

Import Substitution Industrialization and Economic Growth: Evidence from the South Asian Region

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Abstract

The developing countries initiate various macroeconomic policies to achieve sustainable economic growth. Import Substitution Industrialisation (ISI) is one of the key policies adopted by developing countries, since World War II, to promote domestic production and reduce economic dependence on foreign countries. In this case, Import Substitution Industrialisation, as a trade policy has provided countries with different outcomes. Therefore, the empirical literature is inconclusive on the effectiveness of ISI policy for economic development. This study examines the impact of ISI on economic growth, with special reference to selected South Asian countries; Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka. This study employs panel data analysis, along with panel unit root test, panel cointegration test, GMM dynamic panel data estimation, Granger causality test, and Impulse Response Function from 1990 to 2019. The findings of this study indicates that, manufacturing value added, total subsidies and inflation are statistically significant, while the trade balance and tariff on imports are insignificant to economic growth in South Asian countries. Moreover, impulse response reveals that, in the long run, the economic growth in the South Asian region has a slight response to ISI indicators. This paper concludes that ISI policy can significantly influence economic growth in the South Asian region in the short run but not in the long run. Therefore, it is recommended for South Asian countries adopt ISI policy in the short run to protect domestic industries, becoming more export-oriented in the long run.

Keywords: Economic Growth, Dynamic Panel Data Analysis, Import Substitution Industrialization, Macroeconomic Policy, South Asian Region

Introduction

Import Substitution Industrialization (ISI) is a trade policy that involves promoting domestic production to replace previously imported goods through an industrial process. ISI is also an economic policy that focuses on promoting domestic production as well as the export of domestically produced goods. It is based on the idea that the country should try to reduce foreign dependence on satisfying local demand for goods. Therefore, it is a

development strategy adopted by developing countries to reduce their economic dependence on foreign countries. This approach aims to protect and strengthen domestic industrial producers by increasing effective competition with imports.

"Import substitution industrialization (ISI) is an industrial development program based on the protection of local infant industries through protective tariffs, import quotas, exchange rate controls, special preferential licensing for capital goods imports, subsidized loans to local infant industries" (Ogujiuba & Alehile, 2011). Import substitution is purposefully used to overcome the rigid competition from importers within the country and allow domestic manufacturers in the 'infant' industry for import substitutes, to grow. (Jackson & Jabbie, 2020) After a period of growth and development, local firms were expected to be strong enough to compete in the international market. However, as evidenced, these policies were rarely successful enough to bring home-grown industries more powerful; instead, they have slowed down the economic growth and poverty reduction.

Governments used strategies primarily including import tariffs and export subsidies to encourage local producers to produce more profitable goods at lower prices and export them. In addition, the exchange rate controls and licenses for imports needed in manufacturing were used. Another key to the successful implementation of ISI policy was the government's investment in capital and technology, which supported the expansion of domestic production and industrialization of import substitutes (Oatley, 2019). This implied that the ISI policy was directed by two means of protecting local infant industries from import substitutes while, encouraging imports of capital and technology. As implied, in the 1950s, the concept of import substitution first developed to move the import composition from consumer goods to capital goods, not as a means of reducing total imports.

Several drivers that pursued developing nations to adopt Import Substitution Industrialization. First, ISI policy became popular in developing countries since World War II, specifically due to raised living costs and foreign reserve shocks, as a mean of economic development by improving the capacity to produce substitutes domestically (Ahmad, 1978). Secondly, the global economic downturn has affected the primary product prices, the main export on which many developing economies depend (Ahmad, 1978). In addition, ISI was seen as a stimulator for achieving diversity in the economies. The methods like reduction of input prices, high import tariffs, manipulation of exchange rates and termination of export duties supported developing economies in gathering necessary industrial knowledge for manufacturing and exporting local products (Schmitz, 2007).

However, those countries did get that ISI does not provide quick growth and in later, more focused on export promotion rather than import reduction. It became evident that generally ISI policy led to economic inefficiencies and eventually slowed economic growth. In the 1960s and 1970s, significant adoption of ISI was in Latin America, but it was not successful. Either opening policy was not brought immediate development to Latin American economies (Rodrik, 2005). The ISI policy has not generated the desired outcome for many African countries, including Ghana, which faced a low economic growth rate within the period of inward-looking ISI policy was adopted, and increased growth rates after the open policy adoption.

