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The Causal Relationship between Value-Added Tax and Social Conflicts: Evidence from Mozambique

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Abstract- This research examines the causal relationship between social conflicts and Value-Added Tax (VAT) in Mozambique. The study tests two hypotheses; the "*tax-burden*" hypothesis which is used to evaluate the long-run relationship, and the "*tax-conflicts*" hypothesis which estimates the short-run relationship between VAT and social conflicts. Vector Error Correction Model (VECM) is used to examine this relationship. The data used comprise the period from 1994 to 2018. The outcomes of the study suggest that the prices of goods and services included in the new VAT system had a causal relationship with social conflicts in the short-run in Mozambique; these results support the "*tax-conflicts*" hypothesis. Under this hypothesis, the unsustainable tax imbalances can be mitigated by exempting or reducing the VAT of some indispensable consumption goods and services. The VECM results of long-run causal relationships suggest a bidirectional causality between VAT and social conflicts, supporting the *"tax-burden"* hypothesis. Under this hypothesis our finding suggests that in the long-run Mozambique's central government should design a new VAT system; expand and diversify the sources of revenue.

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I. Introduction

Value-Added Tax (VAT) is considered one of the most important tools when it comes to the fiscal policy development of the last quarter of the twentieth century in many countries. It was first adopted in Europe, and subsequently, it quickly spread around the world. Many developing countries adopted VAT for many reasons, among them: budget deficit, the adhesion to the International Monetary Fund (IMF)[1], and for its simplicity. But one of the most argued reasons is related to budget deficits— phenomena observed when the government expenditure surpasses its revenue. This triggered many developing countries to start using VAT as a solution to their financial problems. Within a short time, VAT became a fashionable and important fiscal policy instrument. In fact, in these developing countries, VAT has been one of the most significant tax reforms (Bird and Zolt, 2005). Another reason that has led these countries to implement VAT is related to its characteristics. Palma (2015) affirms that the success of VAT is particularly associated with its generality and neutrality, which is obtained through its invoice and subtractive methods. These characteristics make VAT a simple tax to implement and collect.

Given that VAT can be implemented and collected without an organized tax structure, it gained much success in developing countries. For instance, in Mozambique, the new VAT system was introduced in 1999, influenced by the IMF policies toward developing countries, and as a measure to improve financial stability through the increase in internal revenue collection. However, as observed in past cases, the importation of policies without looking at the local reality, in most cases, tends to generate more problems than solutions. In this case, the new VAT system in Mozambique charged at 17 percent does not fit the Mozambican economic environment; indeed, it is a reproduction of the Portuguese VAT system with a minor change[2] and was designed for a political and socio-economic environment that is quite different from Mozambique; thus, new VAT system in Mozambique tends to be regressive rather than a progressive tax. A tax is "regressive" when low-income people pay a higher fraction of their income in taxes than wealthier (Faridy and Sarker, 2011). This influence has had a negative impact in many cases, focusing on indirect regressive taxation like VAT, and extensive tax incentives for companies" (Itriago, 2011).

For most of the Mozambican population, the new VAT system is a burden because they belong to low-income[3] group and they spend a large fraction of their income on the consumption of goods and services. As a result, the Mozambican new VAT system is a regressive tax. As stated above, for a regressive tax like VAT, the burden is highest for low-income households and falls sharply as household income rises (Tax Policy Center, 2020). When VAT is increased, two things happen. First, the prices of goods and services paid by the consumer increase (Toder et al., 2012), which tends to reduce household incomes. Second, the volume of business reduces (Toder et al., 2012), leading to a decrease in jobs. In the case of Mozambique, which is a

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[1] Oxfam states that, "The IMF and national elites have heavily influenced tax policy in developing countries (Intriago, 2011)

[2] VAT standard in Portugal is 23 percent standard to all good and service, with 13 and 6 percent reduced on certain essential goods and service, and Portugal had GDP per capita of U$23,462 in 2019, compared with Mozambique with 17 percent and no reduction and had GDP per capita of U$487 in 2019.

