Journal of
Risk and Financial Management

MDPI

Article

The Impact of Government Effectiveness on Trade and Financial Openness: The Generalized Quantile Panel Regression Approach

Lethiwe Nzama [1,*], Thanda Sithole [2] and Sezer Bozkus Kahyaoglu [1,3]

[1] Department of Commercial Accounting, School of Accounting, College of Business and Economics, University of Johannesburg, Rossmore, Johannesburg 2006, South Africa
[2] Independent Researcher, Johannesburg 2006, South Africa
[3] Management Department, Faculty of Economics and Administrative Sciences, Kyrgyz-Turkish Manas University, Bishkek 720038, Kyrgyzstan
* Correspondence: lethiwen@uj.ac.za

Abstract: Purpose: This paper aims to investigate the impact of government effectiveness on trade and financial openness in 35 selected countries around the globe. Design/methodology/approach: A quantitative research approach was applied in the study using the generalized quantile panel regression approach to analyze the impact of identified variables in these selected countries. Panel quantile models with high estimation performance are preferred in the presence of excessive deviations and in cases where the normal distribution is invalid. Findings/results: The empirical findings indicate that selected countries with above-average governmental effectiveness, that is, with a well-established state bureaucracy and a historically strong state tradition, will further increase their activities toward international integration through financial and trade openness. Practical implications: This study aims to provide valuable information that governments and regulatory authorities can benefit from in their decision-making processes. Originality/value: In this study, it is preferred to use the trade openness of countries as the share of exports in total world exports and financial openness as the ratio of capital flows to world flows. In this way, these variables will provide new information to analyze the influence of government effectiveness. Implementing the generalized quantile panel regression technique can also be expressed as an innovation in this field of literature.

Keywords: governance; government effectiveness; trade openness; financial openness; generalized quantile panel regression

Citation: Nzama, Lethiwe, Thanda Sithole, and Sezer Bozkus Kahyaoglu. 2023. The Impact of Government Effectiveness on Trade and Financial Openness: The Generalized Quantile Panel Regression Approach. *Journal of Risk and Financial Management* 16: 14. https://doi.org/10.3390/jrfm16010014

Academic Editors: Yasir Shahab, Peng Wang, Yasir Riaz, Collins Ntim and Daniel Chai

Received: 26 October 2022
Revised: 12 December 2022
Accepted: 15 December 2022
Published: 27 December 2022

1. Introduction

Government effectiveness is critical for economic growth and, ultimately, human development. This is echoed by Alam et al. (2017), who contemplated a panel of 81 low-, middle-, and high-income economies to study the outcomes of government effectiveness on economic growth. Generally, they find a statistically significant relationship between government effectiveness and economic growth, particularly among low- and high-income economies. Similarly, trade and financial openness is generally associated with economic growth through increased trade volumes and financial flows. This is echoed by various studies ranging from but not limited to Asada (2022), Nguyen and Bui (2021), Alam and Sumon (2020), and Cevik et al. (2019) for the trade–growth nexus to Kouadio and Gakpa (2021), Estrada et al. (2015), and Agenor et al. (2018) for the finance–growth nexus.

It follows from the above that if government effectiveness and openness (trade and financial) lead to economic growth within a globally integrated economic system, then there must be an association between these variables (government effectiveness, trade, and financial openness), directly or indirectly. This association is investigated in this study from a sample of 35 developed and developing economies using the generalized quantile panel

regression approach. To the best of our knowledge, studies have yet to investigate the collective impact of trade and financial openness on government effectiveness. As such, this study aims to address that lacuna, particularly given that government effectiveness, trade, and financial openness are all critical for economic growth. In this paper, trade openness is proxied by the share of exports in total world exports, while financial openness is proxied by the ratio of capital flows to world flows. Government effectiveness is borrowed from World Bank's (2022) Worldwide Governance Indicators.

Since 1996, World Bank's "Worldwide Governance Indicators" (WGI) have been regularly evaluated for 215 countries on the basis of six dimensions of governance. The WGI (World Bank 2022) consists of a combination of six sub-indicators. These sub-indicators are categorized as "Voice and Accountability", "Political Stability", "Government Effectiveness", "Regulatory Quality", "Rule of Law", and "Control of Corruption". Effectively, these governance indicators aim to develop a quantitative measure of governance performance to assist with establishing policy reforms and monitoring mechanisms. Among these, government effectiveness, which is one of the six sub-indicators, constitutes the main subject of our study.

Government effectiveness can be evaluated qualitatively depending on the relationship between the administrative efficiency of the states and the bureaucratic structure. According to Fukuyama (2013), the relationship between the quality of governments and bureaucratic autonomy can be analyzed in a mathematical form similar to the Kuznets approach. While the Kuznets approach analyzes the relationship between per capita income and environmental pollution, the effectiveness of governments is examined in the context of the quality of governments and bureaucratic autonomy (Bozkus et al. 2020). However, in his approach, the interaction of the external variables in question with the basic variables of the economic structure is not considered. This study tried to contribute in terms of revealing the effect of trade and financial openness, which depends on the basic economic structure of the selected countries, on the effectiveness of governments, especially on governance.

Accordingly, the organization of the work is planned as follows. After the introduction, in the second part, a comprehensive literature review of the concepts that form the basis of the variables used in the empirical work of the study, namely governance, trade openness, financial openness, and government effectiveness, is presented. The third section describes the data and methodology. The reason for using the generalized quantile panel regression model is explained. In the fourth section, descriptive statistics, the estimation process, the results of applied tests, and empirical findings are presented. In the fifth section, there is a discussion of the key findings based on the relevant literature. In the conclusion part, policy recommendations and future research opportunities are made in relation to the empirical findings in order to contribute to the literature.

The activities carried out in the analysis are shown at Figure 1 schematically as follows.

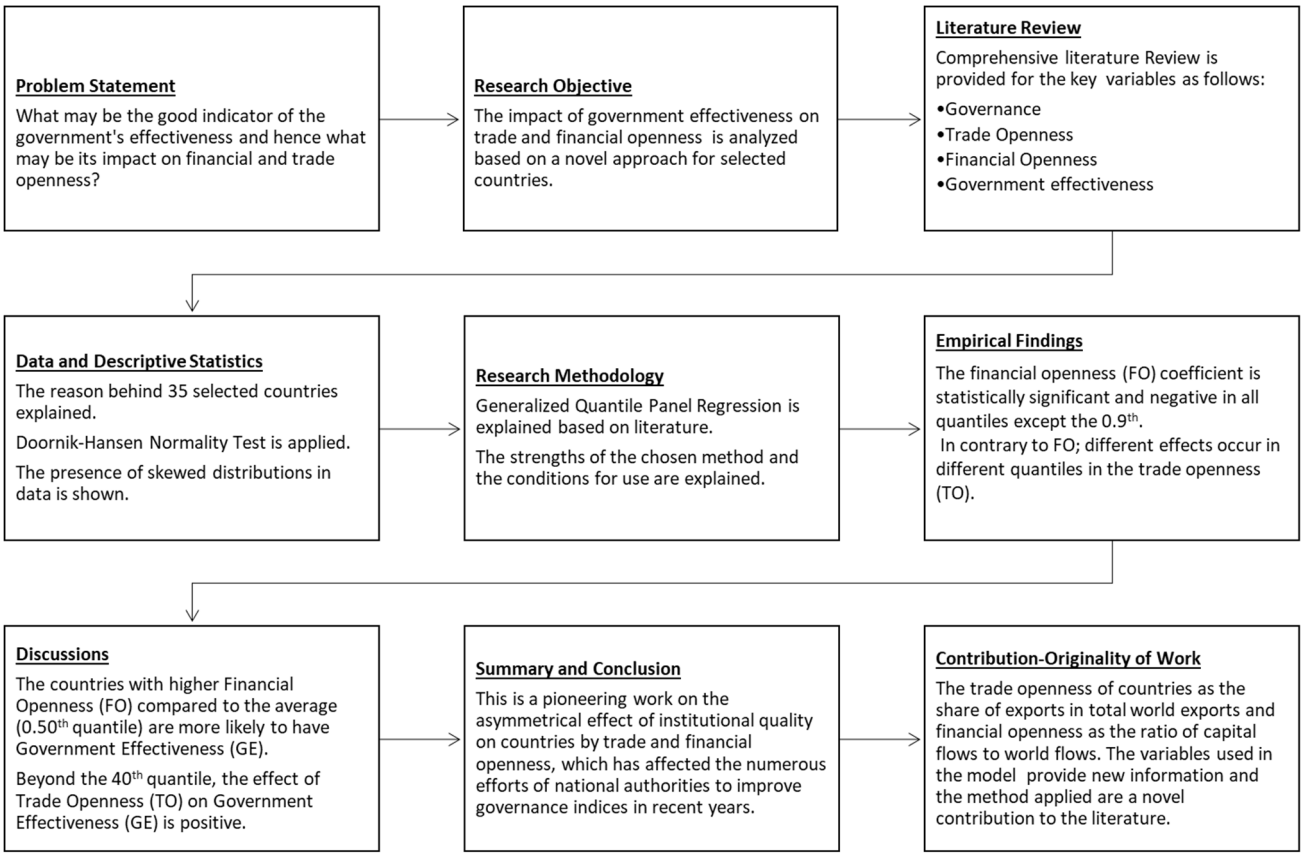

Figure 1. Work flow of research. Source: Prepared by the authors.