One critique of ISI is that it reduces the competition within the domestic market which on the one hand, discourage product development and improvement. The prices of goods

increase as lack of purchase options, for all consumers, which will be a burden to poor people. In addition, domestic businesses face difficulty in accessing new technology and knowledge, due to limited trade opportunities (Baer, 1972).

Therefore, the current study aims to examine the impact of ISI on economic growth, with special reference to selected South Asian countries (Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka) by employing dynamic panel data analysis along with panel unit root test, cointegration test, Granger Causality Test and Impulse Response Function. After the review of the available literature, results of the data analysis and findings of the aforementioned tests are presented while highlighting the conclusions of the study at the end of the research paper.

Literature Review

"Import substitution industrialization (ISI) is a theory of economics typically adhered by developing countries or emerging-market nations that seek to decrease their dependence on developed countries"(Segal, 2019). Development economists had different perspectives on ISI as a trade policy for successful economic development, varying over time, contributing to the literature. They have made arguments not only on adopting import substitution but also on the need for export promotion. In the 1950s, key development economists such as Raul Prebisch, Lewis, and Myrdal had mixed ideas about import substitution policy (Irwin, 2020).

Raul Prebisch, the first secretary-general of the United Nations Economic Commission for Latin America (ECLA), was one of the most prominent economists who set out the views on why international trade did not equally treat developed countries and developing countries (Prebisch, 1950). He pointed out that the unequal power distribution left developing countries with no way to gain prosperity. Therefore, he argued that developing countries should create and protect infant industries for domestic production (Hunt, 2016). Myrdal believed that less-developed countries should improve exports because it determined the ability to import capital goods that were necessary in production. In his book, *An International Economy*, he suggested the government to give free entrance to capital goods but clamp down on imports of consumption goods and, in particular, luxury goods.

Both economists believed that import controls would contribute to economic development, but more restrictions might harm the economy. Further, Prebisch recognized that the problem was with the implementation of ISI by various economies, not with the policy itself or its objectives. Although, both economists have found some shortcomings with ISI, they could not reject the ISI policy.

ISI has been popular in many parts of the world after World War II. Many less-developed countries who tried out this policy, have seen multinational firms within the country as a threat to economic independence. The Philippines was among the first few countries to try the expansion of import substitution, and it became a 'slowest-growing capitalist region'. Some 'Asian Tigers' have grown rapidly while protecting domestic firms, in the period following World War II, which proved that in the earlier stages, ISI policy supported the countries to grow to some extent. Countries that have implemented these strategies obviously experienced a certain growth rate, for example, rising per capita income in Japan and other Asian economies such as Malaysia, Thailand and Indonesia

after 1973 (Ogujiuba, 2011). Some Asian countries attempted to ISI to ensure increased employment opportunities and improved productivity by transforming capabilities (Saffa and Jabbie, 2020).

However, there are some rises as well as pitfalls faced by the countries who tried protectionist trade policies like import substitution toward economic development. During the 1950s and 1960s, Import Substitution Industrialization and associated government involvement led to economic growth in countries such as Brazil and India. However, by the end of 1970s, Africa and South Asia failed in development through ISI. Their imports exceed exports, and government spending was growing much faster than revenue, which created financial problems.

The import substitution industrialization was successful in Latin America to some extent, because of the structural changes made to the government, where democratic government replaced the old neocolonial government. And also, companies owned by foreign countries were localized. However, while some economists argued that ISI led to the "Mexican Miracle" during the period of 1940 to 1975 with an above 6 percent economic growth per annum, others argued that ISI failed in Latin America and was a factor behind the economic collapse in Latin America (Hoogvelt, 1998).

Many African countries have also obtained different policy outcomes. For example, Ghana experienced low growth rates in the period of protecting ISI policy adoption, but had significantly higher economic growth rates after open policy adoption (Aryeetey and McKay, 2007). Looking back to the 1930s, Zimbabwe, known as Rhodesia, had notably success with ISI policy, which accompanied the expansion of industries such as medical, chemical and agricultural production (Riddell, 1988). Hong Kong, Singapore, South Korea and Taiwan are considered rare examples of East Asian countries that successfully adopted ISI policy.

Import substitution strategies had not produced desired results for countries that are less participated in international trade such as North Korea, Myanmar and Cuba. Also, domestically produced goods by those countries were not much competitive in the international market. Thus, ISI economies ended up by importing more, rather than reducing imports (Oatley, 2019).