[3] 45 percent live below the poverty line, and approximately 80 percent of employment in Mozambique is in the informal sector (World Bank, 2019).

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small economy based on imports, the implementation of the new VAT system led to an increase in prices of goods and services and consequently to an increase in the cost of living, resulting in riots, demonstrations, protests, and strikes. In this research, these events are collectively referred to as social conflicts.

This study, inspired by the fact that after the implementation of the new VAT system there has been a constant rise in the number of social conflicts, and also any fluctuation in the prices of goods and services in the international markets directly affects the prices paid by the consumers in Mozambique, attempts to establish a causal relationship between VAT and social conflicts. To this end, I analyze the degree of social conflicts as measured by the number of participants in riots, demonstrations, protests, and strikes. I also evaluate the importance of VAT as a share of total revenue, and finally, I look at government expenditure as a total amount spent on capital investments. With the above in mind, I examine the causal relationships between VAT and social conflicts in the short- and long-run in Mozambique.

a) The Problem of the New VAT System in Mozambique

According to OECD et al., (2020), taxes on goods and services charged in African countries were the main source of tax revenue; in 2017, it was on average around 53.7 percent of total tax revenue, VAT contributed an average of 29.4 percent, making it the most significant tax on goods and services; also 18.6 percent of tax revenue came from corporate taxes and 15.4 percent recorded from individual taxes at the bottom were social insurance taxes with 8.1 percent and property taxes with 1.6 percent. The same case is in Mozambique, where VAT contributed an average of 70 percent of the tax on goods and services, which accounted for 36.8 percent of total revenue from 2000 to 2017.

The increase in the tax revenue seen in Mozambique at the beginning of the 21st century is due to the implementation of the new VAT system in 1999, which substituted the circulation tax of 5 percent for production and 10 percent retail. The new VAT system increased the economic obligations of the poor, who make up the majority of the population. Although the implementation of the new VAT system has brought many benefits and accelerated economic growth in Mozambique, it increased the level of economic inequalities and increased the price hike mainly in imported products[4].

[4] According to data obtained from United Nations Conference on Trade and Development When it comes to trade, for example, in 2014, Mozambique had a trade deficit of more than US$4 billion. In 2013, Mozambique imported more than twice of its exports in value. From 2007 to 2013, Mozambique's exports doubled from US$2.4 billion to US$4 billion, while imports grew faster, increasing from US$3 billion to US$10 billion.

In African countries, which rely on VAT as the main revenue source, VAT increases without policy adjustments tend to be accompanied by growing concern about its impact on low-income households. As the tax increases, general commodity prices also increase. This increase means that the low-income households, in particular, will tend to spend a significant portion of the income on consumption of goods and services, just as the business will have to increase the total price of goods and services to adjust to the VAT increase. This increase in costs can also be seen in all products affected by the VAT increase. Toder et al., (2012) state that "the increase in VAT can affect the total cost of goods and services consumed by citizens or it can decrease the volume of revenue from the companies; the author also found evidence that suggests that VAT can be passed to consumers through higher prices, where increases in VAT can increase the price of goods and services or reduce the family's real income" (Toder et al., 2012).

In Mozambique, a new VAT system is problematic because 45 percent of the population live below the poverty line, and approximately "80 percent of employment in Mozambique is in the informal sector" (World Bank, 2019); therefore, the new VAT system in Mozambique is unsustainable and does not reflect the reality of the country whose majority are low-income households. In this research, I point out that due to the lack of adequacy of the policy to the local reality, a new VAT system is a burden for low-income families that make up the majority of the population's "*tax burden hypothesis*". The Tax Policy Center (2020) affirms that "VAT is more proportional to income when measured as a share of income over a lifetime; because the income saved today is generally spent in the future, the survey also found that for a lifetime measure of income, the burden of VAT as a part of income is less for high-income families than for others because VAT does not tax returns on new capital investments" (Tax Policy Center, 2020).

