Trade liberalization, institutions, and economic growth in Malawi

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The study provides an empirical assessment of how institutions and trade liberalization affect Malawi's economic expansion. It tackles the absence of empirical research into how institutions affect economic growth and how trade liberalization policy affects institutions' influence on growth (interaction effect). The study also seeks to find out if economic growth, however, affects institutions as theories differ on causality. The study uses a time series analysis and autoregressive distribution lag (ARDL) technique to obtain short-run and long-run results. The study was conducted from 1988, the official inception year of trade liberalization in Malawi, to 2014. The empirical results show that political and economic institutions, as well as trade liberalization, affect Malawi's economic growth in both the short term and the long term. Trade liberalization and political institutions negatively affect economic growth in the short run and long run, whereas economic institutions positively affect economic growth in the short run and long run. The findings also show that when strong economic institutions rather than strong political institutions are present, the effect of trade liberalization on economic development is more prominent (positive). Finally, the study also finds that it is institutions that affect economic growth in Malawi and not the other way around.

Keywords: institutions, trade liberalization, economic growth, political institutions, economic institutions, autoregressive distributed lag

1. Introduction

Hadhek Mrad (1) stated that the poor quality of national institutions could adversely affect the economic growth of a country to the extent that the country could miss its integration into world trade. Malawi's, which is one of the developing countries in Africa, the growth rate has been less satisfactory for many years, trade liberalization has perpetuated more imports than exports, and the impact of institutions on economic growth has not yet been established. The key notion of institutions is that the quality of institutions induces productivity. Productivity is enhanced by trade openness, thereby increasing economic growth. In line with the above, the study seeks to examine if trade liberalization works through its interaction with institutions in influencing economic growth in Malawi.

Economic growth refers to a sustained increase in the capacity of the economy's production possibilities over a given period. Increases in the real gross domestic product (GDP) are used to quantify it. GDP is used to assess an economy's or an economic region's performance. It is used to determine if the country is generating more products and services than it did in the past (2). In Malawi, for example, the GDP growth rate was at 9% in 2009 but consistently dwindled starting from the year 2010, which registered a rate of 6%, until it reached a rate of 1% in the year 2012 (WDI, 2015). GDP is also used for international comparison, that is, the performance of the economy concerning other economies (2). Compared to Zambia, which achieved a GDP growth rate of 9% in 2009, 10% in 2010, and 6% in 2012, Malawi's growth performance has been less impressive (3). GDP also allows central banks and policymakers to judge whether there
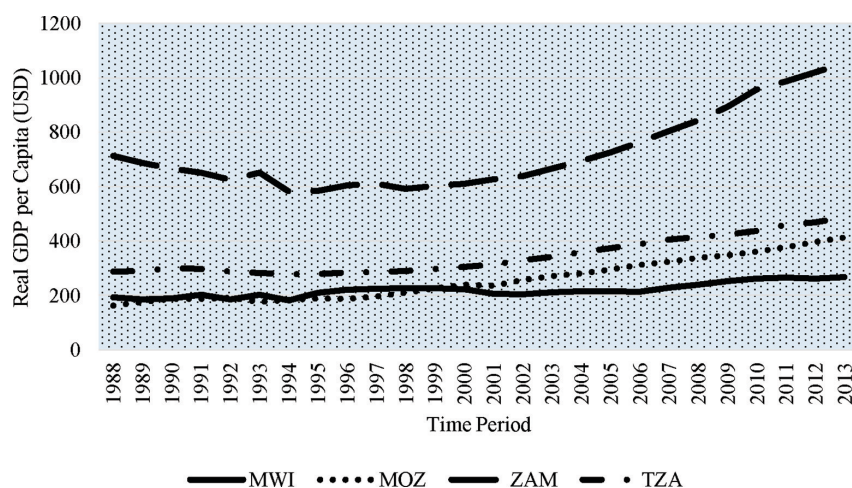
FIGURE 1 | Real GDP per capita for Mozambique (MOZ), Tanzania (TZA), Zambia (ZAM), and Malawi (MWI) from 1988 to 2014.

is a threat of recession or a boom and whether it needs restraint or a boost.

Economic growth and development are significantly influenced by international commerce. International commerce is viewed by economists as an "engine of growth" in the advancement of a nation (4). To boost economic growth, Malawi has pursued a number of economic changes, including trade liberalization, starting in 1988. The theory behind international commerce is that it boosts more forward and backward economic connections, decreases underemployment and unemployment, promotes investment and savings and assures a bigger outflow of products and services and an influx of factor inputs into the economy (5). Nevertheless, Malawi has experienced increased imports while its exports remained low following trade liberalization, a situation that has negatively affected its trade balance. For instance, the growth rate in the trade balance was −24.4% in 2010 and worsened to −17.8% and −2.1% in 2013 and 2014, respectively (3). However, trade liberalization is a shift in the direction of freer trade by the reduction, removal, and elimination of taxes on products and services (including tariffs and import levies) and other trade obstacles, including import quotas, subsidies, and non-tariff trade barriers. It is the primary driving force behind globalization and economic growth (5).

