

査読論文

Impact of Trade Openness on Economic Growth: Evidences from BIMSTEC Countries

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Abstract

This study is an empirical exploration to investigate the effect of trade openness on economic growth, with focus on the member countries of “Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation” (BIMSTEC). Though trade-growth tie has long been debated, focusing on BIMSTEC to reassess this relationship at this moment can be largely attributed to (i) new initiatives of India to tackle regional influence of China and its allies in this region, (ii) post-embargo openness in Myanmar, and (iii) recent negotiation to instigate a Free Trade Agreement (FTA). An unbalanced panel covering the period of 1991–2016 for the member states of World Bank (WB) has been constructed using data from World Development Indicators (WDI) Database, to run Fixed Effects models for regression estimations with robust standard errors clustered at the country level. The results show that trade openness may not be advantageous for the BIMSTEC countries, if not complemented with domestic reforms to decrease the cost of doing business. Infant industry argument may still be a very much valid argument in the context of smaller BIMSTEC countries, hence these countries should be particularly cautious about the FTA aftermaths. Moreover, factors like technical and advanced education, high value-added exports, and non-exploitative foreign direct investment inducing knowledge accumulation have important implications to achieve desired benefits of regional openness.

Keywords

Trade Openness, Free Trade Agreement, Infant industry, Middle county trap

JEL Classifications

F14, F15, F43

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1. Introduction

1.1 Background

After World War II, many developing countries adopted ‘import substitution’ policy and started patronizing their own manufacturing sectors by various means. However, within a few decades, they realized the drawbacks of this strategy. Additional persuasion from international organizations such as the World Trade Organization (WTO) and from economists to take cross-border trade as a pre-requisite for further productivity growth, technology transfer, and increasing returns to scale and specialization convinced (often, forced) the developing countries to begin liberalization of their trade regime in the early and mid-1980s.

Later, the loopholes of this openness turned out as ‘curse’ for some of these developing countries. Some economists also suggested that success stories of trade reforms were not as per expectation. Young (1991) and Redding (1999) observed that a country’s effort to specialize in areas with limited opportunities for further technological advancement and productivity growth might impede its long-run growth if trade liberalization is simultaneously attempted. Moreover, less-developed countries might have deficiency in social capability to embrace technologies developed in more advanced countries, due to technological or financial constraints. Singh (2010) showed that it had not been easy to differentiate between the impact of trade policies and that of other associated macroeconomic policies, making it difficult to interpret the correlations evident between trade strategies and economic growth.

Altogether, it is apparent that there is no consensus about the impact of trade openness on economic growth, and policy makers should carefully negotiate on further trade openness in regional and international cooperation.

1.2 Recent trends of economic growth:

[Figures and graphs in this section have been prepared based on data from World Development Indicators, World Bank (accessed on 22 December 2017).]

Let us now have a look at the global trend of trade volume as percentage of GDP and annual per capita GDP growth.

As we understand from Figure-1, the volume of world merchandise trade as percentage of GDP has steadily grown since 1990s till 2011, with some cyclical fluctuations including Asian financial crisis in 1997, and bankruptcy of Lehman Brothers in 2008. After 2011, the

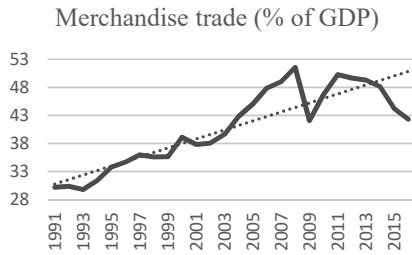


Figure-1: Merchandise trade as % of GDP, Global. 1991-2016

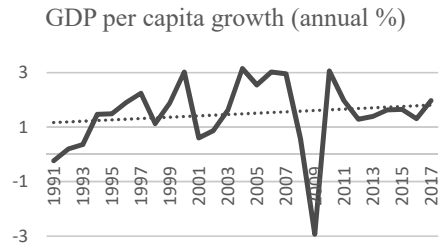


Figure-2: Annual % growth of GDP per capita, Global. 1991-2016

trend has been downward. Trend for the annual per capita GDP growth is similar to that of the merchandise trade to a considerable extent. Altogether, the indication is clear that per capita GDP of the world is growing simultaneously with the value of world trade since 1991, though cause-and-effect relationship cannot be ascertained merely from such demonstration.