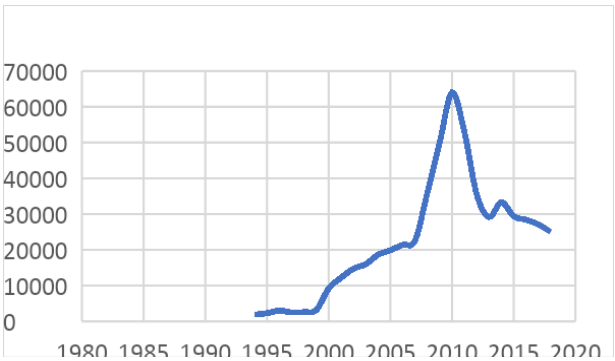


Figure 1: Social Conflicts Participation

As stated before, the Mozambican new VAT system evolved from a multiple-rate system formerly known as a circulation tax that was 5 percent for

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production and 10 percent retailers to a single rate of 17 percent, with a zero rate on exports., following the IMF's policy recommendation under its stabilization program to boost the State's income revenue and financial stability through the increase of internal revenue collection and bring transparency to its indirect tax system. However, the consequences are putting the country's economic growth and political stability at risk; since the adoption of the new VAT system, the level of social conflicts (Figure 1) in Mozambique due to the constant rise in prices of goods and services has been increasing. The critical point is that the new VAT rate is very high compared to the population's per capita income[5], which spends the largest share of income on consumption. The new VAT system in Mozambique is responsible for increasing the total cost of goods and services paid by households, the majority of whom are low-income. The persistent increase of prices of goods and services affected by the new VAT system in the short-run, in my viewpoint, is the main cause of the social conflicts in the last two decades, "*tax conflicts"* hypothesis and coincides with the tax reforms implemented. Therefore, it is reasonable to examine the causal relationship between VAT and social conflicts in Mozambique.

II. Literature Review

VAT has several benefits in developing countries. However, there is a long debate over the implementation of VAT in under-developed nations. Keen and Lockwood (2007) point out that VAT has worked as a "cash machine" because it helped many countries to make additional revenue that they could not get before the implementation of VAT Emran and Stiglitz write that VAT becomes complicated when implemented in a country with a huge informal economy; (Emran and Stiglitz 2005). Keen (2008) found out that VAT indirectly taxes the informal sector because certain products sold on the informal market are taxed VAT when imported. Boadway and Sato (2009) proposed that VAT advantages depend on several factors, such as the country's ability to tax individuals and companies; they also found that regressivity of VAT becomes a prominent feature particularly in low-income societies.

Bird and Zolt (2005) were more cynical about the impact of VAT on developing countries. They found that the VAT that most often replaced the border tax was much regressive than previous taxes. Boadway and Sato (2009) claimed that the tax reform policies that reduced tariffs and transferred the burden to VAT were undesirable from the point of view of impartiality.

Several studies investigating the consequences of the zero VAT rate found that the zero VAT rate was a better instrument than the tax exemption (Bovenberg, 1987; Gottfried, 1991). Analyzing the adverse effects of VAT in Vietnam, Giesecke and Nhi (2010) found that a uniform tax without exemptions increased the total consumption with adverse distributional consequences for low-income families; they also found that the adverse distributive effects of VAT could be expressly changed, at a small cost for the gain of collective.

Emini (2000) analyzed the introduction of a pure VAT system in Cameroon. He found that a pure VAT system tended to be more favorable than cascading taxes for economic activities that supported a substantial tax burden. Emini concluded that increasing tax revenue through expanding the tax base was better than increasing the VAT rate. Bahl and Bird (2008), concerning the impact of VAT on revenues, affirmed that until now, VAT is seen as an essential tool for a good tax system for increasing tax revenue in many countries, and one of the primary sources of revenue in many countries. However, Ebrill et al. (2002) found that "the rapid increase in VAT seen in many countries in the 20th century was the most dramatic - and perhaps the most important tax development phenomena in the last century. For the authors, the adoption of VAT by many countries was intended to increase state revenues, trade, and control persistent budget deficits. Many African countries affiliated to IMF who had budget problems saw VAT as the optimal and straightforward solution to boost their tax revenue collection; this was the case with Kenya, South Africa, Nigeria, Botswana, and Mozambique.

