Trade Openness and Economic Growth in Pakistan: The Role of Institutions

Dr. Muhammad Ayub[1], Hafiza Hira Jabbar[2], Naima Narmeen[3], Dilawar Hayat[4], Nimra Wakeel[5]

Abstract
More generally, the study has jumped on the bandwagon to disentangle some of the many ingredients of economic growth by exploring how institutional factors influence economic ones. We utilize time series data spanning from 1984 to 2022, which facilitates our analysis of the correlations between various variables. We draw the conclusions using the Auto Regressive Distributed Lag (ARDL) model. Long-run effects on economic growth are present and significant both from government spending-trade openness and corruption perspectives, where trade openness can have a positive impact as well. Factors such as population, gross fixed capita formation, government stability, and inflation shape the net effect on economic growth over time. One of these factors is the institutional variable of government stability, which positively influences economic growth. Furthermore, the process of controlling corruption results in economic contraction. This implies that the higher the level of corruption control, the faster economic growth will occur.
Keywords: trade openness, economic growth, institutions

1. Introduction

Both mature and emerging markets assume that the direct endogenous effects of formal institutions play a crucial role in promoting economic performance within the context of higher economic growth. Thus, for those policymakers interested in political economics, the question of how institutions foster economic growth is a much more immediate and political one. In the last two decades, a schism has been established in economic growth theory. Traditional school of thoughts divide themselves whether role of institutions is exogenous or endogenous determinant of economic growth. The importance of empirical research has been recognized in all traditional theories, however, there is still differences in choice of variables as determinants of economic growth in regression. In theoretical literature, different traditional theories recognized the importance of a number of variables such as the intuitional quality, natural resource endowments, macroeconomic distortions, human capital and investment rate. Modern literature has extensively explored many of these concepts. FDI, financial development, energy, and trade openness are some of the theories that, when combined with income inequality as an independent variable, provide valuable insights. Others have also found support. The primary goal of this study is to assess the elements that directly affect Pakistan's GDP growth rate. This study employs time series data to illustrate and analyze both traditional and innovative concepts of economic growth. In such a tradition of approach, classic growth theories have been a great help to follow how FDI competing causes capital formation and capital accumulation, both operating consumption affects domestic economies and standard of living. The main argument of present study is that the institutional quality yield the conducing environment for economic growth. The institutional role are supposed to lead higher economic growth levels through improving the economic activity and productivity of the economy.

Thus, the announcement of development occurs in economies that we assume have better institutional integrity than others. However, several institutional indices (the rule of law, corruption control, government performance, socio-economic conditions, investment profile, and democratic accountability) are also powerful in explaining the variation of economic growth across Pakistan. According to this study, an autoregressive distributed lag model was used to look into the dynamic relationship between economic growth, institutional quality, and a number of control variables. The data on institutions are from the political stability and government effectiveness indices of the International Country Risk Guide (ICRG), produced by Political Risk Services (PRS). The World Bank publishes the World Bank Indicator (WDI), which provides data for other variables.

2. Literature Review

The applied and theoretical issues between economic growth and institutions have thoroughly been scrutinized both in developing and developed economies. This article aims to re-investigate the problem by utilizing the ARDL approach to explore how institutional indicators contribute to economic growth in Pakistan. North and Thomas (1973) examined that quality of institutions positively affect growth by affecting the transaction costs, property rights and incentive structures. Rodrik (2000) argued the important role of different institutions of non-market in producing the contingent and complete markets. Institutional quality enhances the development and economic growth by decreasing the business doing risk, thus producing resources toward innovation rather than earning predatory rents or protecting property rights. Institutions positively affect economic growth has identified by numerous empirical literature, including tax administration, regulations, justice, law enforcement and governance[6]. Acemoglu and Johnson (2005) were cited by Acemoglu et al. In those pages, they demonstrated using a model that focusing on the quality of institutions produces greater long-term benefits from economic growth than a reduction in fixed factor productivity hoarding (2001, 2002). Similarly, Moers (1999) analyzed the hypothesis that broader measures of institutional quality are also more important determinants of economic growth. Both Olson et al. (1998) and Meon et Weill (2006) measure the positive effect of quality institutions on total factor productivity. Thus, economies with systemic institutional quality contribute more to Gross Domestic Product (GDP). Several studies, including Rodrik et al. (hedging), Bruno et al. (2004), Acemoglu et al. (2001), and Olson et al., have employed instrumental variable methodologies.