In the theory of trade, the relationship between economic growth and openness is complex. Heckscher-Ohlin and Stolper-Samuelson's theories argue that openness to trade contributes to economic growth through efficiency gains and comparative advantage (6). In contrast, the theory of structural pessimism advocated by Prebisch and Singer (Prebisch and Singer, 1950) argues that openness to trade in the long run may cause losses to less developed countries such as Malawi due to declining terms of trade as they mainly export income-inelastic primary products.

The extensive and expanding literature on trade and growth continues to provide conflicting empirical findings. Some suggest that trade liberalization is associated with

growth in the sense that trade openness increases the speed of convergence, while others conclude that trade openness may even retard growth in the sense that increased openness to trade has led to income divergence rather than convergence in sub-Saharan African (SSA) countries (Rodrick, 2000). Rodrick (2000) also initiated the debate that trade openness has no isolated effect on economic growth when institutions are controlled for in the empirical analysis. Numerous studies have been conducted on this debate following this paper (7– Tervio and Irwin, 2002; Kraay and Dollar, 2003); however, the debate remains inconclusive.

Institutions are the limitations created by people to shape and regulate interactions between different economic agents on the social, political, and economic levels (North, 1991). They include both formal regulations (such as laws and constitutions) and unofficial restraints (such as property rights and civil freedoms) (codes of conduct, traditions, customs, taboos, and sanctions). Social, political, and economic institutions are among the three categories of institutions. Because they provide incentives for a range of economic stakeholders in society, economic institutions are essential for economic success in any country. They also decide how the nation's resources and economic advantages are distributed. Political institutions deal with how a country's political system affects how economic agents behave in relation to the de facto and de jure allocation of political power (8). Political institutions include the military, the rule of law, the degree to which political power is

TABLE 1 | Lag length selection.

Lag	AIC	SIC	HQ
0	−3.135048	−2.745007	−3.026867
1	−3.315204*	−2.778898*	−3.166455*

*indicates the order selected by the criterion.

TABLE 2 | Estimated results for the selected ARDL growth model.

Variable	Coefficient	Standard error	t-statistic	Probability
DLOGRGDPC(−1)	−0.300925	0.209911	−1.433584	0.1795
LOGGKAP	0.045434	0.046255	0.982233	0.3471
LOGGKAP(-1)	0.076944	0.043971	1.749880	0.1079
DLOGLAB	−3.548210	1.627296	−2.180433	0.0518
LOGHKAP	−0.087129	0.095764	−0.909824	0.3824
LOGOPEN	−0.101317*	0.053438	−2.083110	0.0561
DLOGPR	0.006016	0.045743	0.131523	0.8977
DLOGPR(-1)	−0.134918**	0.045368	−2.973854	0.0127
LOGPCL	0.056460	0.057040	0.989839	0.3435
LOGPCL(-1)	0.208913**	0.075375	2.771630	0.0182
C	0.031133	0.018392	1.801480	0.0932
ECM (-1)	−0.724152	0.083091	−9.918680	0.0000
R-Squared	0.808894	–	F-statistic	3.879983
Adjusted R-Squared	0.600416	–	Prob(F-statistic)	0.016039
Durbin-Watson stat	2.120640	–		

***, **, and * represent statistical significance at 1%, 5%, and 10% respectively.

restrained, and the type of government that a nation has, such as the democracy that Malawi acquired in 1994.

Man creates institutions to foster harmony in society and to lessen uncertainty in the exchange of values. They are acknowledged as having played significant roles in the management of economies in recent years. The reason for this is that it is becoming clear that institutions other than economic ones affect people who engage in commercial transactions (9). Literature shows that the quality of institutions prevailing in the country also affects the economic growth rate of that country. Strong economic, political, and cultural institutions have been demonstrated to positively impact the rate of economic growth (1, 10–12). In their empirical investigations, Acemoglu and Johnson (8) and Lutz (2006) concluded that institutions have a significant role in the effectiveness of economic reforms in developing nations. The failure of trade reforms in SSA nations to enhance growth and trade was due to poor quality institutions. In a study on North African countries by Lutz (2006), the results show that the quality of institutions contributes to a large extent to the growth effects of economic reforms. Third World nations are said to be impoverished because of a system of rewards for political and economic behavior that discourages work-related activity (6).

Conversely, good institutional framework and trade openness can be caused or influenced by economic growth. When a country is going through economic growth, there is an increase in competition coupled with foreign and domestic rivalry, which leads to an increase in the innovation of institutions. The modernization hypothesis, published by Lipset in 1959, which contends that increasing wealth permits the emergence of new power groupings and produces more complex social structures, provides evidence in favor of the argument. Coupled with forces such as industrialization, increased literacy, and popular political involvement results

in "better" institutions developing. Hence, the study aims to empirically find whether growth factors such as trade liberalization work through their interactions with institutions in influencing economic growth in Malawi, since there has been a dearth of empirical literature on institutions yet they are key to economic growth.

1.1. Problem statement

According to the World Bank (3), Malawi has a GDP per capita (PPP) of $226.50 ranking it the poorest in the world. It also indicates that the economic growth path of Malawi has been below the regional average of 5.2% between 2007 and 2014. The forecasts for Malawi's growth of 2.5% in 2015 and 3.2% in 2016 also indicate a fall in economic growth below regional averages of 3.7% in 2015 and 4.3% in 2016. Compared to its neighbors (Tanzania, Zambia, and Mozambique), Malawi appears to be at the bottom of economic progress as shown in **Figure 1**.