2. Literature Review

Several studies have investigated interlinkages between trade (and financial) openness and economic growth. While other studies have investigated the empirical association of economic growth with government effectiveness. On openness and growth, Alam and Sumon (2020) study the causal relationship of trade openness and economic growth for 15 Asian countries and find the positive impact of trade openness on economic growth. They further confirm bi-directional causal feedback between trade openness and economic growth in the short run. A study by Cevik et al. (2019) looks at the trade openness and economic growth in Turkey and finds evidence of a bi-directional relationship between trade openness and economic growth. They reveal that the economic growth impact of trade openness happens at a shorter horizon (4.3 to 7.5 years), while a feedback loop of economic growth on trade happens at a longer horizon (7.5 to 13 years). Asada (2022) examines the trade-openness–economic growth linkages accounting for human capital development and foreign direct investment in Thailand. This study finds that trade openness is positively associated with economic growth in Thailand. A study by Nguyen and Bui (2021) examines the impact of trade openness on economic growth within the Asean-6 economies. These implement a fixed-effect panel threshold approach and, interestingly, find that below a certain threshold, trade openness plays a critical role in stimulating economic growth. However, beyond a certain threshold, the impact of trade openness on economic growth is positive but lower.

On financial openness and economic growth, Kouadio and Gakpa (2021) argue that through increased financial openness comes an opportunity for improved resource allocation, portfolio diversification, and access of domestic firms to foreign funds, which result in higher profitability and growth. Although financial openness-growth results are generally mixed and usually inconclusive due to various measures of financial openness, sample period, country coverage, and chosen empirical methodology (Estrada et al. 2015).

Nevertheless, Estrada et al. (2015) find that the actual level of financial openness affects economic growth positively and significantly. This holds for two of the three measures of financial openness that their study use. Agenor et al. (2018) study the combined effects of prudential regulation, financial development, and financial openness on economic growth. Interestingly, Agenor et al. (2018) find that prudential measures targeted at dampening credit growth have a positive effect on economic growth and that financial development and financial openness appear to have a direct positive impact on economic growth. Further, Agenor et al. (2018) reveal that prudential measures generally tend to be less effective in boosting economic growth when the economy is more financially opened (or developed) because openness could allow firms and households to source funds from foreign financial sources.

As indicated, there is sufficient literature available on measuring trade and financial openness in multiple countries. However, there is limited literature on the impact of governance on trade openness and financial openness, as most available studies investigated the relationship between trade and financial openness and government size (Liberati 2007). Previous studies indicated a positive relationship between trade openness and the government size of the public sector of eighteen Organization for Economic Cooperation and Development (OECD) countries (Cameron 1978; Liberati 2007). Rodrik (1998) reports similar findings, showing a positive relationship between trade openness and government size in the public sector in developing and developed countries. In Pakistan, a similar study was conducted by Shahbaz et al. (2010), who also explored the impact of trade and financial openness on government size. Like Rodrik (1998) and Liberati (2007), Shahbaz et al. (2010) find a positive relationship between trade openness and the government's size in Pakistan. Pakistan's financial openness and government size are aligned inversely (Shahbaz et al. 2010).

Ayaydin et al. (2018) investigate trade openness, financial openness, and financial development in the eurozone (EZ) using a dynamic panel data analysis. Their study finds that trade and financial openness are statically significant determinants of financial development. In this respect, financial openness determines financial development and leads to the transformation of government business processes. Since rapid decision making and supervision are required in the field of finance, governments also undergo a transformation in this regard. For this reason, there is an acceptance in the literature that financial openness will increase government effectiveness. Furthermore, Ayaydin et al. (2018) state that the consequences of trade (financial openness) are adversely associated with the degree of financial (trade) openness because economies stand to profit the most from opening their trade ports. This is similar to Liberati's (2007) suggestion that trade openness opens the countries' economies.

On the African continent, a similar study to Ayaydin et al. (2018) was conducted by Bandura (2021), who investigated the impact of financial openness and trade openness on the financial development of 26 Sub-Saharan African countries over a period from 1982 to 2016. Bandura (2021) finds no significant impact when combining trade and financial openness on financial development within the countries studied, and this result disapproves the hypothesis by Rajan and Zingales (2003). Furthermore, Bandura (2021) recommends that there should be institutional quality for the African region to benefit from international business. Accordingly, it is further recommended to make public reform policies in order to increase institutional quality in developing countries (Abreo et al. 2021). This speaks directly to the critical need for sound government effectiveness to achieve better economic outcomes.

Klautzer (2013) investigates the relationship between economic openness and corporate governance practices in emerging nations. Klautzer (2013) examines the premise that economic openness may encourage the adoption of improved corporate governance standards in eleven Asian nations. Klautzer's (2013) study focuses on the private sector with special attention being given to public listed entities. The study further finds a positive impact of economic openness on corporate governance. This is illustrated by the fact

that companies include adopted transparent reporting on corporate governance issues in their annual reports. When there is transparency in reporting, the risk of bias is avoided, resulting in economic openness and legitimacy. As such, it is recommended that corporate governance be improved, as this might improve economic relations and ultimately trade.

2.1. Governance

Corporate governance is not only applicable to the private sector but is also important to the public sector. Corporate governance frameworks are also vital in developed economies as well as being significant in emerging ones. Good governance is essential for sustained economic growth, and many foreign assistance projects and domestic policies in developing countries are aimed at enhancing public sector governance (Klautzer 2013). Klautzer (2013) argues further that corporate governance has not received much attention in developing countries. However, in contrast to Klautzer (2013), South Africa, as a developing country, has received much attention regarding legislation and framework to improve corporate governance. For instance, South Africa has four King Codes of Corporate Governance, established to guide how public and private sector organizations can enhance their governance.

The King I Report was issued in November 1994 (Institute of Directors (IoD) 1994). The report is consistent with the Cadbury Report from the United Kingdom. However, it advocates for a more inclusive manner of doing business (Institute of Directors (IoD) 1994; van der Merwe 2020). The report highlights corporate reporting, ethics, and compliance, as well as the board of directors, auditors, and stakeholders in promoting good governance in an organization (van der Merwe 2020). The King II Report was issued in 2002 and encourages transparency and accountability amongst people in charge of the money given to them by their shareholders (Institute of Directors (IoD) 2002). In 2009, the King III Report was released, and like the other King reports, it emphasizes the necessity of an inclusive approach to corporate governance (Institute of Directors (IoD) 2009).

In contrast to the previous two King reports, which followed the "comply or explain" principle, the King III Report follows the "apply or explain" premise. For the King III Report, integrated reporting is introduced. The King IV Report was issued in 2016 and entirely replaced the King III Report (Institute of Directors (IoD) 2016). This report is released in response to the political, economic, and social issues and their influence on the Sustainable Development Goals (van der Merwe 2020). King IV also considers the public sector and sector supplements intending on guiding the King IV Code and how it should be interpreted and applied to various categories and sectors of organizations (Institute of Directors (IoD) 2016). The King IV Code supplements the focus on municipalities, non-profit organizations, small and medium enterprises, and state-owned entities (Institute of Directors (IoD) 2016). Thus, it can be argued that proper guidelines are available for organizations in both the public and private sectors to promote good governance, especially in South Africa.