A study conducted by Alemayehu and Abebe, about fiscal reforms in Ethiopia, found that the VAT revenue collection in Ethiopia had shown a significant increase of 50 percent than the substitute sales tax since its introduction. They argued that VAT collection domestically contributed 14.9 percent of their total revenue, while VAT charged on imports contributed 27.1 percent. The authors attributed the significant influence of import VAT to the total VAT collection in Ethiopia to its well-controlled adoption. Finally, very few researchers have analyzed the lack of VAT neutrality and have comprehensively analyzed the social impact of VAT to determine the best VAT model that fits low-income households in developing countries.

III. Methodology

To examine the causal relationship between social conflicts and value-added tax in Mozambique, we use the Vector Error Correction Model (VECM). To estimate our model, we divided the methodology into three steps: the first is to inspect the existence of stationarity in the variables using the Augmented Dickey-Fuller (ADF) Unit Root test proposed by Dickey and Fuller (Dickey and Fuller, 1979); Then the Johansen cointegration test was performed (Johansen, 1988,

[5] According to world bank development indicators, In 2019 the GDP per capita of Mozambique was $487.

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1990) to see the order of cointegration. And in the last, we performed the granger causality test (Granger et al., 1974), which is based on Vector Error Correction Models. This test is used to determine the causality direction between the variables.

a) Data

In this research, I employ time series quarterly data covering the period from the first quarter of 1994 to the fourth quarter of 2018. Variables that are used are the degree of social conflicts, which is measured by the number of participants in riots, demonstrations, protests, and strikes, VAT variable which is measured as the share of VAT on total revenue, and the Government Expenditure as a total amount spent on capital expenditure. The degree of social conflicts was obtained from the social conflicts Africa Database (SCAD) and center for democracy studies (CDS); VAT data was obtained from the Mozambique Tax Authority, and government expenditure data was obtained from Mozambique Administrative Tribunal. To proceed with the estimation, I converted all of the variables into a log form. "A model with a log dependent variable often more closely satisfies the assumptions when logs are applied, the distributions are better behaved, and taking logs reduces the extrema in the data and curtails the effects of outliers" (Woolridge, 2012).

b) Vector Error Correction Models

When using time series data, it is important to perform a stationarity test to ensure that it is stationary. If the data is or not stationary, we may have spurious regression, which can mislead our results. If series are not stationary, it means that data generated does not evolve around 0, meaning that they exhibit a trend. (Dickey and Fuller, 1979). Thus, in this research, I used ADF to test the stationarity of the variables. ADF was used because in this research there is no missing gap and also there is no significant structural break. Once found that the variables are not stationary, then we can proceed with the cointegration test. In this research, I do this by using the Johansen cointegration test (Johansen and Juselius 1988; Johansen 1990). This test gives us two results: Maximum eigenvalue and trace statistic.

When two or more variables are cointegrated, it implies that there is a long-run relationship, meaning that there must exist some granger causality among variables (Maddala and Kim, 1998). Hence, we can proceed using the Granger-causality test to examine the nature of the relationship between variables; if they are cointegrated within the first difference, the VAR model cannot be used because it can mislead the results. (Engle and Granger, 1987), Thus, in the cointegrated variables, there is a need to include an error-correction to examine the equilibrium relationship and capture the short-run and long-run dynamics. Below is our specified VECM model, composed of three variables.

$$\Delta lnSC_t = \sigma + \sum_{i=1}^{k\ 1} \beta_1 \Delta lnSC_{t-i} + \sum_{i=1}^{k\ 1} \vartheta_j\, lnVAT_{t-j} + \sum_{i=1}^{k\ 1} \varphi_m \Delta lnGovExp_{t-m} + \lambda_1 ECT_{t-1} + \varepsilon_{1t} \quad (1)$$

$$\Delta lnVAT_t = \alpha + \sum_{i=1}^{k-1} \beta_1 \Delta lnSC_{t-i} + \sum_{i=1}^{k-1} \boldsymbol{\vartheta_j lnVAT_{t-j}} + \sum_{i=1}^{k-1} \varphi_m \Delta lnGovExp_{t-m} + \lambda_2 ECT_{t-1} + \varepsilon_{2t} \quad (2)$$

$$\Delta lnGovExp_t = + \sum_{i=1}^{k-1} \beta_1 \Delta lnSC_{t-i} + \sum_{i=1}^{k-1} \vartheta_j\, lnVAT_{t-j} + \sum_{i=1}^{k-1} \boldsymbol{\varphi_m \Delta lnGovExp_{t-m}} + \lambda_3 ECT_{t-1} + \varepsilon_{3t} \quad (3)$$