Zambia appears to be the best performer among the four countries with the highest real GDP per capita, followed by Tanzania. In the 80s and 90s, Malawi was at par with Mozambique but later in the 90s, after the civil war in Mozambique, economic progress improved and left

TABLE 3 | Cointegration analysis of bounds test.

Critical value	Lower bound	Upper bound
1%	3.15	4.43
2.50%	2.75	3.99
5%	2.45	3.61
10%	2.12	3.23

Computed F-statistic: 5.425119.

Malawi behind. This signifies that Malawi's growth path is subject to scrutiny.

Given the above, some studies have tried to look at factors that explain economic growth in Malawi. Khungwa (13) conducted one of the significant studies, looking at the factors that influence economic growth in Malawi. In her study, she attributes greater power to economic forces like capital, labor, technology, foreign direct investment, and trade liberalization other than institutions. Yet the recent influential work such as that of Acemoglu and Johnson (8) in South America has emphasized the need for strong and efficient institutions as a precondition for growth. These studies argue that explaining the growth nexus with factors such as capital, foreign direct investment, and trade liberalization should be considered through their interactions with institutions. Therefore, a step forward from the studies that have investigated determinants of growth in Malawi needs to incorporate institutions other than following the general trend of looking at the determinants of growth working in isolation with institutions.

Studies by Oluwatoyin and Folasade (Oluwatoyini and Folasade, 2014), Lutz and Ndikumana (10) and Matthews (6) have considered the determinants of economic growth working through their interactions with levels of institutions in SSA. However, the analysis that has been done was at a regional level (SSA) and not Malawi in particular. Hence, there is a need to investigate the determinants of growth working through their interaction with institutions in Malawi because macroeconomic conditions at the regional level could be different from those of individual countries such as Malawi. Therefore, the studies conducted at the regional level may not necessarily explain the factors that influence economic growth on a disaggregated level such as Malawi. Hence, the study aims at empirically finding whether growth factors such as trade liberalization work through their interactions with institution in influencing economic growth in Malawi, since there has been a dearth of empirical literature on institutions, yet they are a key to economic growth.

1.2. Objectives

To achieve the main objective, the study has the following specific objectives:

i. To assess how trade liberalization has affected Malawi's economic expansion.

ii. To determine how Malawi's political and economic institutions affect the country's economic growth.

iii. To evaluate how the interaction effect of institutions and trade liberalization has affected the growth of the Malawi's economy.

iv. To explore the possibility of reverse causality of economic growth affecting institutions in Malawi.

2. Methodology

The studies of Oluwatoyini and Folasade (Oluwatoyini and Folasade, 2014), Lutz and Ndikumana (10) served as the basis for this study's model (2011). They all concentrated on institutions, economic expansion, and trade liberalization. The model defined in this study, however, varies from that of the scholars mentioned above in that it segments the institutions into economic and political institutions to meet the study's aims. This is due to the study's concentration on a single nation (Malawi), as opposed to a range of nations like the research mentioned above.

The Solow growth model assumes that the exogenous variables of labor and capital influence economic growth. Hence, the Solow growth equation is represented by the set of variables in equation 1:

$$Rgdpc = f(Gkap, Lab, A) \qquad (1)$$

where Rgdpc is the real GDP per capita;

Gkap is the gross fixed capital formation (a measure of capital);

Lab is the employment to population ratio (a measure of labor);

A is the total productivity factor (a measure of productivity).

The endogenous growth model presupposes that factors other than capital and labor have an impact on economic growth. Human capital accumulation was included in the Mankiw et al. (14) model in its expanded form. The analysis assumes that, in addition to capital and labor, institutions (INST) and trade liberalization (TL) factors also have an impact on economic growth, as seen by Cellini (15). Hence, equation (1) is rewritten as:

$$Rgdpc = f(Gkap, Lab, A, Hkap, TL, INST) \qquad (2)$$

Equations (3 and 4) provide the variables that make up the trade liberalization and institutional variables:

$$INST = f(PR, PCL) \qquad (3)$$

$$TL = f(Open) \qquad (4)$$

where PR is property rights (a proxy for economic institutions);

PCL is political and civil liberties (a proxy for political institutions);

Open is the degree of openness (a measure of trade liberalization);

Hkap is human capital proxied by secondary school enrolments.

However, a model of endogenous growth that takes institutions and trade liberalization into account is given. It is based on theoretical, empirical, and conceptual frameworks about how institutions and trade liberalization

TABLE 4 | Estimated results for the long-run ARDL growth model.

Variable	Coefficient	Standard error	t-statistic	Prob.
LOGGKAP	0.108598	0.072932	1.489033	0.1646
LOGLAB	−3.148704	1.597085	−1.971532	0.0743
LOGHKAP	−0.077319	0.088951	−0.869227	0.4033
LOGOPEN	−0.108909*	0.058348	−1.866545	0.0830
LOGPR	−0.196957*	0.086981	−2.264355	0.0447
LOGPCL	0.235493*	0.114786	2.051587	0.0648
C	0.032416	0.015161	2.138147	0.0506

***, **, and * represents statistical significance at 1%, 5%, and 10%, respectively.

TABLE 5 | Estimated results for the short-run ARDL interaction effect model.