In the King IV Code corporate governance approach, three basic areas of a "paradigm shift" (Figure 2) are revealed with an innovative perspective. These are the shifts (1) from financial capitalism to inclusive capitalism; (2) from short-term capital markets to long-term, sustainable capital markets; and (3) from silo reporting to integrated reporting. In general, the Code emphasizes sustainability to improve the quality of the information provided to the public through capital flows and financial reporting standards, beyond increasing the effectiveness of corporate governance.

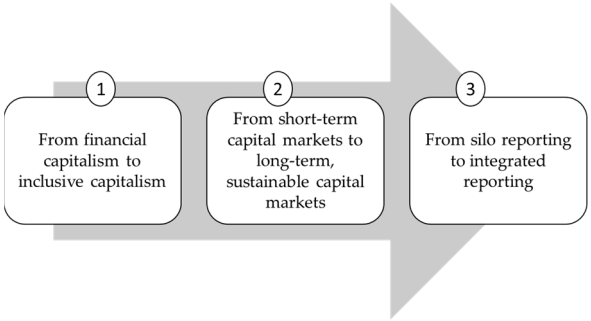

Figure 2. The Three Paradigm Shifts in Corporate Governance. Source: Institute of Directors (IoD) (2016).

2.2. Trade and Financial Openness

Sanz and Velázquez, as cited in Shahbaz et al. (2010), developed the notion of trade openness through foreign direct investment in twenty-first-century literature. The sum of exports and imports assesses trade openness in gross domestic product (GDP), which may encourage governments to raise public spending to protect their economies from the competitive dangers of international economies (Liberati 2007). Liberati (2007) contends that when countries increase their trade openness intending on increasing their economic exposure, they often also increase their trading risks. Some of these risks include the inability of central governments to raise tax revenues due to an increase in trade openness. As such, this risk may be mitigated by ensuring a higher degree of financial openness, which guarantees a free cross-border flow of capital and financial services.

Total capital flows measure financial openness, direct investments, borrowing on international capital markets, and covered interest rate differentials (Liberati 2007). There is an expectation that the effect of trade and financial openness on good governance will be of a positive nature. The main reason is that the trade and financial relations between countries are guaranteed by corporate and legal contracts and by a relationship of trust and decreasing transaction costs. While trade and financial relations are developing, the said contractual protection, in other words, reliability and the decrease in the transaction costs, support the process of good governance of each government, as positive external economies of scale (Jalilian et al. 2007; Chowdhury and Audretsch 2014).

In general, it is observed that the interaction emerging in terms of the institutional structure of the cooperating countries shows a tendency toward the legal structure of a developed country depending on the trade and financial relations of a developing country (Andrei 2007; Li and Samsell 2009). In the studies conducted, the handling of trade openness and financial openness is generally taken as the ratio of the country's total trade volume to the total gross domestic product (GDP). In contrast, the ratio of total capital flows to GDP is defined and monitored as the financial openness ratio.

Although these ratios are accepted as a basic indicator for the country's openness, the balance between imports and exports does not fully show the effect on either the duration of incoming capital flows or on the growth of the economy. Similarly, this situation makes it necessary to be cautious when interpreting its impact on government effectiveness.

In this respect, in this study, it is preferred to use the openness of countries as the share of exports in total world exports and the ratio of capital flows in total cash flows in the world. This will provide a new approach in terms of analyzing the effect on possible government effectiveness. As alluded to in the introductory section, trade openness, financial openness, and government effectiveness should hypothetically be associated with the fact that they all empirically have some association with economic growth. As such, this study investigates whether countries with high levels of trade and financial openness exhibit improved government effectiveness. To the best of our knowledge, no study has investigated this possible linkage within the generalized quantile panel regression framework.

2.3. Government Effectiveness

In this study, government effectiveness is chosen to analyze selected countries. Government effectiveness has been the subject of research for a long time in academic literature and has been defined from different perspectives (Moynihan and Pandey 2004; Brewer et al. 2007; Lee and Whitford 2009; Acemoglu et al. 2010; Acemoglu and Robinson 2012; Garcia-Sanchez et al. 2013; Garcia-Sanchez et al. 2016; Montes and Paschoal 2016). The Worldwide Governance Indicators (WGI) (n.d.) and (World Bank 2022) are based on six major categories of governance, namely (1) "Voice and Accountability", (2) "Political Stability and Absence of Violence/Terrorism", (3) "Government Effectiveness", (4) "Regulatory Quality", (5) "Rule of Law", and (6) "Control of Corruption" for over 200 countries over of a period of 1996–2021.

The WGI were first established by Daniel Kaufmann (Kaufmann et al. 2006). In this respect, within the scope of Worldwide Government Effectiveness, the following indicators are used from the relevant sources (Appendix A):

1. The quality of public services;
2. The quality of the civil services;
3. The degree of the independence from political pressures;
4. The quality of policymaking and high performance in the public services;
5. The positive perceptions of the credibility of government's loyalty to such policies;
6. The increase in economic growth;
7. The increase in foreign direct investment;
8. The quality of social infrastructure;
9. The increase in public investment;
10. The quality of public procurement systems and reduced corruption.

Overall, existing empirical work has demonstrated the importance of trade and financial openness in economic growth, while on the other hand, the importance of government effectiveness on economic growth has also been demonstrated. However, how these variables (trade openness, financial openness, and government effectiveness) interact together as critical variables for growth has not been investigated. So, we argue that if government effectiveness and openness (trade and financial) lead to economic growth within a globally integrated economic system, then there must be a direct or indirect association between these variables. This association is investigated in this study using a sample of 35 developed and developing economies using the generalized quantile panel regression approach. To the best of our knowledge, studies have yet to investigate the collective impact of trade and financial openness on government effectiveness. As such, this study aims to address that lacuna, particularly given that government effectiveness, trade, and financial openness are all critical for economic growth (see Figure 3).

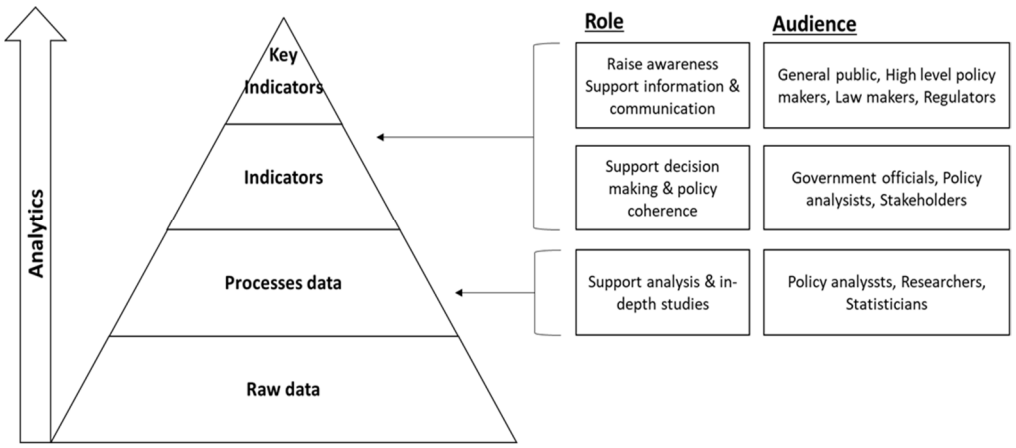

Figure 3. Information Pyramid as a tool for an Improved Government Decision-Making Process. Source: Adapted from Bilbao-Osorio et al. (2014).

3. Data and Methodology

The dataset used in this study was obtained from the official website of the International Monetary Fund (IMF) and the World Bank (WB). The selection criteria for these 35 countries can be summarized as follows:

I. The data subject to this study, 35 countries for the period of 2010–2020, were selected regarding the country information that considers the efficiency of the government within the scope of the OECD corporate governance principles and provides guarantees for the implementation of generally accepted standards.
II. These 35 countries declare to implement macroprudential policies and are included in the IMF's Macroprudential Policy Index (IMF 2021).
III. These 35 countries are involved in the World Bank's Global Financial Development Index. Therefore, it is found appropriate in terms of information needed for analysis and data quality (Appendix B).