Adewale (2017) investigated the significance of Import Substitution Industrialization policy on the economic development in BRICS countries based on the observations from 1960 to 2016. It is concluded that ISI policy has helped revitalize the industrialization of the five countries, with the consequences of many fluctuations over time. Therefore, the researcher has recommended that ISI policy and economic integration would be an advantage for developing countries to incorporate short-term exports and adopt a more liberalized policy as a higher industrialization level is achieved over time.

Even-though, ISI policy has led to better performance for economies in the short run most researchers recommend liberalization in the long run for sustained development (Adewale, 2017). In the short run, import substitution can create job opportunities, but in the long run, the economic output will not grow as much as expected because lack of competition will reduce productivity. The success of ISI depends on the efficiency of resource allocation and government intervention in foreign exchange. Previous literature suggests that the countries with high-income levels and high population, have had great success with ISI policy, as it allowed a rise in consuming domestically produced products.

Therefore, it is important to study how ISI policy leads to economic growth in South Asian countries to provide recommendations to adopt the policy by developing countries in the region.

However, previous research studies have paid little attention to South Asian countries. Therefore, this research aims to fulfill that gap existing in the empirical literature. The main objective of this research study is to determine the relationship between Import Substitution Industrialization and economic development in South Asian countries. Since, today many countries have struggled to enhance better economic performance and well-being of the people, Import Substitution Industrialization has become a practical approach that can be applied to developing countries to achieve these goals.

Research Methodology

This study explores the literature on the South Asian region by using six countries. The countries of Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka are selected out of eight South Asian countries depending on data availability. The secondary data used in this study are sourced from the World Development Indicators (WDI) of the World Bank. The data is collected for the period from 1990 to 2019 (a period of 30 years). The following econometric model is used for estimation.

$$GDPG_{it} = \beta_0 + \beta_1 INFL_{it} + \beta_2 MANVAD_{it} + \beta_3 TRDBAL_{it} + \beta_4 TARIFF_{it} + \beta_5 SUBSDY_{it} + u_{it}$$

Where, GDPG is the GDP growth, INFL is the inflation rate, MANVAD is the manufacturing value added, TRDBAL is the balance of trade account, TARIFF is the tariff on imports and SUBSDY is the total subsidies on products. In this equation, *i* depicts the country and *t* depicts the year.

In this research, the GDP growth rate is used to measure the countries' economic growth as the dependent variable of the model. The explanatory variables used in this study are tariffs on imports as a measure of economic openness, total subsidies for all products chosen to indicate subsidies, trade balance as a nominal value of the balance of trade account, consumer price index as a measure of inflation, and also manufacturing value added to measure the contribution of import substitution.

Table 1: Correlation Matrix

	INFL	MANVAD	TRDBAL	TARIFF	SUBSDY
INFL	1.000000	0.024582	0.007554	-0.112111	0.080092
MANVAD	0.024582	1.000000	0.007622	-0.035923	-0.062813
TRDBAL	0.007554	0.007622	1.000000	0.074586	-0.480929
TARIFF	-0.112111	-0.035923	0.074586	1.000000	0.209431
SUBSDY	0.080092	-0.062813	-0.480929	0.209431	1.000000

This study employs dynamic panel data estimation based on Generalized Method of Moments (GMM) which has been used by the recent literature (Adewale, 2017) following the panel cointegration test, Granger causality test and Impulse Response Function. However, there is a limitation to capture the exact contribution of ISI because the selected time range will not support the periods of ISI policy implementation by the countries used in the study, and generally it takes a long time for economic policy to generate results.

Results and Discussions

This study employs a panel data estimation to determine the relationship between Import Substitution Industrialization and economic growth. The analysis includes the panel unit root test, panel cointegration test, Granger causality test, and dynamic panel data estimation based on Generalized Method of Moment (GMM).

