



Impact of Trade Openness on Economic Growth in Emerging Economies: A Panel Data Analysis

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ARTICLE INFO	ABSTRACT
<p>Article History: Received: August 02, 2021 Revised: September 29, 2021 Accepted: September 30, 2021 Available Online: September 30, 2021</p> <p>Keywords: Trade Openness Economic Growth Schooling Government Expenditure Land Panel Data Emerging Economies</p> <p>JEL Classification Codes: B27, F41, I25, I26, P24, Q24</p>	<p>The role of international trade in boosting economic growth is imperative in the era of globalization and trade liberalization. A trade openness policy can help stimulate economic growth mainly in two ways. Firstly, technology is transferred from developed countries to developing countries through imports. Secondly, the export promotion strategies facilitate the innovations and inventions promoting competition among the producers. In this way, research-intensive specialization culture is flourished in developing countries. This study aims at examining the effect of global trade orientation on growth in 23 emerging economies for the period 1995-2018. The panel data estimation approach including fixed effect and generalized method of moments (GMM) reveal a positive and statistically significant influence of trade openness on economic growth. The empirical results are robust to the various specifications, supporting the trade-led growth notion in the economies under consideration. The emerging economies can achieve higher growth rates through trade openness and export promotion strategies.</p> <p style="text-align: right;">© 2021 The Authors, Published by iRASD. This is an Open Access Article under the Creative Common Attribution Non-Commercial 4.0</p>

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1. Introduction

The outward-oriented trade policy means the trade policy that promotes trade by lowering tariffs quotas and other trade barriers. The role of international trade in boosting economic growth is imperative in this epoch of globalization and trade liberalization. The modern growth theories give powerful arguments about the imperative role of trade openness in promoting economic growth. (Romer, 1994) explains that the technology and innovations resulting from learning by doing and research can sustain a reasonable growth rate for the long run.

According to the classical point of view, trade openness stimulates economic growth in two ways. Firstly, the opening of an economy to international trade leads to the optimal utilization of resources. Secondly, the economy gets access to modern technologies and sophisticated production machinery. The modern school of thought is of the view that trade openness policy affects an economy in the long run through technological change. The hi-Tech imports from abroad bring new technology to the developing economies and the modern production techniques are shared. There is an encouragement for innovations and inventions due to competition among the producers. Trade openness propagates a research-intensive specialization culture in the economy, hence promoting economic growth (Almeida & Fernandes, 2008; Kiriyaama, 2012; Muhammad Atif Nawaz, Azam, & Bhatti, 2019).

Due to trade openness, the countries can gain by specializing in the production of goods and services. The production becomes more efficient, and the nations get benefit by exchanging

the different goods and services. This process of specialization and exchange leads to the production of higher quality goods at lower costs. So, the production is more efficient and diverse which provides better choices to a consumer at reasonable prices. Dismantling the trade barriers provides nations access to the large markets of the World. The minimization of restrictions in the services sector forms the basic infrastructure of an advanced economy, hence finance, telecommunications, transportation, education and another public services delivery improves. The competitive environment also induces businesses to make innovations in search of new techniques of production and better customer services. The recent developments in the field of high-quality medicine and modern computer technologies are flourished due to open markets and better export opportunities. The trade restrictions create less competent industries at the domestic level, higher costs, inferior quality, fewer choices and fewer innovations which result in a slower growth rate of an economy (Fazal, Bhatti, & Ahmad, 2019). The modern aspects of globalization and outward orientation started strengthening in the emerging market economies (EMEs) during the late 1990s. In this modern era, the economies of this region are more open to regional as well as world trade than ever in the past. The trade liberalization policy has a positive influence on the GDP growth of EMEs. It is an outcome of high-tech imported goods and enhancement of the market size for the exportable. However, the benefits of this outward-oriented trade policy apply in the aggregate sense. Individually, the domestic production structure and the degree of global market access can determine the gain or loss of an economy.