Discussion on this nexus has also become important for BIMSTEC (Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation) countries – Bangladesh, India, Myanmar, Sri Lanka, Thailand, Nepal, and Bhutan –as they are being termed as the next economic powerhouses of Asia. The main objective of BIMSTEC was technical collaboration to enhance regional economic growth, though BIMSTEC has started negotiating its first FTA in July 2018. These countries have got a common trend of growing trade-to-GDP ratio in the last two-and-half decades, depicting a clear challenge of taking their economic growth to the next level in a more inclusive way.

It is evident from these graphs that growth trends of GDP per capita in BIMSTEC region faced tremendous shocks during the Asian financial crisis in 1997 and the global financial crisis ignited by bankruptcy of Lehman Brothers in 2008, but the recovery was

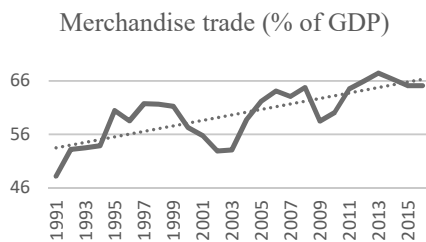


Figure-3: Merchandise trade as % of GDP, BIMSTEC. 1991-2016

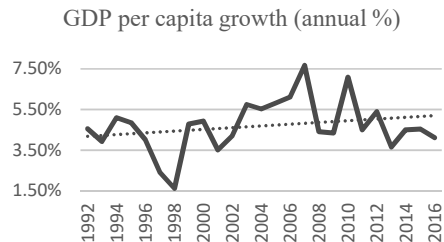


Figure-4: Annual % growth of GDP per capita, BIMSTEC. 1992-2016

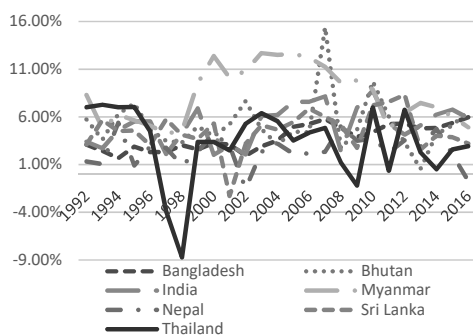


Figure-5: Annual % growth of GDP per capita, BIMSTEC, 1992–2016

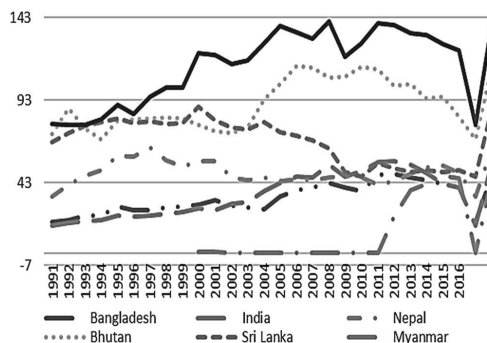


Figure-6: Merchandise trade as % of GDP, BIMSTEC, 1991–2016

not difficult. In the last two and half decades, trendlines of both merchandise trade and per capita GDP growth have mostly been positive and upward moving. However, since 2010, though the trade value as percentage of GDP is increasing, the growth in GDP per capita is declining.

Given this scenario, this study examines the extent of the impact of trade openness on economic growth and observes how this relationship differs across countries. Formulating policy suggestions for various stakeholders of the BIMSTEC region and identifying points of precautions, particularly for the least-developed countries, is also a priority.

The rest of the paper is organized as follows. Section 2 surveys the previous empirical evidences, Section 3 discusses the contemporary importance of BIMSTEC, and Section 4 describes the data and methodology. Section 5 discusses the empirical results based on econometric tests, followed by the conclusion in Section 6.

2. Literature Review

2.1 Trade and Economic Growth:

From theoretical viewpoints, both trade openness and trade restrictions may have diverse and uncertain effects on economic growth. Trade openness enables countries to achieve economic growth by taking advantage of economies of scale in bigger cross-border markets and producing according to comparative advantage. In contrast, trade restrictions can help protect infant and unprepared domestic industries from international competition, particularly during the early stages of industrialization. These opposing evidences make a simplified conclusion more difficult to reach.