Variable	Coefficient	Standard error	t-statistic	Probability
DLOGRGDPC(-1)	−0.031138	0.159868	−0.194770	0.8486
LOGGKAP	0.054228	0.045005	1.204935	0.2497
LOGGKAP(-1)	0.069179	0.039277	1.761331	0.1017
DLOGLAB	0.005048	1.483129	0.003403	0.9973
DLOGLAB(-1)	−4.080517	1.651646	−2.470576	0.0281
LOGHKAP	−0.152314	0.095048	−1.602488	0.1331
LOGOPEN	−0.061284	0.049843	−1.229529	0.2407
DLOGPR	−0.107563	0.061003	−1.763233	0.1013
DLOGPR(-1)	−0.084106	0.042310	−1.987869	0.0683
LOGPCL	−0.022102	0.058354	−0.378757	0.7110
LOGOPEN-LOGPR	0.442802**	0.149216	2.967527	0.0109
C	0.035860	0.015840	2.263807	0.0413
R-Squared	0.788994		F-statistic	4.419045
Adjusted R-Squared	0.610450		Prob(F-statistic)	0.006708
Durbin-Watson stat	2.138457			

***, **, and * represent statistical significance at 1%, 5%, and 10%, respectively, of the interacting variables.

TABLE 6 | Estimated results for the long-run ARDL interaction effect model.

Variable	Coefficient	Standard error	t-statistic	Prob.
LOGGKAP	0.119680	0.066620	1.79645	0.0957
LOGLAB	−3.952402	1.752600	−2.25517	0.0420
LOGHKAP	−0.147715	0.095981	−1.53900	0.1478
LOGOPEN	−0.059433	0.049914	−1.19071	0.2551
LOGPR	−0.185881	0.086324	−2.15329	0.0507
LOGPCL	−0.021434	0.056878	−0.37685	0.7124
LOGOPEN-LOGPR	0.429430**	0.163838	2.62108	0.0211
C	0.034777	0.012522	2.77723	0.0157

***, **, and * represent statistical significance at 1%, 5%, and 10%, respectively, of the interacting variables.

affect economic growth. A structural equation model acknowledges the connections between trade liberalization, institutions, and economic growth. This definition identifies the institutions, trade liberalization, and other policy intervention channels that influence economic growth over time. As a result, the growth model in this study is explicit as follows:

$$Rgdpc = f\left(Gkap,\ Lab,\ A,\ Hkap,\ Open,\ PR,\ PCL\right) \quad (5)$$

Equation (5) is adapted from the endogenous growth theory. The study is restricted to a limited number of explanatory variables so as not to reduce the degrees of freedom (16).

The Solow growth model includes a few standard model variables. It is presummated that the variables have a non-linear connection based on the Cobb-Douglas production function. Thus, the Cobb-Douglas form of equation (5) is:

$$Rgdpc = Gkap^{\alpha_1} Lab^{\alpha_2} A^{\alpha_3} Hkap^{\alpha_4} Open^{\alpha_5} PR^{\alpha_6} PCL^{\alpha_7} \varepsilon \quad (6)$$

TABLE 7 | Estimated results for the short-run ARDL interaction effect model.

Variable	Coefficient	Standard error	t-statistic	Probability
DLOGRGDPC(-1)	−0.020927	0.198600	−0.10537	0.9176
LOGGKAP	0.033823	0.052735	0.64139	0.5316
DLOGLAB	−6.142713	2.417295	−2.54115	0.0235
LOGHKAP	−0.063467	0.111539	−0.56901	0.5784
LOGOPEN	−0.113970	0.054199	−2.10281	0.0541
DLOGPR	0.111144	0.075357	1.47490	0.1624
LOGPCL	−0.001335	0.058942	−0.02265	0.9823
LOGPCL(-1)	0.232139	0.113132	2.05193	0.0594
LOGOPEN-LOGPCL	−0.659202**	0.249087	−2.64648	0.0192
C	0.049909	0.016947	2.94506	0.0106
R-Squared	0.701462		F-statistic	3.289525
Adjusted R-Squared	0.488221		Prob(F-stat)	0.021034
Durbin-Watson stat	2.041139			

***, **, and * represent statistical significance at 1%, 5%, and 10%, respectively, of the interacting variables.

TABLE 8 | Estimated results for the long-run ARDL interaction effect model.

Variable	Coefficient	Standard error	t-statistic	Prob.
LOGGKAP	0.033130	0.054107	0.612311	0.5501
LOGLAB	−6.016801	2.609922	−2.305357	0.0370
LOGHKAP	−0.062166	0.112873	−0.550758	0.5905
LOGOPEN	−0.111634	0.057376	−1.945654	0.0721
LOGPR	0.108866	0.075877	1.434773	0.1733
LOGPCL	0.226074	0.125321	1.803956	0.0928
LOGOPEN-LOGPCL	−1.052347**	0.531703	−1.979199	0.0678
C	0.048886	0.012558	3.892973	0.0016

*, **, and *** represent statistical significance at 10%, 5%, and 1%, respectively, of the interacting variables.