The East Asian countries have adopted the investment in Human capital as a key strategy of economic growth but this idea is still not very popular in emerging economies (Muhammad A Nawaz & Hassan, 2016; Shittu, Hassan, & Nawaz, 2018). Almost all the emerging countries have been using strict economic management and trade-distorting policies before the 1980s. After becoming the members of the World Trade Organization, the new era of the outward-oriented approach was started and the idea of free trade became popular. The developing countries gradually adopted the path of economic liberalization and free trade. The different trade-restrictive measures such as tariffs and quotas Started to decrease and trade-friendly policies flourished. The trade openness increased the average annual economic growth of emerging and developing economies (Sakyi, Villaverde, & Maza, 2015). The modern aspects of globalization and trade openness are strengthening in the emerging economies (Zhuang et al., 2021). Trade openness has a positive impact on the economic growth of emerging countries (Yang & Shafiq, 2020). It is an outcome of high-tech imported goods and enhancement of the market size for exportable (Shafiq, Hua, Bhatti, & Gillani, 2021). However, the benefits of trade liberalization and openness apply in aggregate. Individually, the countries may gain or lose, depending on the degree of market access. The impact of outward-oriented trade policy on GDP growth has been pondered in many studies by utilizing cross-country data settings using developed, emerging and developing economies. However, separate studies on emerging economies are rare. Although, all the emerging economics did not achieve very rapid growth rates like the Association of South-East Asian Nations (ASEAN). However, the contribution of openness to economic growth cannot be overlooked. Instead of time series or cross-section of countries, our study utilizes modern panel data techniques to explore the nexus between trade and growth.

2. Review of Literature

An extensive literature is available on the nexus between trade openness and economic growth. Generally, the impact of outward-oriented trade policy on growth is found to be positive. Dowrick (1994) examines the link between trade openness, output growth, and investment by using data from 1960 to 1980 for 74 economies. Using fixed at random effect estimation approaches, the researcher finds the positive and significant contribution of outward orientation to economic growth. Harrison (1996) uses explores the impact of trade openness on economic growth. She uses a variety of openness measures on different samples ranging from 1960-88 to 1978-87. The panel fixed effects estimation results indicate a positive association between trade openness and economic growth.

Rodriguez and Rodrik (2000) explain that the methodological problems in the different empirical studies lead to diverse findings. Baldwin and Sbergami (2000) find a robust non-linear relationship between trade openness and growth. They get a U-shaped relationship between ad-valorem tariffs and growth. Greenway, Greenaway, Morgan, and Wright (2002) use a sample of 74 developing countries to access the impact of trade liberalization policies on economic growth. The panel estimates provide mixed results. Gilbert (2004) uses the endogenous growth model to examine the effect of trade liberalization policies on growth in Sub Saharan Africa. The fixed

effect estimation technique of panel data estimations reveals that the open trade policy with good governance has a significantly positive impact on income. Wacziarg and Welch (2008) find that trade liberalization has, on average, robust positive effects on growth. Yanikkaya (2003) uses different new measures of trade intensity to examine the impact of outward-oriented trade policy on economic growth in OECD and non-OECD economies. The empirical results indicate that trade openness leads to growth

Rao and Singh (2008) use a panel cointegration co-integration test to investigate Association between trade liberalization and GDP growth for the selected East Asian economies. Empirical estimates reflect that trade openness contributes positively and significantly to steady-state economic growth. Solmaz, Reza, and Mehdieh (2010) study the relationship between trade openness and economic growth by using panel data. The data for the selected countries of the Middle East and North Africa (MENA) is collected over the period 1980 -2005. The authors find a significant long-term relationship between trade openness and economic growth. Hosseinpour, Zarra-Nezhad, Arman, and Salahmanesh (2019) use extreme bound analysis to find the positive influence of trade indices on economic growth for the panel data of 94 countries. Sakyi et al. (2015) empirically examined the trade-growth nexus in developing countries. The empirical results suggest a bi-directional relationship between trade openness and growth in the long run.

Raza, Sbia, Shahbaz, and Al Rousan (2018) empirically analyzed the trade-growth nexus in the United Arab Emirates to conclude that there is a positive association between trade and growth in the long run. Baria, Alib, Ahmadc, and Nawazd (2020) examined the impact of trade liberalization on economic growth taking macroeconomic volatility into account (Hussain, Khalil, & Nawaz, 2013). The empirical results confirm that trade openness has a positive and significant impact on income per capita. In addition, the more liberalized economies proved to be less volatile than the less liberalized economies in terms of trade. Raghutla (2020) utilized panel data on emerging economies for the period 1993-2016 to study the impact of trade openness on economic growth. The empirical results suggested that trade openness has a significant role in stimulating economic growth in the emerging market economies.