Among other reasons for such inconclusive results, one significant issue is that

different studies use different proxies for trade openness and rely on different methodologies. Greenaway et al. (2002) provided evidences that misspecification and heterogeneity of liberalization indices can be considered responsible, though not to the full extent, for such inconclusiveness of the research outcomes. They used a dynamic panel model and three dissimilar indicators of liberalization to conclude that liberalization influences economic growth with a lag. This study also suggested a J-curve effect of trade liberalization, whereby growth at first falls and then increases.

Yet, other reasons of inconclusive results may include the changing magnitude of impact of the accompanying policies, which can hardly be captured by linear regression models (Winters, 2004).

Most empirical studies based on cross-country regressions suggested a significant growth promoting effect of trade openness, with critic for poor data quality and inadequate control of endogeneity (Edwards, 1993). Using different measures of trade openness (trade volumes and trade restrictions), Yanikkaya (2003) found strong evidences in support of the positive relationship between trade and growth through channels like technology transfers, scale economies and comparative advantage. However, trade barriers (import duties, export taxes, taxes on international trade) were, in some instances, associated with growth, especially for developing countries. The other authors also acknowledged the limitations of trade barrier measures and the fact that interpretation of protection provided by tariffs was considerably difficult. Dollar and Kraay (2004) attempted to assess the impact of globalization on economic growth and within-country inequality by analyzing the growth rates in the 1980s and the 1990s for roughly 100 countries, and observed that the countries liberalizing their trade regimes in the post-1980 period were way different from the rest of the developing world in terms of the extent of tariff reduction (a 22 point reduction compared to 10 points) and increasing trade volume over the past 20 years (an increase from 16% to 32% of GDP, versus a decline from 60% of GDP to 49% of GDP). They concluded that the change in trade volume had a positive and significant impact on growth.

Wacziarg and Welch (2008) constructed a new data set of trade liberalization dates to extend the study of Sachs and Warner (1995) assessing the relationship between trade openness and economic growth and covered the period of 1950-98. Using the fixed effect regression model, they concluded that countries that liberalized their trade regimes were able to score 1.5 percentage points higher yearly growth rates than before, though roughly half of the countries experienced zero or negative changes after liberalization. Factors influencing this difference in post-liberalization growth include the institutional

environment of the countries, the extent of political turmoil, the scope and depth of economic reforms, and the characteristics of concurrent macroeconomic policies. This finding had also been true for the relationship between openness and physical capital accumulation, with an almost similar magnitude. They also reported an increase in the real level of openness following trade liberalization.

Using the instrumental variable threshold regressions approach of Caner and Hansen (2004), Kim (2011) examined whether the contribution of trade to long-run economic growth was subject to the level of economic development, and observed strong beneficial effects of trade openness on growth and real income for the developed countries but surprisingly negative effects for the developing countries. He also found that the association of trade to growth performance worked through both capital accumulation and productivity growth channels, depending on the level of inflation and financial development.

Interestingly, earlier scholars often criticized cross-country analysis for assessing the relationship between trade and growth. Edward (1993) observed that the basic theoretical models quite often failed to grab the complications that each individual country faces in real economy and therefore, might suffer from severe misunderstandings. For instance, countries in Eastern Europe had to open their trade and economy to comply with the conditions of EU membership, but this did not result in economic growth for these countries. Instead, in the short run, the countries became widely open while the economic growth slowed down. In contrast, political instability had always been crucial for the economic development of the Middle Eastern and African countries. Therefore, to understand the reasons of variations in economic growth without bias, countries of focus in a study should have some sort of uniformity in economic structure.

Considering weaknesses of cross-country panels, some scholars attempted to individualize their studies for a country of choice, though the outcomes did not change much. Moyo et al. (2017) studied the long-run association of trade openness and economic growth in Ghana and Nigeria considering the period of 1980-2016. Using an Autoregressive distributed lag (ARDL) model and incorporating additional control variables like investment, exchange rates and inflation, they concluded that trade openness has been conducive for Ghana, but not for Nigeria. A similar result was found by Keho (2017) for Cote d'Ivoire, though he considered the period of 1965-2014 in a multivariate framework including capital stock, labor and trade openness as regressors.