The Cobb-Douglas production function needs to be transformed into a linear function to find explicit solutions to the unknowns. Since equation (6) is non-linear, the OLS estimation method cannot be used to compute it correctly. Therefore, to use the OLS approach, equation (6) must be converted into a linear form. The equation is then transformed using the double log technique so that the calculated parameters may be understood as elasticities immediately. However, the variable total factor productivity will not be used in empirical analysis due to the unavailability of data, it will be removed from equations that would be estimated. Eventually, equation (6) becomes:

$$LogRgdpc_t = \alpha_0 + \alpha_1 LogGkap_t + \alpha_2 LogLab_t + \alpha_3 LogHkap_t + \alpha_4 LogOpen_t + \alpha_5 LogPR_t + \alpha_6 LogPCL_t + \varepsilon_t \quad (7)$$

where α_0 is the intercept.

The following equations will also be used to determine the interaction effect between trade liberalization and institutions:

$$LogRgdpc_t = \alpha_0 + \alpha_1 LogGkap_t + \alpha_2 LogLab_t + \alpha_3 LogHkap_t + \alpha_4 LogOpen_t + \alpha_5 LogPR_t + \alpha_6 LogPCL_t + \alpha_7 LogOpen^*LogPR + \varepsilon_t \quad (8)$$

$$LogRgdpc_t = \alpha_0 + \alpha_1 LogGkap_t + \alpha_2 LogLab_t + \alpha_3 LogHkap_t + \alpha_4 LogOpen_t + \alpha_5 LogPR_t + \alpha_6 LogPCL_t + \alpha_7 LogOpen^*LogPCL + \varepsilon_t \quad (9)$$

Where $\alpha_7 LogOpen^*LogPR$ (in Equation 8) is the interaction effect between trade liberalization and economic institutions;

$\alpha_7 LogOpen^*LogPCL$ (in Equation 9) is the interaction effect between trade liberalization and political institutions.

The interacting variables in equations 8 and 9 are not put into a single equation to prevent estimation problems such as multicollinearity.

To test for the reverse causality, the study will estimate equation 10 with institutions (economic or political) as the dependent variable and economic growth as an independent variable to find out if economic growth

does affect institutions as suggested by the proponents of modernization theory.

$$LogINST_t = \alpha_0 + \alpha_1 LogRgdpc_t + \alpha_2 LogGkap_t \quad (10)$$
$$+\alpha_3 LogLab_t + \alpha_4 LogHkap_t + \alpha_5 LogOpen_t$$
$$+\alpha_6 LogPR_t + \alpha_7 LogPCL + \varepsilon_t$$

Where INS is an institution (economic or political institutions).

The study will estimate equations 7–10 using the autoregressive distributed lag (ARDL) bounds test approach to cointegration. Pesaran et al. (17) created the ARDL "bounds test" method (2001). It is based on the ordinary least square (OLS) estimate method of a conditional unrestricted error correction model for cointegration analysis (UECM).

The ARDL modeling procedure enables the estimation of both long- and short-run (error correction) coefficients within one equation, regardless of the order of integration of the variables being considered. The inclusion of the error correction mechanism in the single-equation specification integrates the short-run dynamics with the long-run equilibrium relationship. Second, ARDL permits a variety of I(0) and I(1) variables as explanatory variables, which is not the same as a requirement for the Johansen procedure. Hence, the technique of ARDL is superior as it does not require the underlying data to have a specific order of identification. Third, the ARDL technique is appropriate for a finite or small sample size (17). The final advantage of this technique is the inclusion of the lagged variables to capture the data generating process, which is undertaken through a general-to-specific framework.

According to Pesaran et al. (17), the economic growth equation (7) can be expressed in the UECM version of the ARDL model for estimation purposes as follows:

$$D(Rgdpc)_t = \alpha_0 + \sum_{i=1}^{n} \alpha_1 D(Rgdpc)_{t-i} + \quad (11)$$

$$\sum_{i=1}^{n} \alpha_2 D(Gkap)_{t-i} + \sum_{i=1}^{n}$$

$$\alpha_3 D(Lab)_{t-i} + \sum_{i=1}^{n} \alpha_4 D(Hkap)_{t-i} + \sum_{i=1}^{n}$$

$$\alpha_5 D(Open)_{t-i} + \sum_{i=1}^{n} \alpha_6 D(PR)_{t-i} +$$

$$\sum_{i=1}^{n} \alpha_7 D(PCL)_{t-i} + \beta_8 (Rgdp)_{t-1} + \beta_9 (Gkap)_{t-1} +$$

$$\beta_{10}(Lab)_{t-1} + \beta_{11}(Hkap)_{t-1} + \beta_{12}(Open)_{t-1} +$$

$$\beta_{13}(PR)_{t-1} + \beta_{14}(PCL)_{t-1} + \varepsilon_t$$

The short-run dynamic coefficients of the equation are explained by the parameters I ($I = 1$–7), whereas the long-run multipliers are explained by I ($I = 8$–14). In the UECM

TABLE 9 | Diagnostic tests in the reverse causality model.