The descriptive statistics of data given in Table 1 are estimated with Stata v.17. The Jarque–Bera test statistically reveals that the data do not have a normal distribution feature. The skewness and kurtosis values of the data also support this situation. In particular, the kurtosis value of the trade openness (TO) (9.83) and financial openness (FO) (15.32) variables is well above 3. Although these two variables have a leptokurtic structure, the kurtosis level of government effectiveness (GE) (1.92) is flatter than normal because its value is less than 3. Considering the skewness values of these variables, FO (1.45) and TO (2.55) are positively skewed, and GE (−0.33) is negatively skewed. This situation indicates the presence of asymmetric effects on these variables.

Table 1. Descriptive Statistics.

Variables	FO, Financial Openness	GE, Government Effectiveness	TO, Trade Openness
Mean	−0.000314	1.112052	2.161378
Median	−0.000566	1.272297	1.211419
Maximum	0.711575	2.335300	13.38627
Minimum	−0.446742	−0.449776	0.294792
Std. Dev.	0.105957	0.693492	2.544648
Skewness	1.456911	−0.331832	2.552197
Kurtosis	15.32259	1.921664	9.836015
Jarque–Bera	2572.068 *	25.71897 *	1167.608 *
Observations	385	385	385

Source: Prepared by the Authors via Stata v.17. (*) Statistically significant at 1% confidence interval.

In addition, the Doornik–Hansen normality test (Doornik and Hansen 2008) is applied for three variables, namely, government effectiveness (GE), trade openness (TO), and financial openness (FO). As indicated in Table 2, these variables are not normally distributed. Accordingly, it is suitable to use the generalized quantile panel regression method. In this way, the generalized quantile panel regression reduces the effect of deviations that may arise due to the variation in the data in the periods considered due to the excessive skewness and kurtosis. In other words, this method will produce more effective empirical findings compared to the standard panel data analysis method, as it will reduce the effect of deviations.

3.1. Quantile Regression

Koenker and Bassett (1978) propose a method called quantile regression, which is used to estimate the functional relationship between the dependent variable and the independent variable or variables at any quantile value to eliminate the limitations of classical linear regression models. Hence, quantile regression is an econometric technique used when the necessary conditions for linear regression are not fully met. In other words, this is an extension of linear regression analysis, which can be used when outliers are present in the data since its predictions are robust enough against outliers, compared to linear regression (Zietz et al. 2008; Davino et al. 2013).

Table 2. Doornik–Hansen normality test results.

Variables	Joint Test (Chi2)
GE, Government Effectiveness	88.53 * (0.000)
FO, Financial Openness	127.00 * (0.000)
TO, Trade Openness	162.51 * (0.000)

Source: Prepared by the Authors via Stata v.17. (*) significant at 1% confidence level.

Quantile regression is first introduced as a robust regression technique that neglects the normal distribution of error terms, which is one of the classical assumptions in regression. Quantile regression differentially weights the distances between the predicted values obtained by the regression line and the observed values and then attempts to minimize the weighted distances (Buchinsky 1998). As such, the quantile regression method is particularly useful when conditional quantiles vary. Accordingly, with this method, the regression coefficients are determined based on the quantiles (John and Nduka 2009).

In the multiple linear regression model, the error term is assumed to be independent of the value of the variables, i.e., variances are homogeneous. In the quantile regression model, the error terms are allowed to vary, and there is no assumption about the variance structure. In this regard, the quantiles are stable against extreme values in the dependent variable. When the error term is not normally distributed, quantile regression estimators are much more efficient than multiple linear regression estimators. The quantile regression allows the determination of heteroscedasticity (Koenker and Hallock 2001; Koenker 2004; Koenker 2005).

3.2. Generalized Quantile Panel Regression

Essentially, panel data models are defined as estimating regression models using panel data. Therefore, all the assumptions and diagnostic tests that are in question for the regression models are also valid for this model. While the structure of the panel data model includes unit (i) and time (t) dimensions, these dimensions need to be expressed with indices. Panel data model with Y dependent variable and X independent variable can be expressed as follows:

$$Y_{it} = \alpha_{it} + \beta_{it} X_{it} + u_{it} \quad (1)$$

where Y_{it} and X_{it}: $i = 1, \ldots, N$ and $t = 1, \ldots, T$.

Here, u_{it} is the error term, α_{it} is the constant parameter, and β_{it} is the slope parameter. The number of parameters is $k = 2$ in Equation (1). To define and compare the distribution of a variable, the quantile function is used, while the relationship of a variable with its independent variables is estimated by quantile regression.

The panel regression model with $k = 1, 2, \ldots, K$ parameters can be shown as follows:

$$Y_{it} = \alpha_{it} + \sum_{k=2}^{K} \beta_{it} X_{it} + u_{it} \quad (2)$$

Empirically, quantile models allow the researcher to examine the effect of explanatory factors at different points in the dependent variable distribution. In this regard, the quantile models are preferred due to their many advantages. These models have become a common technique among panel quantile models with the spread of panel data models. Koenker and Bassett (1978) introduced this method, and afterward, it has been used by many researchers in the literature. Panel quantile models are models in which quantile structure and panel data can be considered together and allow the determination of the range of conditional quantiles while providing the opportunity to see the diversity of conditional variability (Koenker 2004, 2005).

3.3. Estimation Process

This study used the generalized quantile panel regression technique to perform the application.

In the model, the variables are used by taking their logarithms according to the e-base. There are two reasons for taking the natural logarithm of the variables: The first is to ensure that the parameters showing the linear relationship between the variables are statistically efficient estimators. The second is to smooth out the effect that may cause deviations from the mean depending on the generation of the variables over time (smoothing) (Dhir 2022). Mathematically,

$$\mathrm{GE} = f(\mathrm{TO}, \mathrm{FO}) \tag{3}$$

where GE, TO, and FO stand for government effectiveness, trade openness, and financial openness, respectively.

$$GE = \alpha(TO_{it})^{\propto_1}(FO_{it})^{\propto_2} \tag{4}$$

$$Ln(GE_{it}) = Ln(\alpha_0) + \alpha_1 Ln(TO_{it}) + \alpha_2 Ln(FO_{it}) \tag{5}$$

The available parameters represent the elasticity of government effectiveness to trade and financial openness. The main reason we use this approach is to analyze the sensitivity of the dependent variable to the independent variables. Beyond that, it also shows the intensity of this sensitivity. Hence, it is the most suitable method for the structure of the data and the subject being examined. In this context, the basic concepts of the generalized quantile panel regression and the features of this method are as follows.

The quantile panel regression techniques are diverse in the literature, and there are aspects where the generalized quantile regression method is superior when compared to others. This method is applied primarily by considering a non-additive fixed effect proposed by Powell (2016). The "non-additive fixed effect" defined here ensures that the error term emerging in the panel regression is inseparable, while also allowing one to have variations in the parameters (Powell 2013, 2016). Thus, empirical applications based on the generalized quantile regression method help to obtain more reliable and efficient quantile regression estimates (Hsiao 2003). Secondly, consistent estimates can be produced on small T-panels when this method is used. Lastly, this method is easy to implement (Powell 2020; Graham et al. 2018).

According to Waldmann (2018), the application of this method is generally appropriate under the following conditions, as given in Table 3.

Quantiles are used as a range of descriptive statistics. In this respect, quantiles are good at summarizing the "central tendency" of the data based on the median since the median is a good measure of the average for the cases where data are skewed. In other words, quantiles give valuable information about the variability of data and distribution with outliers. By comparing the quantile values, it is possible to determine whether the observation is in the bottom, middle 50%, or top. The distance between the quantiles is defined as "the interquartile range (IQR)", and this is used for interpreting the measure of variability based on the spread of the middle 50% of the data. In this context, the generalized quantile panel regression results are estimated with the assumption of the presence of skewed distributions in the data (David 2019).

Table 3. Conditions suitable for using quantile regression.