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[1] Corresponding Author, Assistant Professor School of Economics Bahauddin Zakariya University Multan, Pakistan, mayub@bzu.edu.pk
[2] M.Phil Scholar at School of Economics Bahauddin Zakariya University Multan, Pakistan, hafizahira0000@gmail.com
[3] Phd Scholar at School of Economics Bahauddin Zakaryia University Multan, Pakistan, naima.narmeen0333@gmail.com
[4] M.Phil Scholar at School of Economics Bahauddin Zakariya University Multan, Pakistan, dilawarhayyat2373@gmail.com
[5] M.Phil Scholar at School of Economics Bahauddin Zakariya University Multan, Pakistan, nimrarana086@gmail.com
[6]See Jalilian et al. (2007), Kauffman et al. (2005), Meon and Sekkat (2004),Rodrik et al. (2004), Rodrik and Subramanian (2003), for example.

The empirical challenge in each of these papers, as well as those that come later, is to ferret out causal channels running from institutional quality to outcomes ([Acemoglu et al. 1998]). All three find evidence supporting a casual link between growth performance and institutions.

Healthy institutions in the economic context are those that promote justice and ensure the equitable distribution of resources. Economic and political institutions shape the economic activity of a society, which in turn shapes its incentive structure (North, 1990).Acemoglu et al. (2003) qualify different economies as having the strong quality of institutions if these economies have strict command and control on the political behavior, suffer few radical social cleavages, possessing relative equality and are democratic. Similarly, stronger institutions play crucial role to attract foreign investment and also courage domestic investment to boost the economic activities. Buchanan, Le, and Rishi (2012) investigated that countries possessing strong institutions attract more capital flows from foreign countries. In Latin American countries, Bengoa and Sanchez-Ronbles (2003) found that economic development, economic freedom, and foreign direct investment (FDI) represented integrated signals. They went on to supply proof that both economic freedom and foreign direct investment (FDI) are oblique qualifiers in the economic enlargement procedure. Azman-Saini et al. (2010) conducted an investigation into the relationship between FDI, growth, and institutional quality, using economic freedom as a model for institutions. Economic freedom has transformed foreign direct investment (FDI) into a positive effect on the economy. Alguacil et al. (2011) researched the impact of foreign direct investment (FDI) on economic growth and also examined how the macroeconomic environment and institutional quality matter. They also documented that FDI enhanced the growth in lower-middle and low-income economies that have strong level of institutions.

3. Methodology and Data

This section of the article aims to describe the tools and measurements used to explore the cause-and-effect relationship between government expenditures, population growth, trade openness, gross fixed capital formation, inflation, government stability, and corruption control on economic growth in Pakistan. We use time series data from 1984 to 2022 to study the relationships between the different variables. Based on this finding, we then activate the auto-regressive distributed lag (ARDL) mode to draw conclusions. Political Risk Services (PRS) is the company that publishes the International Country Risk Guide (ICRG) and compiles sources from government stability and control of corruption. The World Bank publishes the data on economic growth and other control variables (derived from the World Bank Indicator, WDI), but in reality, it gathers these data from reliable sources. Independent variables used in this study are: government expenditures (GE); population growth (POP); trade openness (TOP); gross fixed capital formation (GFC); inflation rate; government stability; and control of corruption. Therefore, gross domestic product (GDP) growth will be the dependent variable in this study. All variables are used as the growth rate except the government stability and control of corruption. All variables are tested for unit root to determine the stationary level of all variables, so that appropriate technique is applied for regression. The estimation technique of ARDL is applied on a single equation model to run the regression and for estimate the variable's parameters, in any condition, simultaneously. The parameters estimated through the technique are not only unbiased but also efficient. The ARDL technique has advantage than other time series techniques that it not required all variables in the same order of stationary. The ARDL estimation must discard any variables in the model that are I(0) and I(1). Conversely, one cannot use an ARDL estimation to regress a higher-ordered I(2) variable. Table 1 illustrates the statistics of dependent and independent variables obtained from the Augmented Dickey-Fuller (ADF) test as part of the analysis. According to the data displayed in the above table, some variables are stationary at the level, and others are stationary at the first degree of difference. This outcome for the stationary variable validates the use of the ARDL approach.

Table 1: ADF tests of Stationarity of dependent and explanatory variables

Variables	Parameters	ADF Calculated	At 5%	Lag Values	Trend/Intercept	Conclusions
GDP	-0.89	-3.63	-2.97	4	Intercept	I(0)
GE	-1.26	-7.24	-2.96	4	Intercept	I(0)
POP	-0.02	-3.93	-2.96	4	Intercept	I(0)
TOP	-1.24	-6.82	-2.96	4	Intercept	I(1)
GFC	-0.70	-4.01	-2.96	4	Intercept	I(0)
GS	-0.87	-5.01	-2.96	4	Intercept	I(1)
CC	-0.86	-5.87	-2.96	4	Intercept	I(1)
INF	-2.04	-4.20	-3.60	4	Trend	I(0)

Note: Gross Domestic Product=GDP, Government expenditures=GE, population growth=POP, trade openness=TOP, gross fixed capital formation= GFC, inflation=INF, government stability=GS and control of corruption=CC.

