An Analytical Study on the Impact of Trade Liberalization on the Economic Development

Hualei Chen[1, *], Shuilan Wang[2], Yixian Lin[3], Yuzhe Jing[4], Yuxiu Wei[3], Zijie Pan[3]

[1]Cheongju University, Cheongju, North Chungcheong, 28496, South Korea
[2]School of Foreign Language and International Business,
Shenzhen, Guangdong, 518055, China
[3]Belarusian State University, Minsk, Minsk, 220030, Belarus
[4]Kyungil University, Daegu Metropolitan, 431060, South Korea
*Corresponding author's e-mail: 1078166343@qq.com

Abstract. This research delves into the influence of trade liberalization on the economic progression within a sample of five economies emerging in the market, spanning. Using panel estimation strategies, the study validates a sustained connection among trade liberalization, economic advancement, financial evolution, inflation, workforce, and technology over the long term. Notably, the outcomes of long-term elasticities highlight the significant favorable influence of trade liberalization on economic expansion. Moreover, diverse panel non-causality examinations reveal discern a two-way causality existing between economic development and inflation, along with a singular causality connection from economic expansion to both trade liberalization and financial growth in the brief term. Ultimately, the findings underscore the pivotal role of trade liberalization in fostering economic development and development across these five emerging market economies.

Keywords: Network Economic Platforms, Big Data Analysis, Efficiency in Resource Allocation, Customer Mining, Growth Economy

1   Introduction

Trade liberalization's role in economic development is a key focus in international trade research, highlighting its benefits like smoother transactions and job creation. Neoclassical economists view trade as essential for economic growth, noting a strong correlation with development. Emerging markets, especially BRICS nations, are pivotal in driving global demand and production, aiming to become leading economies by 2050 [1][2]. Recent studies by Raghutla [3], Fetahi [4], and Trejos [5] [6] confirm trade liberalization's positive impact on economic growth across various regions, emphasizing the importance of factors like financial development and technology [7]. This research aims to fill gaps in understanding trade liberalization's effects on economic development, focusing on BRICS nations from 1993 to 2016 using panel econometric techniques to analyze the relationship between trade liberalization and economic growth [8]. The findings are crucial for policymakers, highlighting the significance of trade

liberalization, labor force, and technology in sustaining economic development in emerging markets [9].

2   Related Work

Nations have scaled up their industrial sectors to cater to the increasing demands for output, integrating advanced technologies to boost production levels. The role of international trade as a catalyst for economic growth is undeniable. Awokuse [10] identified a notable positive influence in transitional nations such as Bulgaria and Poland, which supports the theories of growth-led export, export-led growth, and import-led growth. Similar outcomes were observed by Al Mamun et al. [11] in the context of Bangladesh. Erfani [12] demonstrated that a surge in exports propelled economic growth in developing nations between 1965 and 1995. Vohra [13] found that imports had a favorable impact on the economic development of India, Thailand, and the Philippines between 1974 and 1993. Shan et al. [14] verified a two-way causality between exports and economic advancement in the U.S. from 1981 to 1997. Sultan et al. [15] confirmed the influence of exports and domestic investments on the economic growth of India from 1970-2008. Sharma et al. discovered an absence of a long-term correlation between exports and economic growth in India from 1970 to 2001. Awokuse highlighted a two-directional causality between economic growth and imports in Colombia, Argentina, and Peru. Hatemi-J and Awokuse identified a reciprocal causality between economic growth and exports in Japan. Çetintaş and Barışık observed a bidirectional causality between exports and imports and a unidirectional causality from economic growth to exports in 13 transitional economies from 1995 to 2006. In contrast, Tang and Kumari and Malhotra reported a lack of a lasting connection between GDP, exports, and imports in China and India, respectively. Pazim also noted the absence of a significant link in three countries. On the flip side, Ummall and Trivedi reported sustained interactions in India. Andersen underscored the beneficial effects of international trade on economic expansion.

3   Econometric Methodology and Data

3.1   Analytical Model

In assessing the impact of trade liberalization on economic growth, the author [15] employed a fundamental production function (Figure 1). This model incorporated not only traditional inputs like labor and capital but also included trade liberalization and the sources of exports and imports in the production process. The analysis was based on the foundational neoclassical single-sector aggregate production function, which considered labor, financial development (representing capital), trade liberalization, price stability, and technological progress as distinct contributing elements.

$$Y_{it} = f(\text{TO}_{it}, \text{FD}_{it}, \text{INF}_{it}, \text{LBR}_{it}, \text{TECH}_{it}) \tag{1}$$

The subscript 'i' represents the country while 't' signifies the time frame in question. The researcher utilized GDP per capita in unwavering 2010 US dollars was employed by the author to gauge economic development (Y).
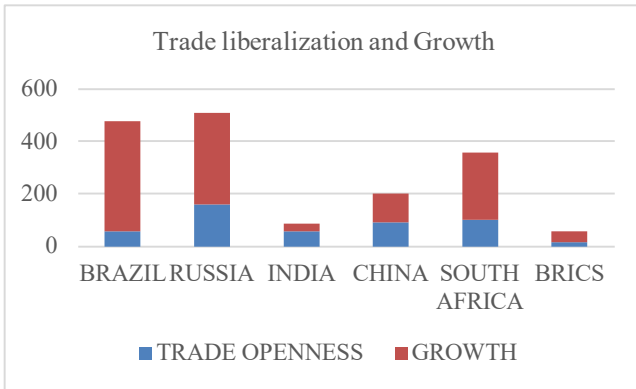

Fig. 1. Proportion of chosen indicators across each nation.