Diagnostic test	F-statistic	Probability	Status
Serial correlation	0.121682	0.7318	Fail to reject null
Heteroscedasticity	1.555767	0.2152	Fail to reject null
Normality	0.122955	0.094037	Reject null

version of the ARDL model, Pesaran et al. (17) found that the interaction impact between trade liberalization and economic institutions in equation (8) may be stated as follows for estimation purposes:

$$D(Rgdpc)_t = \alpha_0 + \sum_{i=1}^{n} \alpha_1 D(Rgdpc)_{t-i} \quad (12)$$

$$+ \sum_{i=1}^{n} \alpha_2 D(Gkap)_{t-i} + \sum_{i=1}^{n} \alpha_3 D(Lab)_{t-i}$$

$$+ \sum_{i=1}^{n} \alpha_4 D(Hkap)_{t-i} + \sum_{i=1}^{n} \alpha_5 D(Open)_{t-i}$$

$$+ \sum_{i=1}^{n} \alpha_6 D(PR)_{t-i} + \sum_{i=1}^{n} \alpha_7 D(PCL)_{t-i}$$

$$+ \sum_{i=1}^{n} \alpha_8 D(Open^*PR)_{t-i} + \beta_9 (Rgdp)_{t-1} + \beta_{10}(Gkap)_{t-1}$$

$$+\beta_{11}(Lab)_{t-1} + \beta_{12}(Hkap)_{t-1} + \beta_{13}(Open)_{t-1}$$

$$+\beta_{14}(PR)_{t-1} + \beta_{15}(PCL)_{t-1} + \beta_{16}(Open^*PR)_{t-1}+\varepsilon_t$$

The interaction impact between trade liberalization and political institutions in equation (9) may be stated as follows in the UECM version of the ARDL model for estimation purposes, according to Pesaran et al. (17).

$$D(Rgdpc)_t = \alpha_0 + \sum_{i=1}^{n} \alpha_1 D(Rgdpc)_{t-i} \quad (13)$$

$$+ \sum_{i=1}^{n} \alpha_2 D(Gkap)_{t-i} + \sum_{i=1}^{n} \alpha_3 D(Lab)_{t-i}$$

$$+ \sum_{i=1}^{n} \alpha_4 D(Hkap)_{t-i} + \sum_{i=1}^{n} \alpha_5 D(Open)_{t-i}$$

$$+ \sum_{i=1}^{n} \alpha_6 D(PR)_{t-i} + \sum_{i=1}^{n} \alpha_7 D(PCL)_{t-i}$$

$$+ \sum_{i=1}^{n} \alpha_8 D(Open^*PR)_{t-i} + \beta_9 (Rgdp)_{t-1}$$

$$+\beta_{10}(Gkap)_{t-1} + \beta_{11}(Lab)_{t-1} + \beta_{12}(Hkap)_{t-1}$$

$$+\beta_{13}(Open)_{t-1} + \beta_{14}(PR)_{t-1} + \beta_{15}(PCL)_{t-1}$$

$$+\beta_{16}(Open^*PCL)_{t-1}+\varepsilon_t$$

According to Pesaran et al. (17), the reverse causality equation (10), which finds out if economic growth affects

institutions, can be expressed in the UECM version of the ARDL model for estimation purposes as follows:

$$D(INST)_t = \alpha_0 + \sum_{i=1}^{n} \alpha_1 D(INST)_{t-i} \qquad (14)$$

$$+ \sum_{i=1}^{n} \alpha_2 D(Gkap)_{t-i} + \sum_{i=1}^{n} \alpha_3 D(Lab)_{t-i}$$

$$+ \sum_{i=1}^{n} \alpha_4 D(Hkap)_{t-i} + \sum_{i=1}^{n} \alpha_5 D(Open)_{t-i}$$

$$+ \sum_{i=1}^{n} \alpha_6 D(PR)_{t-i} + \sum_{i=1}^{n} \alpha_7 D(PCL)_{t-i}$$

$$+ \sum_{i=1}^{n} \alpha_8 D(Rgdpc)_{t-i} + \beta_9 (INST)_{t-1}$$

$$+ \beta_{10}(Gkap)_{t-1} + \beta_{11}(Lab)_{t-1} + \beta_{12}(Hkap)_{t-1}$$

$$+ \beta_{13}(Open)_{t-1} + \beta_{14}(PR)_{t-1} + \beta_{15}(PCL)_{t-1}$$

$$+ \beta_{16}(Rgdpc)_{t-1} + \varepsilon_t \qquad (15)$$

Relevant diagnostic tests and stability tests are conducted to ascertain the goodness of fit of the ARDL model.

3. Results

3.1. The ARDL model specification results

3.1.1. The short-run approach

To specify a good growth model with the guidance of standard information criteria, the study first sought to come up with the appropriate lag order of the differenced terms that would result in a more precise model. **Table 1** shows the lag order selection criteria.

Table 1 reports the optimal lag length of 1 out of a maximum of 2 lag lengths as selected by three different criteria: Akaike information criteria (AIC), Schwarz information criterion, and Hannan-Quinn information criterion. The one with the lower values is chosen.

3.1.1.1. Estimation results. The ARDL model with differenced terms of lag order one was estimated to determine the nature and direction of short-run dynamics of the selected variables. Real GDP is the dependent variable. The study found a lag response in the effect of institutions on economic growth. This suggests that while there are some consequences of institutional growth now, there will be more in the future. **Table 2** shows the estimated results.