No.	Scope of Use Cases for Quantile Regression
1	*Identifying a case at the "boundary of probability"*: In our case, this type of question is analyzed by using selected countries' data on trade and financial openness to understand the relationship between these variables and the effectiveness of governments. In general, many research questions may not investigate the samples at the center of a distribution. Reliable empirical results for extreme quantities can only be produced if large datasets are at hand.
2	*Conditional distribution case with unknown distribution feature*: In such a case, the data seldom follow a particular distribution feature. However, this only matters if the bias changes the research findings and focuses on the overall conditional distribution. In case of doubt, applying quantile regression and comparing results across quantiles makes sense.
3	*Presence of many outliers in the conditional distribution*: It is a fact that the quantile regression approach is good at overcoming the outliers, which is due to its robustness. It should be noted that the outliers are influential only on the quantile curves, which are close to them.
4	*Presence of heteroscedasticity*: When the variance of variables depends on the covariates, then it is recommended to use quantile regression to catch such effects. It is a fact that most of the real-life datasets disturb homoscedasticity conditions. In such a situation, like other violations of the distributional assumptions, graphical analyses or normality tests can be applied to determine whether there is heteroscedasticity in the dataset.

Source: Adapted from Waldmann (2018).

4. Empirical Results

The analysis is executed by using Stata v.17. The generalized quantile panel regression analysis findings are summarized in Table 4, and the interpretation of the model is as follows.

Table 4. Generalized Quantile Panel Regression Results for Government Effectiveness as GE = *f* (TO, FO).

Independent Variables/Parameters	Quantiles (**)								
	0.10	**0.20**	**0.30**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**
Trade Openness (TO)-α_1	−0.0437 (−2.41) **	−0.0103 (−0.44)	0.0497 (1.53)	0.0666 (2.04) **	0.0586 (7.46) *	0.0261 (4.75) *	0.0054 (0.89)	−0.0141 (−3.07) *	−0.0283 (−5.87) *
Financial Openness (FO)-α_2	−3.5268 (−11.44) *	−3.0237 (−6.93) *	−1.9645 (−3.23) *	−1.2194 (−2.53) **	-0.7157 (−5.08) *	−0.4602 (−4.40) *	−0.3813 (−2.83) *	−0.3221 (−3.22) *	−0.1398 (−1.29)
Constant-α_0	0.2556793 (6.17) *	0.4081 (11.45) *	0.5465 (18.00) *	0.8127 (13.19) *	1.0642 (30.33) *	1.3625 (63.91) *	1.6003 (100.38) *	1.8197 (152.91) *	1.946 (141.39) *

Source: Estimated based on the QREGPD work of Baker (2016). (*) significant at 1% confidence interval; (**) significant at 5% confidence interval. (**) The robustness check is performed within the Stata code used for this analysis, i.e., generalized quantile regression (GQR).

In general, the financial openness (FO) coefficient is statistically significant and negative in all quantiles except the 0.9th. This is in line with the expectations. It is determined that countries with higher financial openness compared to the average (0.50th quantile) are more likely to have government effectiveness.

However, it is seen that different effects occur in different quantiles in the trade openness (TO) variable. It is further determined that this differentiation decreases the government effectiveness of the countries for the quantiles below the 0.50th, i.e., the average quantile. For the countries with government efficiency above the average, i.e., quantile values with the 0.40th, 0.50th, 0.60th, 0.80th, and 0.90th, except the 0.20th 0.30th, and 0.70th, the effect of the countries' trade openness (TO) is found to be positive and statistically significant. This implies that, beyond the 40th quantile, the effect of trade openness (TO) on government effectiveness (GE) is positive. The empirical results show

between the 0.40th and 0.90th quantiles a consistency with hypothetical expectations. On the other hand, the effect of TO on GE is statistically significant and negative in the 0.10th–0.20th quantiles. It is stated that countries with above-average government effectiveness, that is, with a well-established state bureaucracy and a historically strong state tradition, will further increase their activities in international integration, namely, financial and trade openness. In addition, the constant is statistically significant and increasingly positive in all quantiles.

5. Discussion

In this study, the validity of this situation, which is based on the expectation that the effect of trade and financial openness on governance will be positive and which is generally accepted in the literature, is analyzed for the selected countries. The main basis and rationale of this hypothesis is that there is a difference between developed and developing countries considering their level of trade and financial openness. This difference arises because trade and financial relations of countries are secured by institutional and legal contracts, trust relations, and decreasing transaction costs. In this context, with the developments in the trade and financial relations of the countries revealing the effects of reducing transaction costs, an efficient environment is formed in which the positive external economies of scale are supported.

The main findings of this study allow us to propose some policy recommendations to address the governance-related shortcomings of the 35 countries studied. This article aims to add value to previous research on the impact of trade and financial openness on government effectiveness by focusing on the selected countries. This pioneering study deals with the asymmetrical effect of institutional quality on countries by trade and financial openness, which affects the numerous efforts of national authorities to improve governance indices in recent years, using the generalized quantile panel regression method. The findings obtained in previous studies dealing with the effect of trade, financial openness, and the effectiveness of governments on economic growth are shown in Appendix C.

Overall, in this study, financial openness (FO) variables have a strong influence on government effectiveness (GE), where the quantiles with above-average values indicate significant positive influence. The sign of financial openness FO coefficient is negative and statistically significant in all quantiles except the 0.90th quantile. In general, as the financial openness FO increases, the main reason for the decrease in the government effectiveness GE is the government's intervention in the financial system. The finding of Nguyen and Bui (2021) on the effect of trade openness (TO) on economic growth in the period they covered in their research is also supported by the finding of our study. The information that the said relationship is negative in low and high quantile values and the positive coefficients in quantile values in the range of 0.30th–0.70th provide a finding that the relationship between the two variables is asymmetrical in the period under consideration.

Considering the size of the coefficients and whether they are statistically significant, this relationship may also show an increasing or decreasing trend. However, the effect of financial openness (FO) is expected to be negative, as financial openness and financial crises necessitate continuous public intervention. The findings in the study support this fact.

On the other hand, the trade openness (TO) variables show different structure for the observed countries. The TO coefficients in quantiles above the 0.40th all show statistically significant and positive results. This is in line with the expectations. The quantiles below average and specifically between the 0.10th and 0.20th are statistically significant and negative. Therefore, the strengthening of government effectiveness should be seen by the policymakers as a primary strategy to support the international trade integration process, focused not only on the entering of new markets through trade agreements but also on measures that enhance the legal, social, economic, and political environment to collaborate and gain more in the future. In this regard, this approach can be considered as a tool that can improve the decision-making process of governments by relying on key indicators and quality analytics. This is shown in connection to the "information pyramid" in Figure 2

below. The applications that define the data-generating process seen in Figure 2 and accordingly change the beneficiaries lead us to define the bureaucratic structure analytically. The bureaucratic structure that emerges due to data-generating processes turns into an analytical bureaucratic structure as seen in Figure 3.

As a country's financial openness (FO) increases, macroprudential policies may become ineffective on the consequences of fluctuations arising from external financial shocks, which will emerge from the credit channel. Therefore, besides these policies, institutional arrangements are necessary for the effective implementation and monitoring of policies. In addition to the existence of these regulations, one of the important determining features is the effectiveness of these policies. Therefore, as financial openness increases, government effectiveness should be expected to increase as well. When the results obtained by generalized quantile panel regression are evaluated within the scope of this study, depending on the 0.50 quantile value, the differentiation in the effect of the FO variable is revealed. From this point of view, increasing government effectiveness with financial integration is one of the main objectives in the implementation of macroprudential policies.

As the interaction of countries with international financial and commodity markets increases, many financial instruments, indicators, and also financialized commodity prices are encountered through financial and trade openness.

The increase in trade openness also necessitates the monitoring of a large number of goods and commodities. From this point of view, in today's economic conditions, the bureaucratic structure of governments should analyze a large number of data and utilize the advantage of international markets depending on the market conditions. Consequently, it is expected that the bureaucracy of the government will be in a structure that can use big data as a result of new developments in technology and that puts the results of these data analyses into practice very quickly. In this way, the transaction costs will be reduced which may cause disadvantages in the economy. The complex structure revealed by the openness of countries, both financially and in real terms, reveals the result of bureaucracy being more effective, i.e., government effectiveness.

From an economic point of view, the effectiveness here can be described as an effective bureaucracy as a structure that performs transactions at the lowest cost in return for this benefit maximization, which increases the social benefit for the determined purposes.