Table 2: Panel Unit Root Test Results

Variable		Fisher- ADF	Fisher- PP	IPS
GDPG	Intercept	-5.9869 (0.0000)	-5.8242 (0.0000)	-6.5897 (0.0000)
	Intercept and trend	-4.7119 (0.0000)	-5.8847 (0.0000)	-4.9798 (0.0000)
	None	0.1148 (0.5457)	-1.2612 (0.1036)	
INFL	Intercept	-5.4402 (0.0000)	-4.7142 (0.0000)	-5.5753 (0.0000)
	Intercept and trend	-4.4888 (0.0000)	-3.7810 (0.0001)	-4.7542 (0.0000)
	None	-2.2210 (0.0132)	-2.4581 (0.0070)	
MANVAD	Intercept	-4.7058 (0.0000)	-4.3718 (0.0000)	-4.8368 (0.0000)
	Intercept and trend	-4.2077 (0.0000)	-3.8155 (0.0001)	-4.4129 (0.0000)
	None	-2.7077 (0.0034)	-3.2435 (0.0006)	
TRDBAL	Intercept	5.0433 (1.0000)	5.0742 (1.0000)	5.6937 (1.0000)

	Intercept trend	and	2.3092 (0.9895)	1.7130 (0.9566)	2.4788 (0.9934)
	None		4.4828 (1.0000)	4.3330 (1.0000)	
TARIFF	Intercept		-1.2149 (0.1122)	-9.0639 (0.0000)	-1.5382 (0.0620)
	Intercept trend	and	-0.8252 (0.2046)	-13.04802 (0.0000)	-1.3622 (0.0866)
	None		-1.5181 (0.0645)	-7.3928 (0.0000)	
SUBSDY	Intercept		1.9259 (0.9729)	3.2110 (0.9993)	2.0927 (0.9818)
	Intercept trend	and	0.8724 (0.8085)	-0.5769 (0.2820)	0.6258 (0.7343)
	None		8.4525 (1.0000)	10.1288 (1.0000)	

The Fisher-ADF, Fisher-PP, and Im, Pesaran and Shin (IPS) test are conducted to determine the stationarity of panel data at the level for intercept, intercept, and trend and none. All three tests show that GDP growth rate (GDPG), inflation (INFL), and manufacturing value added (MANVAD) are stationary at the level. In contrast, the Trade balance (TRDBAL) and total subsidies (SUBSDY) are not stationary at the level. The unit root tests provide contradictory results on the stationarity of tariffs on imports (TARIFF). Fisher-PP test shows TARIFF is stationary while Fisher-ADF and IPS tests show it is not stationary (Table 2).

The combined Johansen cointegration test is employed in this study which carries both Trace and Maximum Eigenvalue tests (Table 3). Both trace test and maximum eigenvalue statistics reveal two cointegration relationships in the panel data series. The existence of cointegration indicates that there is a long-run relationship between ISI indicators and economic growth.

Table 3: Panel Cointegration Test Results

No of CE	Trace stat	p-value	Max-eigen stat	p-value
r = 0	105.7001	0.0000	80.5430	0.0000
r ≤ 1	42.8285	0.0000	39.6008	0.0001

$r \leq 2$	14.5412	0.2677	12.4919	0.4071
$r \leq 3$	7.8745	0.7949	6.7770	0.8720
$r \leq 4$	6.3764	0.8959	4.4027	0.9750
$r \leq 5$	16.8869	0.1543	16.8869	0.1543

Table 4: GMM Dynamic Panel Data Estimation

Independent Variable	Coefficient	p-value
Constant	0.7104	0.0401
GDPG (-1)	0.9528	0.0038
INFL	-0.0249	0.0150
MANVAD	0.3185	0.0220
TRDBAL	-1.0451	0.5399
TARIFF	0.8853	0.1704
SUBSDY	0.0013	0.0010
Total panel observations		175
Number of instruments		173
Wald χ^2		21135.67 (0.0000)

The dynamic panel data estimation based on Generalized Method of Moment is employed to estimate the effect of first lag of GDP growth, inflation, manufacturing value added, trade balance, tariffs on imports, and total subsidies on economic growth in South Asian countries (Table 4). GMM based dynamic panel data estimation is used to control the endogeneity effect in the Fixed Effect Model (FEM). Lag of GDP growth, manufacturing value added (MANVAD) total subsidies (SUBSDY), and inflation (INFL) significantly impact economic growth in South Asian countries at a 5 percent level. Lag of GDP growth, manufacturing value added (MANVAD) total subsidies (SUBSDY) are positively related while Inflation (INFL) is negatively related to economic growth in South Asian countries. Trade balance (TRDBAL) is negatively related to economic growth in South Asian countries but their impact is insignificant. Further, tariffs on imports (TARIFF) have a positive but statistically insignificant impact on economic growth in South Asian countries.