Where, β_1, ϑ_j, and φ_m, are the short-run dynamic coefficient of the model's adjustment long-run equilibrium; K-1 is the lag length reduced by 1; λ_i denotes speed of adjustment coefficient with a negative sign; ECT_{t-1} is the error correction term, which is the lagged value of the residuals obtained from cointegrating regression of the dependent variables on the regressor; this error correction term contains information derived from the long-run cointegrating relationship and ε_{it} denotes our residuals.

IV. Findings and Discussions

To better understand the relationship between social conflicts and VAT, I summarized the variable data using descriptive statistics in Table 1. Then I present a unit root test proposed by ADF, followed by the Johansen cointegration test using trace and max statistics. And finally, I present the main results using the VECM model, where first I present the long-run and then the short-run relationship.

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Table 1: Descriptive Statistics

Variables	Mean	SD	CV	Min	Max
social conflicts	8.200	1.101	0.134	5.704	9.798
value-added tax	3.744	0.403	0.108	2.933	4.331
government expenditure	19.710	0.785	0.039	18.360	20.973

a) Unit Root Test Results

The ADF test performed shows us that the variables are not stationary and levels; therefore, to make them stationary; I had to take the first differencing; after taking the first difference, the data became stationary. Below table 2 shows the result of the ADF stationary test.

Table 2: ADF Test for Unit Root

Variable	Specification	Z(t)	5% critical value
ln(SC)	Intercept	1.900	-1.950
	Intercept & trend	-0.819	-3.152
Δ *ln(SC)*	Intercept	-6.175	-1.950**
	Intercept & trend	-6.708	-3.452**
ln(VAT)	Intercept	0.548	-1.950**
	Intercept & trend	-0.998	-3.452
Δ *ln(VAT)*	Intercept	-6.976	-1.950**
	Intercept & trend	-7.246	-3.452**
ln(GovExp)	Intercept	3.490	-1.950
	Intercept & trend	-1.863	-3.452
Δ *ln(GovExpS)*	Intercept	-7.876	-1.950**
	Intercept & trend	-8.429	-3.452**

*Note: ** denotes significance at 5 percent.*

The above table shows that the absolute value of t statistics in the log of social conflicts (ln (SC)) with a value 1.900 in intercept and -0.819 intercept & trend are lower than 5 percent critical values of -1.950 and -3.152 respectively; this tells us that we can not reject the null hypothesis, meaning that the variable ln (SC) is not stationary. The same can be said regarding the log of value-added tax (ln (VAT)) with t statistic of 0.548 in intercept and -0.998 in intercept & trend and a 5 percent critical -1.950 in intercept and -3.452 intercept & trend; also, in the log of government expenditure (ln (GovExp)) with t statistic of 3.490 in intercept and -1.863 in intercept and trend and 5 percent critical value of -1.950 in intercept and -3.452 intercept & trend. This result tells us that we cannot reject the null hypothesis in this series, meaning that all the series are not stationary at level. Therefore, we proceed to report the results at the first level.