6. Conclusions

In this study, a novel approach was followed to understand the effect of trade openness and financial openness on government effectiveness by using a generalized panel quantile regression on the variables of 35 selected countries. The method of the study reduces the effect of information that will create extreme values in the time series representing the variables, as well as information that will cause tail effects. In addition, the technique we used gives effective results since the variables do not have a normal distribution feature. Although this approach has been commonly used in the literature, it can be accepted that this model is the first application in terms of the field we are analyzing.

Based on the study, it is recommended that policymakers in developed and developing economies focus on directing more resources and initiating greater advances toward creating an open financial and international trade environment. However, since developed countries may have a sound tradition in government effectiveness and may have benefited more from trade openness and financial openness, policymakers in developing countries should learn from their developed country counterparts when preparing their international financial and trade strategies. This is a critical success factor in implementing better economic and governance policies that can further enhance the impact of trade and financial openness on government effectiveness.

According to the findings reached in the empirical analysis, it can be stated that the financial openness of the countries in question is negative in both high and low quantiles, and it can be stated that countries may face costs in interventions or policies applied to financial openness. However, it can be concluded that although governments tend toward

financial openness, they do not take adequate measures in their policy implementations. This result is also supported by the empirical findings. Hence, this can be seen from the differentiation of the effects in the trade openness variable revealed in the analysis in low and high quantiles.

In this context, the necessity of governments to implement their policies according to the rules required by openness emerges, based on the openness strategy of the countries. The important point here is that the principles and rules brought by the OECD on institutionalization do not have an effect on the process of opening up the economy for the 35 selected countries. For this reason, it is necessary to negotiate new governance principles and rules between countries and to reconsider the new rules for the purposes of international regulatory institutions.

Our findings also show that moving away from international cooperation can have a negative effect. When moving to high and low quantile values, our findings support this situation. Increasing integration into the international economy provides us with information so that public resources can be used more effectively.

As emphasized in our study, this increase in efficiency creates a scope of the economy that also increases the effectiveness of the government by increasing cooperation, strengthening mutual institutional relations, reducing transaction costs, and revealing mutual trust. For this reason, when combined with the positive scale effects of trade openness and the positive effect of financially emerging field economies, the effectiveness of governments will increase. In this context, practices should be put into effect to internalize the positive effects here by the governments through better use of resources in the public sector. At this point, most importantly, it should be supported by measures aimed at strengthening the capital structures of companies in the private sector rather than transferring the resulting resource to the public sector through taxes.

Author Contributions: Conceptualization, L.N., T.S. and S.B.K.; methodology, S.B.K.; software, S.B.K.; validation, L.N., T.S. and S.B.K.; formal analysis, L.N., T.S. and S.B.K.; investigation, L.N., T.S. and S.B.K.; resources, L.N.; data curation, S.B.K.; writing—original draft preparation, L.N., T.S. and S.B.K.; writing—review and editing, L.N., T.S. and S.B.K.; visualization, L.N., T.S. and S.B.K.; supervision, L.N., T.S. and S.B.K.; project administration, L.N.; funding acquisition, L.N. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the University of Johannesburg and The APC was funded by the University of Johannesburg.

Institutional Review Board Statement: Not applicable as the study did not involve humans or animals.

Informed Consent Statement: Not applicable as the study did not involve humans or animals.

Data Availability Statement: Authors are happy to make data available on request.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Representative Sources of Global Government Effectiveness Indicators.

Source of Information	The Scope of Information
EIU—Economist Intelligence Unit Riskwire & Democracy Index	Quality of bureaucracy/institutional effectiveness Excessive bureaucracy/red tape
GCS—World Economic Forum Global Competitiveness Report	Quality of road infrastructure Quality of primary education
GWP—Gallup World Poll	Satisfaction with public transportation system Satisfaction with roads and highways Satisfaction with education system

Table A1. *Cont.*

Source of Information	The Scope of Information
IPD—Institutional Profiles Database	Coverage area: public school Coverage area: basic health services Coverage area: drinking water and sanitation Coverage area: electricity grid Coverage area: transport infrastructure Coverage area: maintenance and waste disposal
PRS—Political Risk Services International Country Risk Guide	Bureaucratic quality
WMO—Global Insight Business Conditions and Risk Indicators	Infrastructure disruption. This reflects the likelihood of disruption to and/or inadequacy of infrastructure for transport, including due to terrorism/insurgency, strikes, politically motivated shutdowns, natural disasters, infrastructure including (as relevant) roads, railways, airports, ports, and customs checkpoints. State failure. The risk that the state is unable to exclusively ensure law and order and the supply of basic goods such as food, water, infrastructure, and energy is unable to respond to or manage current or likely future emergencies, including natural disasters and financial or economic crises. Policy instability. The risk the government's broad policy framework shifts over the next year, making the business environment more challenging. This might include more onerous employment or environmental regulation and local content requirements. Import/export barriers, tariffs, or quotas; other protectionist measures; price controls or caps; more "political" control of monetary policy; or simply more direct intervention into the operations and decisions of private companies, etc.

Source: World Bank (2022).

Appendix B

Table A2. Selected Country List.

List of Countries			
1. Ireland 2. Slovakia 3. Portugal 4. Norway 5. Chile 6. Israel 7. Finland 8. Greece	9. Turkey 10. Australia 11. Brazil 12. Austria 13. Indonesia 14. Czech Republic 15. Sweden 16. Hungary 17. Denmark 18. South Africa	19. Italy 20. Republic of Korea 21. India 22. Canada 23. Belgium 24. Mexico 25. Spain 26. Poland 27. Singapore 28. Switzerland	29. United States 30. China: Mainland 31. Germany 32. The Netherlands 33. France 34. Japan 35. United Kingdom

Source: World Bank (2022).

Appendix C

Table A3. Findings of the reviewed sources.

Themes	Authors	Sample Countries	Data and Sample Period	Methods	Findings
Governance Effectiveness and Economic Growth	Alam et al. (2017)	81 countries	Panel data (1996, 1998, and 2000) and (2002–2011)	System Generalized Method of Moments	Generally, they find a statistically significant relationship between government effectiveness and economic growth, particularly among low- and high-income economies
	Georgiou (2015)	Europe (16 countries)	Panel data (2000–2013)	Panel EGLS (Cross-section SUR)	Governance efficiency has a positive impact on economic growth
	Yahyaoui et al. (2019)	African countries	Panel data (1996–2014)	Fixed-Effect Model (FE) or the Random-Effects Model (RE)	Good governance is a deterministic condition of the positive effect of aid on economic growth
Trade Openness and Economic Growth	Alam and Sumon (2020)	15 Asian countries	Panel data (1990–2017)	Panel Cointegration and Causality Approach	Positive impact of trade openness on economic growth. Bi-directional causal feedback between trade openness and economic growth in the short run
	Cevik et al. (2019)	Turkey	Time-series data (1950–2014)	A Rolling Frequency Domain Analysis	Evidence of bi-directional relationship between trade openness and economic growth. Economic growth impact of trade openness happens at shorter horizon (4.3 to 7.5 years) while feedback loop of economic growth on trade happens at longer horizon (7.5 to 13 years)
	Asada (2022)	Thailand	Time-series data (2000–2017)	ARDL Approach	Trade openness is positively associated with economic growth in Thailand
	Nguyen and Bui (2021)	Indonesia, Malaysia, Thailand, Singapore, Philippines, and Vietnam	Panel data (2004–2019)	Fixed-effect Panel Threshold Approach	Find that below a certain threshold, trade openness plays a critical role in stimulating economic growth. However, beyond a certain threshold, the impact of trade openness on economic growth is positive but lower