In disparity, some other studies on trade-growth nexus argue that the strong positive

impacts found in earlier studies are not robust enough. Analyzing a panel data set covering 30 African countries over the period of 1981–2010 and using System Generalized Method of Moments (SGMM) approach, Goff and Singh (2013) found that impacts of trade on poverty had been ambiguous. This means that trade usually increases poverty as it increases demand (and therefore, price) of abundant factors of production in the economy, but does the opposite when a country has deep financial sectors, a high level of education, and strong governance.

Menyah et al.(2014) scrutinized the pivotal interactions between financial development, trade openness and economic growth for 21 sub-Saharan African countries for the period of 1965-2008. Their findings show limited support for trade-led growth hypothesis for the SSA countries studied.

Altogether, it can be maintained that drawing a straight forward conclusion about the influence of trade openness on economic growth is not at all easy, and subject to the assessment of parallel impacts of other important policy variables.

3. Why BIMSTEC now?

3.1 Background of BIMSTEC:

Though BIMSTEC came into being in 1997, it started drawing fresh interests in promoting regional integration when Mr. Narendra Modi, the Prime Minister of India, designed two important foreign policies focusing on Asia – “Neighborhood First”, and “Act East” after assuming his office in May 2014. “Neighborhood First” policy was focused on India’s relationship with its neighbors in South Asia. In contrast, the “Act East” policy was intended to grow and nurture India’s relationship with ASEAN and other countries situated in the Asia-Pacific region. At that moment, India was desperately looking for a platform that could simultaneously back both policies. Among existing regional cooperation initiatives, only BIMSTEC could do this job.

BIMSTEC can be a good partner of Japan as well. According to Yhome (2017), “It makes the case for Japan to join BIMSTEC, initially as an ‘observer state’, later moving up as a ‘dialogue partner’, and eventually becoming a full member of the grouping.” Being the second-largest economy in Asia and the Pacific region, Japan can utilize its technical expertise and other soft-skills in BIMSTEC countries to tackle Chinese influence in this region, which is important for Japan from geo-political and security perspective.

Some other considerations also pushed the idea to bring BIMSTEC as an alternative

to SAARC (South Asian Association for Regional Cooperation), a similar but older initiative to promote regional cooperation in South Asia:

- Though SAARC was established in 1985, it has a long history of suffering from lack of trust and understanding among the members. From the very beginning, India has viewed this platform as a collective attempt by its neighbors to undermine its perceived regional 'supremacy'.

In contrary, other member states were anxious about India's tendency to act like a regional 'Big Brother', as India had (and still has) clear heterogeneity with and advantage over the others in terms of its size of territory, economy, military strength, and connectivity with the global community. Consequently, most of the accords and agreements remained unimplemented, and SAARC was never successful in realizing its potential. Though SAARC had its own regional FTA (Free Trade Agreement) called SAFTA since 2006, it could not boost the trade up to the extent expected. Still the member countries have considerable level of tariff, para-tariff, and non-tariff trade barriers among them.

- Because of Pakistan's non-cooperation and hesitant attitude, the 18th SAARC summit in 2014 failed to sign the SAARC–Motor Vehicle Agreement in Kathmandu.
- To tackle China's growing influence in South Asia and South East Asia through the Belt and Road Initiative, BIMSTEC offers a unique platform to India to reinforce its economic and strategic geo-political ties with Southeast Asian nations. Moreover, Bangladesh's growing interest in stimulating sub-regional cooperation with Bhutan, India, and Nepal (the BBIN network) also alleviated some bottle-necks that BIMSTEC faced.

Considering all these, the Indian think-tanks such as Observer Research Foundation (ORF) suggested that regional cooperation in South Asia would never see any light if the complex relationship between India and Pakistan could not be put aside. This effectively means that any further integration effort through SAARC would be meaningless, as Pakistan is there as a member of this coalition.

Altogether, India's interests have succeeded in making some important progress for BIMSTEC, including the recent establishment of the BIMSTEC Energy Centre and the BIMSTEC Business Council. The Council is a forum for business organizations to promote regional trade. BIMSTEC has also got a secretariat in Dhaka, Bangladesh in September 2014, which portrays its renewed significance to the member countries after 17 years of

establishment.

3.2 Trade promotion and BIMSTEC:

Economic and technical cooperation in South and Southeast Asia is considered as the preliminary focus of BIMSTEC.