The results from the first difference in the social conflicts (Δ ln (SC)) variable shows us that the absolute value of -6.175 intercept and -6.708 in intercept& trend in t statistics are higher than 5 percent critical values of -1.950 intercept and -3.452 in intercept & trend respectively; we can reject the null hypothesis, and accept the alternative hypothesis meaning that the variable (Δ ln (SC)) stationary. Also, both of value-added tax (Δln (VAT) and log of government expenditure (ln (ΔGovExp)) in their first difference, the t statistics are higher than critical values. Therefore, in this series, the results show that we can reject the null hypothesis when taking the first difference. The ADF test for Unit Root suggests that our series are not stationary at level, but they are at first difference. We conclude that our series is integrated with order one I (1). So, in this situation, it is necessary to perform a cointegration test to establish whether there exists a long-run relationship among our variables.

b) Cointegration Results

In econometrics, when the series is integrated with an order I (1), two prominent cointegration tests can be performed: the Engle-Granger cointegration test and the Johansen cointegration test. In this research, we use the Johansen cointegration test, and it is performed on the level form of our variables.

Before moving forward, we have to perform a lag selection test; as we know in economics, the dependence of an independent variable on a dependent variable is rarely instantaneous; Very often, the independent variable responds to the dependent variable with an interval of time, and this interval of time is called lag, there is no rule for how much lags should

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be chosen, but too many lags can cause a problem of serial correlation and misspecification errors, and lose a degree of freedom. To avoid these problems, in this research, I use the Akaike information criterion which best suits our model.

Table 3: Johannsen Cointegration Results (trace statistic)

Maximum Rank	Trace statistic	5% critical value
0	45.52	29.68
1	13.99	15.41
2	2.82	3.76

*Notes: Rank 0,1,2 are respective null hypotheses, where rank 0 means that there is no cointegration equation, * denotes rejection at 5 percent level.*

Looking at table 3, the rank 0 with trace statistics of 45.52 is higher than the critical value of 29.68; In this regard, we reject the null hypothesis. In the maximum rank one, which means that there is one cointegration in our equation in this model, here the trace of 13.99 is lower than the 5 percent critical value; Therefore, we cannot reject the null hypothesis of no cointegration; The same can be said at maximum rank two where our trace statistic of 2.82 is lower than 5 percent critical value of 3.76, meaning that our equation is cointegrated rank 1 and 2.

Table 4: Johansen Cointegration Results (Max Statistic)

Maximum Rank	Max Statistic	5% critical Value
0	38.23	20.97
1	5.27	14.07
2	2.01	3.76

Notes: Rank 0,1,2 are respective null hypotheses, where the rank 0 means that there is no cointegration equation

Table 4 presents max statistic results; The null hypothesis that we have a cointegration equation on maximum rank 0 is rejected because the max statistics of 38.23 is higher than the 5 percent critical value of 20.97. But looking at the two maximum ranks, we cannot reject the null hypotheses of no cointegration because the max statistic of 5.27 is lower than the critical value of 14.07; The same conclusion can be drawn at maximum rank two, where the max statistic is 2.01 and lower than 5 percent critical value of 3.76. Given the result of trace statistics and max statistics, we conclude that we reject the null hypothesis of no cointegration in our model. The above results imply that our series are related and can be combined linearly. Both maximum rank 1 and 2 agree with the hypothesis that we have more than one cointegration equation in this model. Therefore, we can proceed with estimating our three variable VECM even though the cointegration test shows two cointegrating equations (Harris 1995).

c) *Results of Vector Error Correction Model for Long-run Relationship*

Once found that our results are cointegrated, this implies that there is a long-run relationship between social conflicts, value-added tax, and government expenditure in Mozambique. Hence, we can proceed with the estimation using both long-run and short-run models. To estimate the long-run model, we will be using the VECM. VECM can be understood as a system with a vector of two or more variables, where all the variables are endogenous, and we do not have an exogenous variable. And we use VECM to examine the long, and short-run dynamics of Social conflicts, value-added tax, and government expenditure; the VECM model restricts the long-run behavior of endogenous variables to converge to their cointegrating relationship; This cointegrating term is called the error correction term.