Table A3. *Cont.*

Themes	Authors	Sample Countries	Data and Sample Period	Methods	Findings
	Keho (2017)	Côte d'Ivoire	Panel data (1965–2014)	Autoregressive Distributed Lag Bounds Test of Cointegration Toda and Yamamoto Granger Causality Tests	The results show that trade openness positively affects economic growth in the short and long run. Furthermore, they reveal a positive and strong complementary relationship between trade openness and capital formation in promoting economic growth
Financial Openness and Economic Growth	Kouadio and Gakpa (2021)	Côte d'Ivoire	Panel data (1984–2018)	Dynamic Ordinary Least Squares (DOLS) and Fully Modified Ordinary Least Squares (FMOLS) Methods	Financial openness positively affects total factor productivity in Côte d'Ivoire
	Estrada et al. (2015)	108 countries	Panel dataset (1977–2011)	Generalized Method of Moments Estimation	The actual level of financial openness affects economic growth positively and significantly. This holds for two of the three measures of financial openness that their study use
	Agenor et al. (2018)	64 advanced and developing economies	Panel dataset (1990–2014)	Dynamic Fixed-Effect Model	Prudential measures targeted at dampening credit growth have a positive effect on economic growth, and financial development and financial openness appear to have a direct positive impact on economic growth
	Wei (2014)	Asia (17 countries in Asia)	Panel data (1980–2010)	De Facto Financial Openness Measurements	After employing both de jure and de facto indicators of financial openness, empirical results indicate that the de facto indicators are associated with the growth of Asian economies, but de jure indicator does not show statistically significant impact on growth across three methodologies
	Ibrahim and Tanimu (2016)	Nigeria	Time-series data (1980–2012)	Johansen Cointegration Model, Vector Error Correction model (VECM) and Granger Causality Test	The result of cointegration reveals that there exists a long-run relationship among the variables used in the model A negative relationship between real GDP and financial openness A positive relationship between real GDP and trade openness

References

Abreo, Carlos, Ricardo Bustillo, and Carlos Rodriguez. 2021. The role of institutional quality in the international trade of a Latin American country: Evidence from Colombian export performance. *Economic Structures* 10: 24. [CrossRef] [PubMed]

Acemoglu, Daron, and James Robinson. 2012. *Why Nations Fail: The Origins of Power, Prosperity and Poverty*. New York: Crown Publishers.

Acemoglu, Daron, Georgy Egorov, and Konstantin Sonin. 2010. Political selection and persistence of bad governments. *The Quarterly Journal of Economics* 125: 1511–75. [CrossRef]

Agenor, Pierre-Agenor, Leanardo Gambacorta, Enisse Kharroubi, and Luiz da Silver. 2018. The Effects of Prudential Regulation, Financial Development, Financial Openness on Economic Growth. Bank for International Settlement Working Paper No. 752. Available online: https://ssrn.com/abstract=3302300 (accessed on 20 October 2022).

Alam, Khandaker Jahangir, and Khairul Kabir Sumon. 2020. Causal Relationship between Trade Openness and Economic Growth: A Panel Data Analysis of Asian Countries. *International Journal of Economics and Financial Issues* 10: 118–26. [CrossRef]

Alam, Md Rafayet, Erick Kitenge, and Bizuayehu Getachew Bedane. 2017. Government Effectiveness and Economic Growth. *Economic Bulletin* 37: 222–27. Available online: www.accessecon.com/Pubs/EB/2017/Vomule37/EB-17-V37-I3-P21 (accessed on 5 September 2022).

Andrei, Levchenko. 2007. Institutional Quality and International Trade. *The Review of Economic Studies* 74: 791–819. [CrossRef]

Asada, Hidekatsu. 2022. Effects of Foreign Direct Investment, Trade Openness, and Human Capital Development on the Economic Growth of Thailand. *International Journal of Asian Business and Information Management* 13: 89. [CrossRef]

Ayaydin, Hasan, Aykut Karakaya, and Fahrettin Pala. 2018. Trade openness, financial openness, and financial development in Eurozone: Evidence from dynamic panel data. *Global Journal of Economics and Business Studies* T7: 1–17. Available online: https://dergipark.org.tr/en/pub/gumusgjebs/issue/42269/440461 (accessed on 3 October 2022).

Baker, Matthew. 2016. QREGPD: Stata module to perform Quantile Regression for Panel Data, Statistical Software Components S458157, Boston College Department of Economics. Available online: https://ideas.repec.org/c/boc/bocode/s458157.html (accessed on 4 September 2022).

Bandura, Witness. 2021. Financial openness, trade openness and financial development: Evidence from sub-Saharan Africa. *Development Southern Africa* 39: 947–59. [CrossRef]

Bilbao-Osorio, Benat, Soumitra Dutta, and Bruno Lanvin, eds. 2014. The Global Information Technology Report: Rewards and Risks of Big Data. In World Economic Forum: Instead. Available online: http://www3.weforum.org/docs/WEF_GlobalInformationTechnology_Report_2014.pdf (accessed on 8 May 2015).

Bozkus, Sezer, Hakan Kahyaoglu, and Atahirou Mahamane Lawali. 2020. Multifractal analysis of atmospheric carbon emissions and OECD industrial production index. *International Journal of Climate Change Strategies and Management* 12: 411–30. [CrossRef]

Brewer, Gene, Yujin Choi, and Richard Walker. 2007. Accountability, corruption and government effectiveness in Asia: An exploration of World Bank governance indicators. *International Public Management Review* 8: 204–25.

Buchinsky, Moshe. 1998. Recent Advences in Quantile Regression Models: A partical Guideline for Empirical Research. *The Journal of Human Resources* 33: 88–126. [CrossRef]

Cameron, David. 1978. The Expansion of the Public Economy: A Comparative Analysis. *American Political Science Review* 72: 1243–61. [CrossRef]

Cevik, Emrah I., Erdal Atukeren, and Turhan Korkmaz. 2019. Trade Openness and Economic Growth in Turkey: A Rolling Frequency Domain Analysis. *Economies* 7: 41. [CrossRef]

Chowdhury, Farzana, and David Audretsch. 2014. Institution as looting apparatus: Impact of gender equality and institutions on female entrepreneurship. *Eurasian Business Review* 4: 207–25. [CrossRef]

David, Matt. 2019. Fundamentals of Analysis. Web Books. Available online: https://dataschool.com/fundamentals-of-analysis (accessed on 20 October 2022).

Davino, Cristina, Marilena Furno, and Domenico Vistocco. 2013. *Quantile Regression: Theory and Applications*. Wiley Series in Probability and Statistics; Hoboken: John Wiley & Sons, vol. 988.

Dhir, Rajeev. 2022. Data Smoothing: Definition, Uses, and Methods. Investopedia. Available online: https://www.investopedia.com/terms/d/data-smoothing.asp (accessed on 19 October 2022).

Doornik, Jurgen A., and Henrik Hansen. 2008. An Omnibus Test for Univariate and Multivariate Normality. *Oxford Bulletin of Economics and Statistics* 70: 927–39. [CrossRef]

Estrada, Gemma, Donghyun Park, and Arief Ramayandi. 2015. Financial Development, Financial Openness, and Economic Growth. Asian Development Bank Economics Working Paper Series No. 442. SSRN 45p. Available online: https://ssrn.com/abstract=2707518 (accessed on 5 September 2022).

Fukuyama, Francis. 2013. What Is Governance? *Governance: An International Journal of Policy, Administration, and Institutions* 26: 347–68. [CrossRef]

Garcia-Sanchez, Isabel María, Beatriz Cuadrado-Ballesteros, and Jose-Valeriano Frias-Aceituno. 2013. Determinants of government effectiveness. *International Journal of Public Administration* 36: 567–77. [CrossRef]

Garcia-Sanchez, Isabel-Maria, Beatriz Cuadrado-Ballesteros, and Jose-Valeriano Frias-Aceituno. 2016. Does media freedom improve government effectiveness? A comparative cross-country analysis. *European Journal of Law and Economics* 42: 515–37. [CrossRef]