Yet, as a trade alliance, BIMSTEC has gigantic potential due to the region's large endowment of natural resources, economic dynamism, and vast markets. It has some of the fastest-growing countries in the world. The combined GDP in the region is around US\$2.7 trillion (as of 2016) and is likely to grow further. Intra-regional trade among BIMSTEC member countries has also been growing rapidly. As of 2016, trade with BIMSTEC as a percentage of total trade has reached at 36.14%, 59.13%, 18.42%, and 11.55% for Myanmar, Nepal, Sri Lanka, and Bangladesh, respectively. For India and Thailand, it is only 3 percent, though.

Understanding this potential, member states of BIMSTEC have already formed a Trade Negotiating Committee (TNC) to look after the negotiation issues. The Framework Agreement for FTA was signed in 2004, covering the followings: (i) Tariff concessions on trade in goods, (ii) Customs cooperation, (iii) Trade in services, (iv) Investment cooperation, and (v) Dispute settlement. Among other issues, this Framework Agreement has left scopes for dispute settlement by consultation and arbitration, reciprocal assistance in Customs matters, postponing concessionary tariff arrangements because of infant industry argument, and abolishing non-tariff barriers (NTBs) to the extent possible.

4. Data and Methodology

This paper will examine the impact of trade openness on economic growth in BIMSTEC by using a cross-country dynamic panel for the period of 1991-2016. For a better understanding, the BIMSTEC experience will be compared with that of high-income countries, Latin America, and all member countries of World Bank and ASEAN. Comparison with BIMSTEC countries other than India and other than India and Thailand will also be shown. Such cross-country panels are convenient for examining many countries over a long period of time and provide adequate controlling for non-trade factors and undetected country-specific influences.

4.1 Regression Models:

The impact of trade openness on economic growth is assessed by using the following regression equation:

$$Y_{i,t} - Y_{i,t-1} = \beta_1 Y_{i,t-1} + \beta_2 OP_{i,t} + \beta_3 CV_{i,t} + \mu_t + \gamma_i + \varepsilon_{i,t} \dots\dots\dots(i)$$

Here, $Y_{i,t}$ is GDP per capita for country i at time t ; OP is trade openness; CV is the set of control variables (education, terms of trade, and FDI as percentage of GDP); μ_t is unobserved time-specific effects; γ_i is unobserved country-specific effects; and $\varepsilon_{i,t}$ is the error term. The control variables have been selected based on careful examination of the existing literature and socio-economic context of BIMSTEC countries.

Precise definition of the variables and expected signs of the coefficients are as follows:

Table-1: Definitions and expected signs

Variable	Definition	Expected Sign
GDP Per Capita	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2010 U.S. dollars.	N/A
Trade Openness	Measured by trade as % of GDP. Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product	+ve
Education	Measured by secondary school enrollment (as % of gross). Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown.	+ve
Terms of Trade	Net barter terms of trade index is calculated as the percentage ratio of the export unit value index to the import unit value index, measured relative to the base year 2000. Unit value indexes are based on data reported by countries that demonstrate consistency under UNCTAD quality controls, supplemented by UNCTAD's estimates using the previous year's trade values at the Standard International Trade Classification three-digit level as weights.	+ve

Variable	Definition	Expected Sign
FDI (% of GDP)	Foreign direct investment is the net inflow of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP.	+ve

The regression equation is estimated by using Fixed Effects (FE) technique and robust standard errors clustered at the country level for the period of 1991-2016. This study extensively uses World Development Indicators (as of December 22, 2017) as source of data for most of the variables. Fixed Effect technique is chosen based on the results of Hausman tests and subjective analysis of the traits of the datasets.

4.2 Specification Tests:

Summary outcomes of the specification tests conducted for each of the variables, and measures taken thereon are as follows:

Table-2: Outcomes of Specification Tests

Diagnostic Test	Method	Result	Remedy
Autocorrelation	Wooldridge test	First-order autocorrelation [All countries p = 0.0039 High income countries p = 0.0084 BIMSTEC p = 0.0000]	<i>-fe, cluster (id)</i> SE robust to heteroscedasticity and autocorrelation
Heteroscedasticity	Wald test	Heteroscedasticity is present [P = 0.0000]	
Panel Unit Root	Phillips-Perron test	Education and Terms of Trade (ToT) contain unit roots. [Education p = 0.0000 Terms of Trade p = 0.000]	Unit root disappears after first differencing, so data set is stationary.
Multicollinearity	Variance Inflation Factor (VIF) test	No Multicollinearity [Mean VIF = 1.28, The condition number = 10.8345]	