3. Empirical Methodology and Data

A general econometric model can be written as;

$$Y_{it} = \beta_0 + \beta_1 (K_{it}) + \beta_2 (SECY_{it}) + \beta_3 (GOV) + \beta_4 (L) + \beta_5 (POP_{it}) + \beta_6 (OPEN_{it}) + f_i + e_{it}$$

Where Y_{it} is the growth rate of real GDP used as a dependent variable. The notation K represents physical capital represented by gross fixed capital formation. The years of schooling at secondary (SECY), government expenditure (GOV), arable land (L), and population growth (POP) are the other control variables. The government expenditure variable is also considered as a regressor to incorporate the impact of government policies. Human capital is an important factor affecting growth. The average schooling years at the secondary level are included as a representation of human capital. The population is also considered as a control variable because a reasonable level of population of an economy provides labor force and also helps creating market demand. Trade openness (OPEN) is the core variable which is merchandised exports plus imports as a percentage of GDP. The outward-oriented trade policy is reflected by the share of total exports and imports in GDP. There is no completely agreeable particular measure of trade openness. General indicators incorporating trade volumes are important reflections of the trade openness of a country. The notation f_i represents the country-specific effects and e_{it} is the error term of the model.

We employ two approaches for estimation. Firstly, fixed effect method is used for estimation. The fixed effect approach has the advantage of controlling for country-specific characteristics. Secondly, we use GMM method developed by Arellano and Bond (1991) for the estimation of dynamic panel data. The dynamic panel data GMM approach has the advantage of controlling for the endogeneity problem due to the presence of GDP in the trade openness indices.

We selected 23 EMEs for the empirical analysis including, Argentina, Bangladesh, Brazil, Chile, China, Czech Republic, Greece, Hungary, India, Indonesia, Malaysia, Mexico, Pakistan, Philippines, Peru, Poland, Romania, Russia, South Africa, Thailand, Turkey, Ukraine, Venezuela. The data on GDP growth and gross fixed capital formation belongs to the World Development

Indicators (WDI) by World Bank. The data on trade openness and other control variables comprising years of secondary schooling, government expenditure, arable land and population growth are also obtained from WDI.

4. Empirical Results

In table 1, summary statistics with mean, standard deviation, maximum and minimum values of all series are presented.

Table 1: Summary Statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Y	552	3.7081	4.1777	-14.7585	18.2866
K	552	23.112	6.1873	11.0736	45.6899
SECY	552	6.3297	1.0153	4	8
GOV	552	18.4332	7.2322	13.201	46.2021
L	552	10.2330	5.1121	7	13.490
POP	552	0.8916	0.8973	-1.8306	2.8702
OPEN	552	68.2726	40.0972	15.6356	220.407

Table 2 demonstrates the empirical results by using the fixed effect estimation method. The fixed effect approach has the advantage of controlling for country-specific characteristics. The empirical estimation reveals a significantly positive correlation between capital formation and GDP growth. The t statistics show that the variable is significant at the 1% level of significance. After the trade liberalization reforms, the share of manufactured exports has relatively grown up in the EMEs. The manufactured exports are relatively more capital intensive than the primary goods and raw materials. So, capital is a strongly significant variable in the analysis.

The population forms the domestic and worldwide markets and also facilitates the provision of labor force to the diverse sectors of an economy. However, higher population pressure leads to hampering economic growth especially due to the burden of unskilled and dependent inhabitants. In the fixed effect estimation, population growth has a negative impact on GDP growth. The years of secondary education and land are statistically insignificant.

Table 2: Fixed Effect Estimation

Variable	Coefficient	Standard Errors	t-Statistics	Probability value
K	0.2553*	0.0456	5.59	0.0000
SECY	0.4627	0.6701	0.68	0.490
GOV	0.2649*	0.0544	4.87	0.011
L	0.2027	0.1958	1.035	0.594
POP	-1.1769**	0.5432	-2.17	0.031
OPEN	0.0336*	0.0117	2.87	0.004
Constant	0.3834	4.3367	0.09	0.930
Countries	23	Observations	548	
F-stat	2.82	Prob>F	0.000	

Note: Fixed-effects (within) regression is used for estimation. *, ** and *** show the significance of a variable at 1%, 5% and 10% level respectively. F-statistics represent fixed effects testing.