3.1. Model Specification

We employ the two-step (ARDL) method to determine the long-run elasticities between dependent and independent variables. Understanding whether the various estimated variables have a long-term link is the first step to take. The second stage of Ard panel data tests co-integration, and then employs ECM and ARDL approaches to estimate the short-run and long-run coefficients, respectively. We use the bound test to verify the existence of cointegration in equation (1), and subsequently construct an unrestricted error correction model:

$$\Delta GDP_t = \alpha_0 + \sum_{i=0}^{a} \alpha 1_i \Delta(GDP)_{t-i} + \sum_{i=0}^{b} \alpha 2_i \Delta(GE)_{t-i} + \sum_{i=0}^{c} \alpha 3_i \Delta(POP)_{t-i} + \sum_{i=0}^{d} \alpha 4_i \Delta(TOP)_{t-i} + \sum_{i=0}^{e} \alpha 5_i \Delta(GFC)_{t-i} + \sum_{i=0}^{f} \alpha 6_i \Delta(GS)_{t-i} +$$

$$\sum_{i=0}^{g} \alpha 7_i \Delta(CI)_{t-i} + \sum_{i=0}^{h} \alpha 8_i \Delta(INF)_{t-i} + \beta_0 (GDP)_{t-1} + \beta_1 (GE)_{t-1} + \beta_2 (POP)_{t-1} + \beta_3 (TOP)_{t-1} + \beta_4 (GFC)_{t-1} + \beta_5 (GS)_{t-1} + \beta_6 (CI)_{t-1}$$

$$+ \beta_7 (INF)_{t-1} + \sigma_t \qquad (1)$$

$$GDP_t = \eta_0 + \sum_{i=1}^{\rho} \eta 1_i (GDP)_{t-i} + \sum_{i=0}^{\rho 1} \eta 2_i (GE)_{t-i} + \sum_{i=0}^{\rho 2} \eta 3_i (POP)_{t-i} + \sum_{i=0}^{\rho 3} \eta 4_i (TOP)_{t-i} + \sum_{i=0}^{\rho 4} \eta 5_i (GFC)_{t-i} +$$

$$\sum_{i=0}^{\rho 5} \eta 6_i (GS)_{t-i} + \sum_{i=0}^{\rho 6} \eta 7_i (CI)_{t-i} + \sum_{i=0}^{\rho 7} \eta 8_i (INF)_{t-i} \qquad + \varepsilon_t \qquad (2)$$

$$\Delta GDP_t = \varpi_0 + \sum_{i=1}^{q} \varpi 1_i \Delta(GDP)_{t-i} + \sum_{i=0}^{q1} \varpi 2_i \Delta(GE)_{t-i} + \sum_{i=0}^{q2} \varpi 3_i \Delta(POP)_{t-i} + \sum_{i=0}^{q3} \varpi 4_i \Delta(TOP)_{t-i} + \sum_{i=0}^{q4} \varpi 5_i \Delta(GFC)_{t-i} + \sum_{i=0}^{q5} \varpi 6_i \Delta(GS)_{t-i} +$$

$$\sum_{i=0}^{q6} \varpi 7_i \Delta(CI)_{t-i} + \sum_{i=0}^{q7} \varpi 8_i \Delta(INF)_{t-i} + \lambda (ECM)_{t-1} + \phi_t \qquad (3)$$

Where Δ represents the first difference operator, it is shown as a white-noise disturbance term in equation 1. Equation 1 also denotes the order of the ARDL estimation technique (a, b, c, d, e, f), which undergoes further extension through various model transformations. Essentially, Equation 1 indicates that economic growth is dependent on the interpretation of its components' lag values. When evaluating the model fit, Schwarz's minimum criteria is used to construct the structural lags. The first difference lagged values of the independent and dependent variables are applied to Equation 1 for both the long-run and short-run. The parameters are $(\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6, \alpha_7, \alpha_8)$ and $(\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7)$ coefficients of variables respectively. The Wald test is performed to multiply between variables included in the study to find a long-run relationship. Hypothesis H0LR: At this level, a Wald test is conducted on the long-run estimated coefficients, which include economic growth, government expenditures, population growth, trade openness, gross fixed capital formation, inflation_inflation_gdp_sum_fn1_gdp tc tvc_180–90, and political stability control of corruption. Equation 1 represents a null hypothesis. The null hypothesis based on the equation 1 is as follows:

$$H_0 : \beta_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7$$

There is no valid long-term relationship between the series.

$$H_1 : \beta_0 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq \beta_7$$

There exists a long-run relationship among the variables.