Table 2 shows that the total model is statistically significant at 5% based on the F-statistical probability (0.016). The model is reliable because it shows that each of the independent variables contributes to the explanation of the dependent variable. The error correction mechanism (ECM)

is given by the coefficient of −0.72, indicating that 72% of all the deviations from the equilibrium level of real GDP that is caused by changes in the explanatory variable are corrected each year.

In the short run, economic growth is affected by trade liberalization represented by trade openness (OPEN), the lag of economic institutions represented by property rights (PR), and the lag of political institutions represented by political and civil liberties (PCL). This means that property rights and political and civil liberties were statistically significant when lagged.

As indicated in Chapter four section 4.3, the institution weakens as the value of the index increases, hence the expected sign being negative. This implies that the negative coefficient of political and economic institutions increases economic growth and a positive coefficient reduces economic growth.

Ceteris paribus, for every percentage point rise in trade openness, economic growth declines by 0.11% points. Popular opinion holds that trade liberalization leads to economic growth. This study discovered that it slows Malawi's economic growth. Since Malawi mostly imports goods and only sometimes exports them to other countries, it may be assumed that trade liberalization will be detrimental to the country. This is in line with the claims of the Christian Aid Briefing Paper (18) and some scholars such as Rodriguez and Rodrik (7) and Prebisch and Singer (1950), who claim that trade liberalization, does not contribute to economic growth. When trade is liberalized, new products flood in, thereby increasing imports. The new, cheaper, and better-marketed goods price out local producers in their markets. Exports also grow, but not by as much as imports. Demand does not change much for goods that sub-Saharan African countries export such as raw materials, so there is no room for export growth. Overall, this implies that local producers are selling less than they were before the trade was liberalized, and this reduces economic growth in the short run.

Holding all the other variables in the model fixed, a marginal improvement in the lagged values of economic institutions increases the current level of economic growth by 0.13%. Economic institutions involve protection against expropriation by the government and contracting institutions, which facilitate private contracts between citizens. They protect people from expropriation (for example, through price controls, outright confiscation, or high taxes), and individuals can profit from investment in both human and physical capital. This investment produces higher rates of growth, which eventually yield much higher living standards. As it creates incentives for different economic players in society and affects how resources are distributed efficiently in a country, improvement in economic institutions is crucial for economic growth in that nation. From the theoretical literature, it is expected that economic growth is positively influenced by economic institutions (19).

TABLE 10 | Estimated results on short-run reverse causality model.

Variable	Coefficient	Standard error	t-statistic	Probability
DLOGPR(-1)	0.029122	0.247634	0.117602	0.9078
DLOGRGDPC	0.435611*	1.205552	0.361338	0.7223
LOGGKAP	−0.157119	0.220271	−0.713300	0.4853
DLOGLAB	15.90881	6.912671	2.301398	0.0343
LOGHKAP	0.518722	0.496414	1.044937	0.3107
LOGOPEN	−0.383515	0.280306	−1.368202	0.1891
LOGPCL	0.456509	0.302597	1.508634	0.1498
C	−0.050837	0.084054	−0.604809	0.5533
ECM (-1)	−0.970878	0.247634	−3.920613	0.0011
R-squared	0.569611		F-statistic	3.214167
Adjusted R-squared	0.492392		Prob(F-statistic)	0.023251
Durbin-Watson stat	2.083884			

*indicates the statistically insignificant real GDP.

TABLE 11 | Estimated results for the long-run ARDL growth model.

Variable	Coefficient	Standard error	t-statistic	Prob.
LOGRGDPC	0.448678*	1.292287	0.347197	0.7327
LOGGKAP	−0.161832	0.232165	−0.697057	0.4952
LOGLAB	16.38601	7.948356	2.061559	0.0549
LOGHKAP	0.534281	0.604392	0.883998	0.3890
LOGOPEN	−0.395019	0.292674	−1.349691	0.1948
LOGPCL	0.470202	0.290313	1.619636	0.1237
C	−0.052362	0.090762	−0.576909	0.5716

* indicates the statistically insignificant real GDP.

Ceteris paribus, a slight improvement in political institutions causes the present rate of economic growth to fall by 0.21%. Political institutions guarantee political stability. In economies with strong political institutions, there exist different interest groups such as labor unions that push producers to offer higher wages. The higher wages can consequently result in increased cost of production and hence reduced output. Similarly, labor unions can push for fewer working hours, which implies that less output can be produced per day. Countries with strong political institutions are also more likely to sign international agreements such as reducing carbon emissions, which can result in less output produced, and trade liberalization, which may not favor countries such as Malawi, which are net importers.

According to the study's findings, economic institutions rather than political institutions appear to have a bigger impact on Malawi's economic growth (evident from the coefficients of −0.13 for property rights and 0.21 for political and civil liberties in Table 2). One can deduce from the results that political systems in Malawi are not of the essence and, as long as economic institutions are in place, the economy is bound to grow. Therefore, robust economic institutions must be in place to guarantee that commerce with other nations

proceeds without any problems if Malawi is to benefit from international trade.

3.1.2. The long-run approach

Before testing the presence of a long-run relationship among the variables, ARDL uses the bounds testing approach to cointegration, which determines whether there is a long-run relationship between the variables or not. We compare the F-statistic computed within the unrestricted error correction framework of the bounds test with the lower and upper critical values developed by Narayan (20).