The trade openness measure is positive and significant at 5% level. The coefficient on trade openness is 0.036 which implies that a 1% increase in trade openness leads to an increase GDP growth by nearly 3%. The results are confirmed by Harrison (1996); Raza et al. (2018); Solmaz et al. (2010); Yanikkaya (2003) and many others. Trade openness can play a central role in economic growth through the advancement of technology and specialization in production. The producers, especially in the developing countries get benefit from the trade liberalization regime. The growth-promoting role of trade openness can be explained by the import liberalization and export promotion policies. Firstly, import liberalization facilitates the import of advanced machinery and the transfer of technology from developing countries the developing ones. On the other hand, export promotion policies innovation competition among the producers.

Table 3: GMM Estimates

Variable	Coefficients	Standard Errors	t-Statistics	Probability Values
Y(-1)	0.1399*	0.0479	2.92	0.003
K	0.3711*	0.0700	5.30	0.000
SECY	0.8116	0.9512	0.85	0.394
GOV	0.4769	0.1273	3.75	0.000
L	0.2008	0.1958	1.03	0.305
POP	-2.7847	0.7976	-3.49	0.000
OPEN	0.0929*	0.0229	4.06	0.000
Constant	15.6176	12.9604	1.21	0.208
Countries	23	Observations	548	
Wald Chi Sq.	97.75	Probability (F-Statistics)	0.000	

Note: Arellano-Bond dynamic panel-data approach is used for estimation. *, ** and *** show the significance of a variable at 1%, 5% and 10% level respectively.

Table 3 shows the empirical results by using Arellano-Bond dynamic panel-data GMM technique. The GMM method has the advantage of controlling the endogeneity problem arising from the presence of GDP in the trade openness indices. The empirical results exhibit a positive and significant effect of physical capital on economic growth because the share of capital-intensive exports is rapidly increasing in emerging economies. The years of secondary schooling, land and population remain statistically insignificant.

The indicator of trade openness is found to be positive and strongly significant at a 1% level of significance. The trade openness coefficient is found to be 0.0929 suggesting that a 1% increase in trade openness causes an increase in GDP growth by nearly 9.29%. Similar results were obtained by Harrison (1996); Raza et al. (2018); Yanikkaya (2003) and many others. Trade openness stimulates economic growth through the import of advanced and sophisticated techniques of production in the EMEs. By the import of modern machinery for production, technology is shared with the EMEs. The export promotion strategies also encourage innovations and a competitive environment among the producers. The coefficient of trade openness is significant but small, which indicates that the impact is beneficial but still a minute. This is due to the structural bottlenecks, like fragile governance, weak institutional quality, poor infrastructure, low human capital and reluctance to enter the regional and global trade appropriately.

5. Conclusion

This paper investigates the effect of trade openness on economic growth with a special focus on emerging economies. The fixed effect and GMM estimation techniques suggest a significantly positive impact of trade openness on economic growth in EMEs. However, the impact is still not much prominent due to the structural bottlenecks and improper economic governance. The findings are in line with a bulk of literature exploring the positive impact of trade on growth in the different countries and regions of the world. Through import liberalization, advanced production technology is transferred to the developing states from the developed nations. The export promotion also plays its role in boosting up innovations in a competitive environment. The EMEs have been gradually moving towards free trade regime since the 1980s. The different trade-distorting measures are eliminated to a great extent under the flag of World trade organization. This modern outward-oriented approach is not only beneficial for the individual countries but immensely vital for the entire region. The emerging economies are the labor abundant countries that can provide a basis for comparative advantage in the global markets. The advantage of abundant labor can be taken by investing in people and providing them knowledge, skills and training. The emerging countries have been able to achieve impressive growth rates for two decades. There is a great potential for higher growth and poverty reduction if the benefits of free trade are exploited by pro-market policies.

The high growth rates can be achieved by creating a favorable environment for global and regional trade. However, to fully realize the paybacks of trade liberalization, domestic reforms and capacity building are a required course of action for the developing economies. The proper export promotion strategies including tax rebates should be utilized to incentivize the exporters. Product diversification, good governance and regional harmony can also be very useful to reap the benefits of free trade. The improved quality of labor through investment in

human capital with a focus on research and development (R&D) is strongly recommended for the sustainable economic growth of the region. The emerging economies can achieve higher growth rates through trade openness and export promotion policies.

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