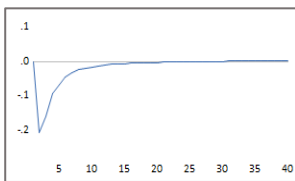
The Wald chi square indicates the overall significance of the model. The probability of F-statistic 0.0000, which is less than 1 percent, suggests the independent variables; lag of GDP growth, inflation, manufacturing value-added, trade balance, tariff on imports, total subsidies are jointly significant for the economic growth in the South Asian region.

Table 5: Granger Causality Test Results

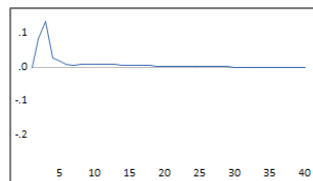
Null Hypothesis	F-stat	p-value
INFL does not granger cause GDPG	3.1904	0.0758
GDPG does not granger cause INFL	0.0272	0.8692
MANVAD does not granger cause GDPG	0.4941	0.4831
GDPG does not granger cause MANVAD	0.0391	0.8433
TRDBAL does not granger cause GDPG	2.0148	0.1576
GDPG does not granger cause TRDBAL	1.3958	0.2391
TARIFF does not granger cause GDPG	2.5131	0.1147
GDPG does not granger cause TARIFF	4.0183	0.0466
SUBSDY does not granger cause GDPG	0.7188	0.3977
GDPG does not granger cause SUBSDY	3.1531	0.0776

The causality test is conducted to determine the causality among GDP growth rate (GDPG) and each ISI indicator. Table 5 shows the granger causality test results. The trade balance (TRDBAL) and manufacturing value added (MANVAD) are not causally related to economic growth (GDPG) in South Asian region. The 10 percent significance level, it shows that inflation (INFL) causes economic growth (GDPG) but no reverse causality. There are two unidirectional causal relationships from economic growth (GDPG) to tariff on imports (TARIFF) and total subsidies (SUBSDY) in the South Asian region. According to the Granger causality test results, there is no bidirectional causality between ISI indicators and economic growth.

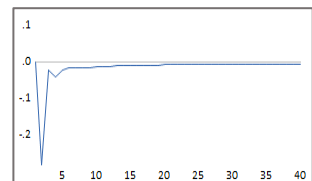
(a) Response of GDPG to INFL



(b) Response of GDPG to MANVAD



(c) Response of GDPG to TRDBAL



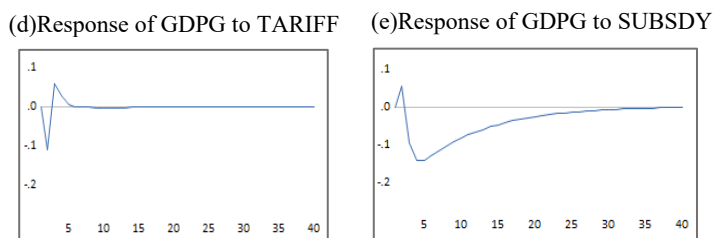


Figure 1: Impulse Response Function

The results of the impulse response, as shown in Figure 1, indicates that the economic growth in South Asian countries reacts positively to the shocks in the manufacturing value added *panel (b)*, negatively to the shocks in the inflation *panel (a)*, and trade balance *panel (c)*. It has both positive and negative reactions to the shocks in the total subsidies *panel (d)* and tariff imports *panel (e)* in the short run. Total subsidies have a decreasing negative effect, while other ISI indicators have no or very little effect on economic growth in South Asian countries in the long run.

Conclusion

This study investigated the relationship between economic growth and Import Substitution Industrialization in the South Asian region to provide recommendations on ISI as a trade policy in developing countries in South Asia. The dynamic panel data analysis reveals that inflation, manufacturing value added and total subsidies have a significant impact on economic growth in South Asian countries. According to the impulse response, the economic growth in South Asian countries reacts positively to the shocks in manufacturing value added and negatively to the shocks in inflation and trade balance. The ISI policy, following subsidies and import restrictions, can be used by South Asian countries in the short run effectively to enhance domestic production and industrialization by reducing imports. Since there is only a slight effect from ISI in the long run, moving to export promotion is recommended for these countries.

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