The long-run relationships can be derived using Johansen normalization restriction, where the error term ECT_{t-1} is generated. The below ECT equation result shows that in the long-run, VAT denoted by logVat, with a value of -1.615, and government expenditure denoted by logpubexp with a value of -0.479 in our results, have a positive impact on social conflicts, represented by logScad; and both coefficients are statistically significant and 1 percent level, which means that in the long-run, both value-added tax and government expenditure have symmetric effects on social conflicts.

$$ECT_{t-1} = [1.000logScad - 1.615logVat - 0.479logGovExp + 7.162]$$

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The generalized form of the specified model, which has social conflicts as the target variable (Equation 1), can be specified as below:

$$\Delta lnSC_t = 0.006 - 0.622\Delta lnSC_{t-1} + 0.858\Delta VAT_{t-1} + 0.19\Delta GovExp_{t-1} - 0.179ECT_{t-1}$$

In the above equation results, the ECT (-0.179), indicates that the adjustment term is negative and statistically significant at 1 percent level; this suggests that there is long-run causality running from value-added tax and government expenditure to social conflicts. For the short-run coefficient looking at VAT with a value of 0.858 and significant at 1 percent level, we can say that the new VAT system causes social conflicts, but government expenditure doesn't cause social conflicts in the short-run because our coefficient is not significant. Looking at the VAT equation (Table 5) the ECT with a value -0.0762 is negative and significant at 5 percent; This denotes a convergence to long-run equilibrium, showing us that there is causality in the long-run. Observing the short-run causality effects, we can infer causality from social conflicts to VAT at a 1 percent level, while for government expenditure, we cannot infer causality in the short run. And last looking and the public expenditure equation with positive and not significant ECT, we cannot infer long-run causality, meaning that in this equation, there is no convergence to long-run equilibrium. Both equation 1 and 2 with higher values of ECT denotes that the alteration fluctuating fast tells us that in the long-run, there is bidirectional causality between VAT and social conflicts in Mozambique. This result leads to the "*tax-burden*" hypothesis.

Table 5: Results of Vector Error Correction Model

Independent Variables	Dependent Variables		
	ΔSocial Conflicts	ΔVAT	ΔGov Exp
ΔSC (-1)	-0.622***	-0.248***	-0.105*
	(0.0911)	(0.0556)	(0.0628)
ΔSC (-2)	0.259**	0.0576	-0.225***
	(0.102)	(0.0732)	(0.0782)
ΔVAT (-1)	0.858***	0.0144	-0.0386
	(0.216)	(0.0623)	(0.149)
ΔVAT (-2)	0.251	-0.0407	0.265**
	(0.182)	(0.132)	(0.125)
ΔGov Exp (-1)	0.197	0.0869	-0.0487
	(0.148)	(0.111)	(0.102)
ΔGov Exp (-2)	0.0168	-0.0483	-0.166
	(0.148)	(0.0905)	(0.102)
ECT (-1)	**-0.179*** (0.0584)-**		
ECT (-2)		**-0.0762** (0.0356)**	
ECT (-3)			0.0419
			(0.0403)
Constant	0.00626	0.00212	0.0305***
	(0.0164)	(0.0100)	(0.0113)
Observations	97	97	97

*Notes: Standard errors are in parentheses, *, **, *** denotes significance at 10, 5, and 1 percent.*

This result is consistent with our expectation about causality between VAT and social conflicts in Mozambique. The significant implication that comes from our VECM long-run relationship result is that a continuous increase of social conflicts in the long-run causes an increase in prices of goods and services because VAT is a primary source of tax revenue. Therefore, lowering the VAT on the prices of goods and services will reduce State revenue capacity, which will affect government expenditure. Again, reducing government expenditure will increase social conflicts because the government needs revenues, which are mainly composed of VAT revenue, to execute public spending. Thus, we have a vicious circle of prices of

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goods and services increase, social conflicts increase. Regarding government expenditure, we did not see any relationship with social conflicts or even VAT, and therefore, to achieve fiscal sustainability in the long-run, the government needs to diversify and expand its revenue system. Also, the policymakers need to design a Tax revenue system and specifically a new VAT revenue system that suits the local reality, so the VAT will not be a burden for most of the population who live in extreme poverty. Also, the government of Mozambique should encourage services that boost domestic production so that even when prices fluctuate internationally, the local impact can be minimized. And In the long-run, the policy implication suggested that there is interdependence between the increase in price on goods and services affected by VAT and the rise of social conflicts.

