal tax revenue in Burkina Faso.

The paper examines the dynamic causal link between fiscal taxes revenue and economic growth and capital investment for Burkina Faso for the period of 2007-2017. It implements ARDL model to cointegration to investigate the existence of a long run relation among the fiscal tax revenue and economic growth and capital investment. The results confirm the existence of a long-run and short-run positive relationship between fiscal tax revenue and economic growth. The short and long-run estimation results show that the government needs to focus on its priorities on the on increasing resources from indirect taxes. Also, the results show that this fiscal revenue is very important to finance the public investment.

The results of this study suggest that the Government will need to undertake immediate efforts to widen the fiscal base. What's the best strategies for fiscal resources mobilization in Burkina Faso ? :

- ✓ Remove/reduce tax exemptions: In Burkina Faso the tax exemptions caused a loss about 1,2% of PIB for the national economy over the period 2015-2017. Removing or curbing exemptions would enhance the tax base and increase tax revenues.
- ✓ Taxation of the informal sector : The simplest way to tax the informal sector is indirectly, by taxing the goods and services that it buys and sells, most obviously through VAT and import and export duties. But it is crucial to ensure that taxes and other levies are designed and applied in a way that does not perpetuate economic and gender inequalities.
- ✓ Increasing excise taxes for specific goods, such as alcohol and tobacco: Aligning tax rates with regional standards, such as by increasing duties on tobacco in line with WAEMU ceilings. This could be an effective measure because such taxes can raise revenue rather quickly without fundamental changes to the tax system. Higher tax rates on alcoholic drinks and tobacco would also help to finance the health problems related by alcohol drinks and tobacco consumption.
- ✓ Enhancing management, governance, and human resources: Human resources reforms will help to support tax collection, including by hiring more qualified staff and investing in strengthening the technical skills of staff of revenue agencies. Decentralization of the fiscal administration should be encouraged, and local, regional and provincial fiscal administrations will help to collect the tax.
- ✓ Fight tax fraud by introducing more modern business procedures in the fiscal administration based on technologies: Successful revenue mobilization hinges on managing information and leveraging the power of data to improve compliance and fight tax fraud.

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