[Source: Prepared by authors]

5. Empirical Results and Interpretation

Results from the regression estimation of Table-3 and 4 indicate that the impact of

Table-3: Regression Results, Trade Openness and Growth of GDP per capita

	(1)	(2)	(3)	(4)	(5)
Variables	Growth of GDP Per Capita				
	All Countries	High-income	BIMSTEC	ASEAN	Latin America
Trade Openness	4.888***	10.26***	-0.0518	-1.985	3.251
	(1.197)	(2.924)	(0.859)	(1.097)	(2.245)
Initial GDP per capita	-0.0976***	-0.111***	0.0544*	0.00429	-0.0474
	(0.0101)	(0.0163)	(0.0243)	(0.0148)	(0.0427)
Education	4.584***	8.404	-1.551	-0.0140	0.741
	(1.679)	(6.677)	(0.846)	(1.728)	(2.185)
Terms of Trade	0.204	-0.910	-0.401	-3.849*	2.026**
	(0.649)	(1.668)	(0.581)	(1.639)	(0.724)
FDI (as % of GDP)	-0.223	-0.379	1.899	21.35	19.11**
	(3.045)	(3.221)	(22.27)	(15.67)	(6.939)
Constant	638.1***	2,210**	110.4	590.1**	-185.9
	(168.5)	(907.3)	(105.1)	(196.4)	(133.2)
Observations	2,457	774	106	138	329
R-squared	0.069	0.086	0.037	0.080	0.102
Number of id	176	54	7	8	18

Table-4: Regression Results, Trade Openness on Growth of GDP per capita. Without India and Without Thailand and India.

	(1)	(2)	(3)
VARIABLES	Growth of GDP Per Capita		
	BIMSTEC	Without India	Without Thailand and India
Trade Openness	-0.0518	-0.308	-0.675**
	(0.859)	(0.902)	(0.212)
Initial GDP per capita	0.0544*	0.0573*	0.0590***
	(0.0243)	(0.0243)	(0.00244)
Education	-1.551	-1.850*	-0.727
	(0.846)	(0.839)	(0.532)
Terms of Trade	-0.401	-0.583	0.187
	(0.581)	(0.651)	(0.201)
FDI (as % of GDP)	1.899	0.497	31.18**
	(22.27)	(25.79)	(6.971)
Constant	110.4	156.3	12.18
	(105.1)	(105.4)	(12.07)
Observations	106	84	63
R-squared	0.037	0.034	0.582
Number of id	7	6	5

Note for Table-3,4: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

[Prepared by author]

trade openness on economic growth does not follow any universal rule of thumb, and it is often too difficult to differentiate the sole influence of trade openness from that of other associated policies.

Given the state of economic development, secondary education, terms of trade, and quantity of FDI, openness has significant positive influence in the global level and in high-income countries, but insignificant in BIMSTEC, ASEAN, and Latin American countries. Inside BIMSTEC, openness is only negatively significant when India and Thailand are excluded. A logical explanation of such insignificance may be the unpreparedness of most of the industries in these regions to compete against efficient global competitors, while high-income countries are already capable of bagging first-mover advantage along with advantage of economies of scale and technological superiority. Negative significance of trade openness after excluding India and Thailand may be attributed to loss of consumer surplus for exclusion of Indian and Thai businesses having economies of scale and technological advantage. This also indicates that benefits of further trade openness in BIMSTEC may accrue to few Indian and Thai firms who have greater command over resources to reach the untapped markets and to design the distribution system according to their convenience. Firms of other countries like Bangladesh and Sri Lanka may slightly be able to take this advantage to tap some niche markets, while those of Nepal, Bhutan, and Myanmar may only catch discontents.

Evidence of conditional convergence of growth is found in the context of global and high-income countries, whereas indication of divergence is more apparent inside BIMSTEC. The convergence theory predicts that the per capita GDP of the poor countries will catch up with that of the richer countries. So, the countries with a lower level of initial per capita GDP tends to grow at a faster rate than countries with high initial per capita GDP. As BIMSTEC member countries have mostly similar economic state, evidence of divergence is more practical.