3.2   Variable Summary Statistics Overview.

Figure 2 provides an aggregate of the statistical data from five burgeoning market economies. Significant variations were observed in these statistics across different nations.
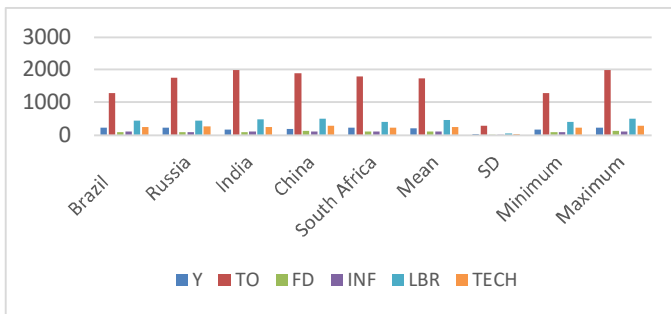

Fig. 2. Statistical Overview of Developing Market Economies

In Figure 2, the variables are defined as follows: Per capita GDP in fixed 2010 US dollars; trade liberalization (TO), depicted as a proportion of GDP; financial progression (FD), likewise shown as a GDP percentage; inflation (INF), valued in stable 2010 US dollars; the complete workforce (LBR) present in the market; and technological advancement (TECH), quantified by the aggregate patent applications submitted by both domestic and international applicants.

4 Experiment and Analysis

In the subsequent section, we introduce suitable econometric methodologies and apply these techniques to the sample economies.

4.1 Variable Integration Levels

The first step in the empirical investigation is to ascertain the integration order for each of the chosen variables. This is crucial for selecting a suitable econometric models and fulfilling the research goals. Prior to commencing the empirical analysis, it was ensured that none of the selected variables exhibited an integrated order of two, denoted as I(2), to avoid obtaining invalid or spurious results. To assess this, t The Levin-Lin-Chu unit root examination was utilized, which requires the identification of appropriate lag lengths, chosen in accordance with the Schwartz information criterion. Table 1 displays the outcomes of the panel unit root tests. The conclusions drawn from the Levin-Lin-Chu unit root examination suggest that variables such as economic development, trade liberalization, financial innovation, inflation, workforce, and technological advancement all align significantly with the null hypothesis suggesting a lack of stationarity. Yet, when the analysis is performed on the first differenced data, the evidence strongly contradicts the null hypothesis of non-stationarity for economic development, trade liberalization, financial improvement, inflation, labor force, and technological progress at a 1% significance threshold. Hence, these examinations indicate that all the variables under study become stationary when differenced once. Given this stabilization at first differences, or an I(1) integration level, for all considered variables, there's an implied likelihood of a durable interconnection among economic development, trade liberalization, financial advancement, inflation, the workforce, and technology. This possibility is set to be further explored in the following segment.

Table 1. Panel unit root tests results

Variable	Level		First difference	
	Statistic	p	Statistic	p
Y0	.26	.5	−3.6*	.00
FD	−1.0	.2	−6.6*	.00
TO	−1.0	.1	−5.9*	.00
LBR	2.5	1.1	−4.2*	.00
INF	20.7	1.0	−91.8*	.00
TECH	−1.0	0.2	−8.4*	.00

4.2 Long-term Equilibrium Dynamics.

The initial stage of the analysis confirmed that each chosen indicator follows a first-order integration. Following this, the study utilized the Johansen-Fisher panel cointegration technique to ascertain the presence of a persistent equilibrium relationship among the variables. The determination of the appropriate lag length for this analysis

was guided by the Schwartz information criterion, with a maximum of four lags. The findings from the Johansen-Fisher panel cointegration evaluation are presented in Figure 3. The data from the research indicate a durable equilibrium in the interactions between the indicators. More specifically, the evidence points to a long-term cointegrated relationship concerning economic growth with factors including trade liberalization (TO), financial development (FD), inflation (INF), size of the labor force (LBR), and technological advancement (TECH). In summary, the research concludes that a significant and prolonged equilibrium relationship is evident among the indicators in the context of the five emerging market economies.
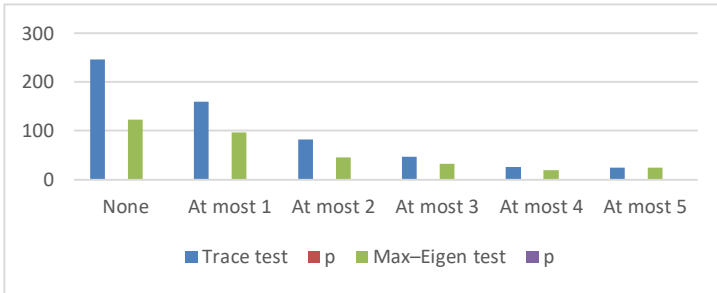

Fig. 3. Johansen–Fisher panel cointegration test

5   Conclusion

Driven by internal and overseas demand, BRICS nations (Brazil, Russia, India, China, South Africa) have increased their global market production since 1991, significantly contributing to global economic output. This surge in international trade activities has been a key factor in their remarkable economic development. For example, their exports and imports have notably risen, with their share of global GDP reaching 3.6% by 2014.

This research focuses on evaluating the impact of trade liberalization on economic growth within these emerging markets. The findings reveal a positive relationship between economic development, trade liberalization, financial progress, inflation rates, workforce, and technological advancement. Notably, trade liberalization, alongside financial and technological progress, plays a significant role in fostering economic growth. A reciprocal causal link was found between economic development and inflation rates, with unilateral causality from economic growth to financial improvement and trade liberalization.

The study suggests that to further enhance economic expansion, policymakers should implement growth-oriented strategies, such as increasing capital in the industrial sector and offering tax incentives to encourage both local and international investments. These measures can stimulate industrial development, promoting trade liberalization and accelerating economic progress, thereby supporting the sustained economic advancement of the BRICS nations.

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