In Table 3, the bounds cointegration test results demonstrate that the null hypothesis of no existence of the long-run relationship is easily rejected at the 1% significance level against its alternative. The computed F-statistic of 5.425119 is greater than the lower critical bound value of 3.15, hence indicating the strong existence of a long-run relationship. This result suggests that there exists a long-run relationship between economic growth (real GDP) and the explanatory variables of the model.

3.1.2.1. Estimation results and interpretation. The study further estimates the ARDL model to determine the long-run relationship dynamics. The study estimated the impact of the explanatory variables on economic growth in the

long run. **Table 4** shows the estimated results; In the long run, economic growth is affected by trade liberalization and economic and political institutions.

In the long run, a 1% increase in trade openness results in a 0.11% fall in economic growth, holding other variables constant. In the long run, it is the production that keeps a country going, and if trade liberalization means decreased production due to the influx of new, cheaper, and better-marketed goods that price out local producers in their markets, in the end, it will mean fewer incomes for Malawian producers. If there were any benefits to consumers in the short term, they will be wiped out in the long term as unemployment may rise and incomes may fall, thereby reducing economic growth.

A marginal improvement in the level of political institutions results in a 0.24% decline in the value of economic growth in the long run, *ceteris paribus*. Strong political institutions guarantee long-term political stability. Long-term nations with solid political institutions are also more likely to join international trade accords like trade liberalization, which could not be advantageous to net importer nations like Malawi. They are also more likely to be involved in the fight against global warming, thereby reducing carbon emissions, and eventually reducing output.

3.2. Interaction effect models

3.2.1. Interaction effect between trade liberalization and economic institutions

3.2.1.1. Short-run approach.

3.2.1.2. Long-run approach.
In **Tables 5**, **6**, the coefficient of the variable that was used to determine whether trade liberalization and economic institutions have an interaction impact is positive in both the short and long terms (0.442 and 0.429, respectively). This suggests that when economic institutions are engaged, the detrimental effects of trade liberalization on economic development are minimized. The results show that trade liberalization has a negative effect on economic growth in Malawi, but when trade liberalization operates in an environment with good economic institutions, the outcome is positive, thereby positively influencing economic growth. These results are contrary to the findings of Matthews (6), who found that the interaction between economic institutions and trade liberalization is insignificant in influencing economic growth in SSA.

3.2.2 Interaction effect between trade liberalization and political institutions

3.2.2.1. Short-run approach.

3.2.2.2. Long-run approach.
The short- and long-term coefficients of the variable used to measure the interaction effect between trade liberalization and political institutions are negative in **Tables 7**, **8**, respectively (−0.659 and −1.052).

This suggests that even when political institutions are involved, the detrimental effects of trade liberalization on economic development are not lessened. This suggests that trade liberalization does not rely on political institutions to be successful in Malawi (military, dictatorship, or democracy). These conclusion are also in contrast to those of Matthews (6), who discovered that when political institutions interact with trade liberalization in SSA, economic development increases.

When economic institutions are active, trade liberalization has a stronger impact on economic growth than when political institutions are active. Thus, the analysis rejects the null hypothesis in chapter one and concludes that trade liberalization and institutions significantly affect Malawi's economic development. When economic institutions are involved, rather than when political institutions are involved, trade liberalization appears to have a greater impact on economic growth.

3.3. Reverse causality

Economic institutions were tested as a regressand to find out if institutions affect economic growth in Malawi. The study opted to adopt economic institutions as regressand than political institutions because the results above show that economic institutions are more vital to economic growth in Malawi than political institutions. So the study wants to find out if economic growth can affect institutions, and in this case, institutions will be represented by economic institutions. The diagnostic tests were undertaken to make sure the reverse causality model is correct.

The diagnostic tests in **Table 9** indicate that the estimations satisfy standard tests for serial correlation, normality, and conditional heteroscedasticity, as we failed to reject the null hypotheses of correct specification and no conditional heteroscedasticity.

3.3.1. Short-run reverse causality model

In **Table 10**, property rights are the dependent variable representing economic institutions. Real GDP is not statistically significant in influencing institutions. This means that, in the short run, economic growth does not affect institutions in Malawi, but rather institutions do affect economic growth.

3.3.2. Long-run reverse causality model

In **Table 11**, real GDP is not statistically significant in influencing institutions. This indicates that over the long term, economic growth in Malawi has little to no impact on institutions, but the reverse is also true.

This rejects the thesis raised by the modernization theory and agrees with the empirical findings of several scholars (8, 9, 21) that institutions influence economic growth and not the other way round.

4. Conclusion

In response to the objectives, the study found that trade liberalization and political institutions negatively affect economic growth while economic institutions positively affect economic growth in the short run. Trade liberalization continues to have a long-term negative impact on economic development, whereas political institutions have a positive impact and economic institutions have a statistically negligible impact. Both the long-term and short-term effects of the relationship between trade liberalization and economic institutions on economic growth are favorable. The long- and short-term effects of the relationship between trade liberalization and political institutions on economic growth are both detrimental. According to the study's findings on reverse causality, institutions in Malawi have an impact on economic progress, not the other way around.

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