d) VECM and Wald Test for Short-run Causality Results

In this research, I test the short-run causality between the variables using the Wald test. To check causality, I use the Wald Coefficient test, which tells the direction of causality. As a criteria, we reject the null hypothesis if the probability value of chi-square is below or equal to 5 percent. The null hypothesis of this test is described below:

- H_0: no Granger-Causality
- H_1: the null hypothesis is not true

In Panel 1 in table 6 looking at social conflicts as a dependent variable, the VAT with a chi-square of 3.13 and probability of 0.00 and significant at 1 percent level, and here we can reject the null hypothesis meaning that VAT does granger social conflicts. The same cannot be inferred with government expenditure, which has a chi-square of 0.55 and a probability value of 0.46 and higher than 5 percent level, here we cannot reject the null hypothesis. Meaning that government expenditure does not granger social conflicts.

Table 6: Short-Run Granger Causality Test

Panel 1 Dependent Variable Δsocialconflicts			
Excluded	Chi-sq	DF	Probability
ΔVAT	3.13		0.00
ΔGov Exp	0.55		0.46
Panel 2 Dependent Variable ΔVAT			
Excluded	Chi-sq	DF	Probability
Δ social conflicts	24.08	22	0.08
ΔGov Exp	0.74		0.39
Panel 3 Dependent Variable ΔGov Exp			
Excluded	Chi-sq	DF	Probability
Δ social conflicts	0.59	2	0.44
ΔVAT	0.89	2	0.34

In Panel 2, where VAT is a dependent variable to social conflicts with a chi-sq. 28.08 and probability value of 0.08, we cannot reject the null hypothesis, and we can conclude that social conflicts does not granger VAT in Mozambique in the short-run. However, looking at P-Values in panel three, both social conflicts and VAT do not granger government expenditure; in both variables, we cannot reject the null hypothesis, which means that in the short-run, there is no causality from both social conflicts and VAT to government expenditure. Overall, looking at these results, we can conclude that there is a unidirectional causality running from social conflicts to VAT in the short-run in Mozambique. This result leads to the "*tax-conflicts*" hypothesis, which means that the increase in prices of goods and services affected by the new VAT system in Mozambique is the source of social conflicts in the short-run. To control social conflicts in the short run, the government of Mozambique should exempt or reduce VAT on essential goods and services, such as cereals (especially rice, maize, and wheat) and fuel, which are crucial for low-income households.

V. Conclusion and Policy Implications

The present research aimed at studying the relationship between VAT and social conflicts in the short and long-run in Mozambique from 1994 to 2018. For that purpose, I used two hypotheses, "*tax burden*" and "*tax conflicts*." The study was motivated by the fact that the oscillation in prices in the international market affected the goods and services included in the new VAT system within the Mozambican market. However, even with this relationship, there has never been any study that looked at the social implications. This study filled the gap in the research

I used econometric analysis to understand the short and long-run relationship between VAT and social conflicts using VECM models. From this model I concluded that in the long-run, there is a bidirectional relationship between social conflicts and VAT, the

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results described above show that social conflicts triggered an increase in the prices of goods and services included in the new VAT system and vice versa. These results supported our "*tax-burden*" hypothesis. while in the short-run, the results show a unidirectional relationship, running from VAT to social conflicts. This result substantiated the "*tax-conflicts*" hypothesis. From these results, it can be said that to contain social conflicts in the short-run, the government of Mozambique should exempt or reduce the VAT rate on essential goods and services, such as cereals and fuel, which are crucial for low-income households.

A policy implication drawn from this study is that, in the long-run, to contain social conflicts, the government should design a new VAT system that is adapted to the local socio-economic conditions, which comes with adjustment programs for low-income households, so that VAT will not be regressive. In addition, the government of Mozambique should encourage services that boost domestic productions so that even when prices fluctuate internationally, the local impact will be minimized.

Similarly, the government of Mozambique should seek to expand its tax base. VAT should not be seen as a substitute for other taxes, such as income tax or property tax. Further, the Mozambican government should move to the formal economy. By making these changes, the government will increase the sources of revenue to execute the government expenditures essential to contain social conflicts.

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