Georgiou, Miltiades N. 2015. Public Sector, Governance Effectiveness and Economic Growth. An Empirical Analysis. pp. 1–11. Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2570873 (accessed on 19 October 2022).
Graham, Bryan S., Jinyong Hahn, Alexandre Poirier, and James L. Powell. 2018. A Quantile Correlated Random Coefficients Panel Data Model. *Journal of Econometrics* 206: 305–35. [CrossRef]
Hsiao, Cheng. 2003. *Analysis of Panel Data*. New York: Cambridge University Press.
Ibrahim, Saifullahi Sani, and Nuruddeen Tanimu. 2016. The linkages between trade openness, financial openness and economic growth in Nigeria. *Sokoto Journal of the Social Sciences* 6: 383–93.
Institute of Directors (IoD). 1994. *King Report on Corporate Governance for South Africa*. Johannesburg: Institute of Directors. Available online: https://cdn.ymaws.com/www.iodsa.co.za/resource/collection/94445006-4F18-4335-B7FB-7F5A8B23FB3F/King_1_Report.pdf (accessed on 5 October 2022).
Institute of Directors (IoD). 2002. *King Report on Corporate Governance for South Africa: King Committee on Corporate Governance*. Johannesburg: Institute of Directors. Available online: https://cdn.ymaws.com/www.iodsa.co.za/resource/collection/94445006-4F18-4335-B7FB-7F5A8B23FB3F/IoDSA_King_II_web_version.pdf (accessed on 1 September 2022).
Institute of Directors (IoD). 2009. *King Report on Corporate Governance for South Africa*. Johannesburg: Institute of Directors. Available online: https://cdn.ymaws.com/www.iodsa.co.za/resource/collection/94445006-4F18-4335-B7FB-7F5A8B23FB3F/King_III_Report.pdf (accessed on 10 September 2022).
Institute of Directors (IoD). 2016. *King IV Report*. Johannesburg: Institute of Directors. Available online: https://www.iodsa.co.za/page/king-iv (accessed on 3 September 2022).
International Monetary Fund (IMF). 2021. IMF Data-International Financial Statistics. Available online: https://data.imf.org/?sk=4c514d48-b6ba-49ed-8ab9-52b0c1a0179b&sId=1409151240976 (accessed on 2 September 2022).
Jalilian, Hossein, Colin Kirkpatrick, and David Parker. 2007. The impact of regulation on economic growth in developing countries: A crosscountry analysis. *World Development* 35: 87–103. [CrossRef]
John, Onyedikachi O., and Ethelbert C. Nduka. 2009. Quantile Regression Analysis as a Robust Alternative to Ordinary Least Squares. *Scientia Africana* 8: 61–65.
Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2006. *Governance Matters VI: Aggregate and Individual Governance Indicators for 1996–2005*. World Bank Policy Research Paper No. 4280. Washington, DC: World Bank.
Keho, Yaya. 2017. The impact of trade openness on economic growth: The case of Cote d'Ivoire. *Cogent Economics & Finance* 5: 1332820. [CrossRef]
Klautzer, Lisa. 2013. Can Economic Openness Inspire Better Corporate Governance? An Exploration of the Link between Openness and Corporate Governance based on the Asian Experience. Doctoral thesis, The Pardee RAND Graduate School, Santa Monica, CA, USA. Available online: https://www.proquest.com/openview/cdf9e472c87ecc31adb4c8a9084d29fd/1?pq-origsite=gscholar&cbl=18750 (accessed on 12 October 2022).
Koenker, Roger. 2004. Quantile regression for longitudinal data. *Journal of Multivariate Analysis* 91: 74–89. [CrossRef]
Koenker, Roger. 2005. *Quantile Regression*. New York: Cambridge University Press.
Koenker, Roger, and Gilbert Bassett Jr. 1978. Regression Quantiles. *Econometrica* 46: 33–50. [CrossRef]
Koenker, Roger, and Kevin F. Hallock. 2001. Quantile Regression. *Journal of Economic Perspectives* 15: 143–56. [CrossRef]
Kouadio, Hugues Kouassi, and Landry Lewis Gakpa. 2021. Financial Openness and Economic Growth in Côte d'Ivoire: The Total Factor Productivity Channel. *International Journal of Financial Research* 12: 138–49. Available online: https://pdfs.semanticscholar.org/5dce/1f9af310c63e5e358cded4b6bef3bebb6fb5.pdf (accessed on 12 October 2022). [CrossRef]
Lee, Soo-Young, and Andrew B. Whitford. 2009. Government effectiveness in comparative perspective. *Journal of Comparative Policy Analysis* 11: 249–81. Available online: https://www.tandfonline.com/doi/abs/10.1080/13876980902888111 (accessed on 15 October 2022). [CrossRef]
Li, Shaomin, and Darryl P. Samsell. 2009. Why some countries trade more than others: The effect of the governance environment on trade flows. *Corporate Governance: An International Review* 17: 47–61. [CrossRef]
Liberati, Paolo. 2007. Trade Openness, Capital Openness and Government Size. *Journal of Public Policy* 27: 215–47. Available online: http://www.jstor.org/stable/40072021 (accessed on 20 October 2022). [CrossRef]
Montes, Gabriel Caldas, and P. Paschoal. 2016. Corruption: What are the effects on government effectiveness? Empirical evidence considering developed and developing countries. *Applied Economics Letters* 23: 146–50. Available online: https://www.tandfonline.com/doi/abs/10.1080/13504851.2015.1058900?journalCode=rael20 (accessed on 19 October 2022). [CrossRef]
Moynihan, Donald P., and Sanjay K. Pandey. 2004. Testing How Management Matters in an era of Government by Performance Management. *Journal of Public Administration Research and Theory* 15: 421–39. [CrossRef]
Nguyen, My-Linh Thi, and Toan Ngoc Bui. 2021. Trade Openness and Economic Growth: A Study on Asean-6. *Economies* 9: 113. [CrossRef]
Powell, David. 2013. *A New Framework for Estimation of Quantile Treatment Effects: Nonseparable Disturbance in the Presence of Covariates*. Working Paper. Santa Monica: RAND Corporation. Available online: http://www.rand.org/pubs/working_papers/WR824-1.html (accessed on 15 October 2022).
Powell, David. 2016. *Quantile Treatment Effects in the Presence of Covariates*. Working Paper. Santa Monica: RAND Corporation. Available online: https://works.bepress.com/david_powell/4/ (accessed on 12 October 2022).

Powell, David. 2020. Quantile Treatment Effects in the Presence of Covariates. *The Review of Economics and Statistics* 102: 994–1005. [CrossRef]

Rajan, Raghuram, and Luigi Zingales. 2003. The great reversals: The politics of financial development in the twentieth century. *Journal of Financial Economics* 69: 5–50. [CrossRef]

Rodrik, Dani. 1998. Why do More Open Economies Have Bigger Governments? *Journal of Political Economy* 106: 997–1032. [CrossRef]

Shahbaz, M., H. U. Rehman, and N. Amir. 2010. The Impact of Trade and Financial Openness on Government Size: A Case Study of Pakistan. *Journal of Quality and Technology Management* 1: 105–18. Available online: http://pu.edu.pk/images/journal/iqtm/PDF-FILES/paper-7-Volume_VI_Issue-1-June-2010.pdf (accessed on 3 September 2022).

The Worldwide Governance Indicators (WGI). n.d. Available online: https://info.worldbank.org/governance/wgi/ (accessed on 1 September 2022).

van der Merwe, Annamarie. 2020. The evolution of the stakeholder-inclusive approach in the King Reports. *Journal of Global Responsibility* 11: 139–46. [CrossRef]

Waldmann, Elisabeth. 2018. Quantile regression: A short story on how and why. *Statistical Modelling* 18: 203–18. Available online: https://d-nb.info/1209741377/34 (accessed on 12 October 2022). [CrossRef]

Wei, Hsinrong P. 2014. Does Financial Openness Affect Economic Growth in Asian Economies? A Case Study in Selected Asian Economies, 1980–2010. *Journal of Economics and Political Economy* 1: 254–301. Available online: http://hdl.handle.net/10419/105854 (accessed on 4 September 2022).

World Bank. 2022. Global Financial Development Development Report 2019/2020: Bank Regulation and Supervision a Decade after the Global Financial Crisis. Available online: https://www.worldbank.org/en/publication/gfdr/data/global-financial-development-database (accessed on 6 October 2022).

Yahyaoui, Ismahene, Hamdaoui Mekki, and Bouchoucha Najeh. 2019. Official Development Aid Effectiveness and Economic Growth in African Countries: The Role of the Governance. Available online: https://mpra.ub.uni-muenchen.de/95410/ (accessed on 5 September 2022).

Zietz, Joachim, Emily Norman Zietz, and G. Stacy Sirmans. 2008. Determinants of House Prices: A Quantile Regression Approach. *The Journal of Real Estate Finance and Economics* 37: 317–33. [CrossRef]