Among other control variables, education is found essential in inducing growth at a global level, but not in other sub-groups. In fact, for BIMSTEC and ASEAN countries, the coefficient for education is negative and insignificant. This may seem to be counter-intuitive, but the explanation lies in the definition of the variable. In congruence with some previous studies, this study considers secondary school enrollment ratio, which may not be pertinent to higher-income and Latin American countries anymore. For such countries, advanced education and sophisticated skills may be more relevant to promote further economic progress. Almost a similar explanation is applicable for BIMTEC countries. Mere

secondary education is, evidently, no more relevant to the skill demand of present-day labor market of these countries. For embracing advanced technology and adding extra value in export industries, these countries need more sophisticated workforce; and such requirement may correspond to labors having post-secondary education with specialized vocational training. China has emphasized such technical education for a long time, and thus has become successful in reintroducing itself as a vast production hub for the world. Therefore, such conclusions make good sense.

Terms of Trade seems to be significant for growth of per capita GDP in Latin American countries (may be because of dominance of raw materials and natural resources sector in export and employment), but insignificant for BIMSTEC countries in all arrangements of the data set. Though composition of export basket of BIMSTEC is bit different from that of Latin America, such insignificance is in line with the understanding that small or developing countries are not usually able to affect their own terms of trade. However, since growing economies (i.e., having growth rate above the global average) usually face worsening terms of trade, this outcome also suggests that BIMSTEC countries should stress quality and diversification to get favorable and significant impact of terms of trade.

FDI as percentage of GDP reveals some interesting outcomes in this study. As discussed earlier, the typical assumption about FDI is that it has two relevant but different channels for dissemination of its welfare effects: (1) direct channel, by forming new capital and creating new jobs for the host country; (2) indirect channel, through spillover/diffusion of new labor and managerial skills, new technology, and competitive innovations. Yet, significantly positive coefficient for Latin American countries and for BIMSTEC countries other than India and Thailand may be attributed to lower savings to GDP ratio of these economies comparing to that of South Asia, East Asia, and high-income countries. For high-income countries, FDI is insignificant as they don't usually suffer from capital inadequacy. For BIMSTEC as a whole and ASEAN, a probable explanation of the insignificance is that instead of the amount of foreign investment, the nature of investment (in STEM fields, introducing new technology and managerial skills) is much more important. Exploitation by investment also needs to be averted particularly in the fields of natural resource extraction and energy, as exploitative foreign investments in these sectors have undermined growth potential in many developing and least-developed countries in the past.

6. Conclusions and Further study

The aim of this paper appears to be relevant in the present-day context as BIMSTEC is now negotiating its first-ever FTA under the Framework Agreement. Using unbalanced panel data sets for the period of 1991-2016 in Fixed Effects regressions, the outcomes that this study arrives at are quite interesting to demonstrate how distinctive the policy implications can be when the focus moves from high-income to developing or least-developed countries. The most important finding of this study is that trade openness may not be a complete blessing for BIMSTEC countries to promote economic growth, unlike popular thoughts and common political arguments. BIMSTEC countries are already burdened with factors like political tensions, large volume of informal cross-border trade, and the risks of being flooded by cheap Chinese products. So, if openness is not complemented with domestic reforms to decrease the cost of doing business, then it may eventually reduce the economy's capacity to generate long-run growth. The infant industry argument may still be a very much valid argument in the context of BIMSTEC countries as LDCs in BIMSTEC are not yet good in terms of technological and financial capabilities. Therefore, these countries should be particularly cautious about the FTA consequences.

To take advantage of openness, BIMSTEC countries should emphasize technical education so that the workforce can be better equipped to grab the opportunities and face the challenges of rapidly changing global markets. This also stresses the importance of R&D initiatives by academic and industrial bodies. Instead of exporting only primary and low-value added products, exporting more high-value added products is crucial to get better value-for-resource and bargaining power in trade negotiations. FDI holds importance for BIMSTEC countries, with a totally different perspective compared to high-income countries or all the other countries. Qualitative aspect of FDI is much more important for India and Thailand, whereas quantitative aspect is important for other BIMSTEC members with lower savings to GDP ratio. This also warrants for a cautious FDI policy to avoid exploitative ventures and expedite knowledge transfer from developed countries.

For further study, effects of China-USA trade war and China's Belt and Road Initiative on trade openness and economic growth of BIMSTEC countries may be examined. Potential collaboration of BIMSTEC with Japan may be addressed in such studies as well.

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