If the computed F-statistic value is lower than the lower bound value and there is no long-term relationship between economic growth and its determinants, we cannot reject the null hypothesis. If the computed F-statistic is greater than the value of the upper bound, then it implies that co-integration exists between economic growth and its determinants. We can calculate the short-run coefficients using the error correction term (ECM). If the Econ term is -.5, it holds significant importance and shifts the economy from its short-term trajectory towards its long-term trajectory. [1] Bannerjee et al. (1998) found a long-term relationship between economic growth and its determinants, as indicated by the high ECM significant value. The negative sign of the ECM term in the selected model also validates the uni-directional effect of variables.

Therefore, we can interpret the ECM term as a measure of the speed at which an economy adjusts to its long-run equilibrium. Many factors may affect this speed; for example, income growth could add gradually to a deviation from the long run in an early state while fully contributing in the latter.

Table 2: Bound testing results of Co-integration

Model	F-statistics Calculated	Critical Bound Lower Bound Value	Upper Bound Value	Conclusion
GDP,GE,POP,TOP GFC,GS,CI,INF	7.12 (0.04)	3.20 (99%)	4.29 (99%)	Co-integration exists

4. Results and Discussion

Table 1 results show that, over long periods of time, all government budgetary expenditures have an inapreciable and statistically insignificant effect on business expansion. Increased population participation in the labor force, especially through employment, significantly impacts an economy and fosters positive economic growth. Similarly, a degree of trade vulnerability can have a limited negative impact on economic performance. This occurs when the volume of imported goods exceeds the volume of exported commodities. Making an effort to increase gross fixed capital creation can have a small but beneficial effect on economic growth. Despite its relevance to the economic growth process, we can and will use inflation constructively. In the base case

scenario, like in the previous example, government stability and institutional variables have a positive and significant impact on the economy's growth. However, opposition to corruption control greatly reduces economic growth. This suggests that economic growth will rise with increasing levels of corruption control. Acemoglu et al.'s (2003) research aligns with these findings on institution factors.

Table 3 presents the tabulated results of short-run regressions. The findings reported here make it clear that macroeconomic and institutional quality variables determine the evolution of GDP. The significant positive impact of government spending, trade openness, and gross fixed capital formation on economic growth stems from their simultaneous crucial initial conditions. Furthermore, the level of inflation and the population's growth rate are both causes for concern in terms of economic expansion. Both the government's stability and its ability to control corruption impact economic growth; however, the government's security has a significant negative impact, while the level of corruption control positively influences the reduction of returns to scale.

Table 3: Growth Determinants in Long-Run

Explanatory Variables	Coefficients	Standard Errors	T-Ratio
GE	-0.0399	0.0340	-1.1728
POP	2.7043	1.1432	2.3655
TOP	-0.0158	0.0796	-0.1993
GFC	0.0852	0.0549	1.5516
GS	0.2492	0.1397	1.7836
CC	-1.6774	0.6159	-2.7232
INF	0.0154	0.0085	1.8069

Note: Results are based on Author's own calculations by using the Eviews.

Table 3: Growth Determinants in Short-Run

Explanatory Variables	Coefficients	Standard Error	T-Ratio (Probability)
ΔGE	0.40597	0.078013	5.2039[0.000]
ΔPOP	-0.81764	0.27314	-2.9935[0.006]
ΔTOP	1.16217	0.87698	1.8492[0.076]
ΔGFC	0.13161	0.048468	2.7153[0.012]
ΔGS	-0.55191	0.15896	-3.4720[0.002]
ΔCC	2.23509	0.92643	2.5376[0.017]
ΔINF	-3.1067	1.6227	1.9145(0.344)
ΔC	8.0780	1.8928	4.2678[0.000]
ΔT	0.095545	0.08564	1.1156[0.275]
ECM(-1)	-0.596	0.119	-5.002[0.0000]
R-Squared	0.94362	R-Bar-Squared	0.89799
DW-Statistic	2.1464	F-stat. F(12, 26)	29.2914[.000]

Note: Results are based on Author's own calculations by using the Eviews.

5. Conclusions and Policy Implications

The ARDL method regresses the model. The study's results indicate stability and a favorable long-term and short-term association among these variables. Result The study's findings reflected a concrete policy brief regarding Pakistan's policy implications. It reduces government spending, accelerating economic growth. Essentially, this suggests that the government should eventually limit non-development spending, which hinders economic growth. By increasing the amount of labor available in the economy, the population contributes to its growth. This necessitates that the government establish educational programs that increase the talents of the economy's workers. Similarly, the more open the trade, the lower the rate of economic growth. It means the government must choose export over import. Thus, gross fixed capital formation has a positive impact on economic growth. This means that when the government injects more physical capital, it should facilitate the growth of economic output. Similarly, the institutional variable shows a positive correlation between government stability and growth in the economy. This indicates that the government must actively contribute to enhancing economic stability in order to stimulate growth. Similarly, for economic growth, the government must exercise stricter control over corruption within the sector.

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