

Export Led Growth Hypothesis in the Context of Sri Lanka

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Introduction

As many schools of thoughts emphasize, economic growth is a complex process which depends on many socio-economic and political factors. Economists have attempted to identify the major determinants of economic growth through various means, and theories emphasizing capital accumulation, consumption level, trade, economic stability and political environment. In this study, the author gives prime attention to the export led-growth hypothesis which simply states that expansion of exports is a significant determinant of the economic growth of a country. Further, the export led growth hypothesis emphasizes exports as the engine of economic growth along with labor and capital. Even though few studies have been conducted regarding the particular area by adopting various methodologies and taking Sri Lankan experience into account, results of most of those studies show an insignificant relationship between exports and economic growth. On the other hand, one of the major suggestions of the Vision 2025 policy framework is that of developing Sri Lanka as an export-oriented economy. In this context, there is an apparent mismatch between empirical results and the policy framework of the country. Therefore, conducting a comprehensive analysis is called for. Hence, this study attempts to examine the validity of the export led growth hypothesis (ELGH) for Sri Lanka.

Objective

The general objective of this study is to investigate the relationship between exports and economic growth in Sri Lanka and to identify the impact of exports on economic growth based on time series annual data from 1978 to 2018.

Methodology

This study is developed based on the extended version of the neoclassical Solow Swan Growth Model (1956) which emphasizes capital and labour as the major determinants of economic growth. Gross Domestic Production (GDP) is considered as the dependent variable while Gross Domestic Capital Formation (GDCF), employment and exports are considered as independent variables. Standard time series methods are employed to identify the validity of the ELGH. The time series annual data for the study period is obtained from World Development Indicators (WDI) of the World Bank. The series are transformed into natural logarithm terms to avoid the issues of heteroscedasticity. This study has added exports as a new variable to the traditional Neo Classical Growth Model. Based on the previous studies of Feder (1982), Balassa (1985), Smith (2001), the following empirical model is adopted for the study:

$$\text{LnGDP}_t = \beta_0 + \beta_1 \text{LnGDCF}_t + \beta_2 \text{LnEMP}_t + \beta_3 \text{LnEX}_t + \varepsilon_t$$

LnGDP represents the Natural Logarithm of Gross Domestic Production. LnGDCF, LnEMP and LnEX represent the Natural Logarithms of Gross Domestic Capital Formation, Employment and Exports, respectively. Further, ε and t represent error term and time component respectively. First, trend analysis was conducted based on available literature, and Augmented Dickey Fuller (ADF) test was carried out to identify the stationarity of the data. The Engel Granger cointegration test was used to test the the long run relationship between exports and GDP. In addition, error correction model (ECM) test was adopted to examine the short run relationship. All tests mentioned above were conducted using E-Views 9 statistical software package.

Results and Discussion

According to the results of the ADF test I conclude that all the variable have unit root at level while stationary at first difference, I (1). Because all the variable are integrated of the same order, integrated of order one, Engel Granger Cointegration test can be conducted. The Results of Engel Granger test and OLS test are shown in Table 1.

Table 1: 1st Step of the Engel Granger Cointegration test – OLS regression

Variable	Coefficient	Standard Error	t-statistics
Constant	5.278	1.520	3.471***
LnGDCF	0.547	0.034	15.967***
LnEMP	0.069	0.210	0.328
LnEX	0.272	0.064	4.231***
<i>Effects Specifications</i>			
R-squared	0.995	F-statistic	2059.970
Adj. R-squared	0.995	Prob(F-statistic)	0.000
Durbin-Watson	1.712		

Note: *, ** and *** represent statistical significance at 10%, 5% and 1% respectively

As shown in Table 1, exports and GDCF have significant relationships with the GDP under the 1 percent significance level. Table 1 also indicates that a 1 percent increase in exports lead to a 27 percent increase in GDP. But the relationship between employment and GDP is insignificant. Further, by the R-squared value, 99 percent of the variation in the dependent variable is explained by independent variables. Because of the possibility of spurious results, ADF test is conducted on generated residuals of the OLS test and the results of the test is presented in Table 2. As results indicate, absolute value of test statistic of the ADF test is greater than the absolute value of Engel Granger critical value under 5 percent significant level which means residuals are stationary at level. This indicates the existence of long run equilibrium between the dependent and independent variables. Further, the results show that not only exports, but also GDCF has a significant positive impact on GDP in the long run, except employment which is insignificant.

Results of the ECM are reported in Table 3 and the significant negative coefficient of the error correction term reveals confirmation of long run relationship in the model. The coefficient of the error correction term is (minus) -0.272105 and it shows that approximately 27 percent of a disturbance is adjusted over the long run. It means that the model corrects the disequilibrium of the short run by a speed of 27 percent. In addition, results do not support rejecting the null hypothesis of no relationship which means there is no relationship between exports and GDP in the short run.

Table 2: ADF Unit Root test on U (Residuals)

	t-statistic	Prob.
ADF Test Statistic	-5.323***	0.0000
Engle-Granger Critical Value	1%	-5.017
	5%	-4.324
	10%	-3.979

Note: *, ** and *** represent statistical significance at 10%, 5% and 1% respectively.

Table 3: Error Correction Model

Variable	Coefficient	Standard error	t-statistics
C	0.031	0.003	10.086***
D(LGDCF)	0.235	0.033	6.954***
D(LEMP)	0.035	0.067	0.530
D(LEX)	0.059	0.037	1.582
U(-1)	- 0.272	0.087	-3.099***
Effects Specifications			
R-squared	0.761	F-statistic	18.403
Adj. R-squared	0.720	Prob(F-statistic)	0.000
LM test	0.093	Durbin-Watson stat	1.582

Note: *, ** and *** represent statistical significance at 10%, 5% and 1% respectively.

On the other hand, GDCF is the only independent variable which has significant effect on the dependent variable in the short run which indicates that a 1 percent increase leads to approximately 0.24 percent increase in GDP. It can be concluded that, even though the results of the ECM model confirms the long run equilibrium of the dependent and independent variables which strengthens the validity of ELGH in the context of Sri Lanka, it does not provide sufficient support for a short relationship between exports and GDP.

Serial correlation is one of the prominent issues with ECM which makes the model inappropriate. Therefore the Breusch-Godfrey Serial Correlation LM Test was conducted and results indicate that the null hypothesis of no serial correlation cannot be rejected under the 5 percent significance level which reinforces the validity of results of the ECM further. As indicated by the above results, there is a relationship between the exports and GDP in the long run and but not in the short run. It clearly means that, the results of the long run

model strongly support the validity of the ELGH in the context of Sri Lanka. Further, there are many channels through which exports can impact on economic growth as revealed by the literature. They include generation of greater capacity utilization, advantage of economies of scale, ability to absorb foreign technology, employment creation, increases in labor productivity, improving the allocation of scarce resources throughout the economy, relaxing the current account pressures for foreign capital goods by increasing the country's external earnings, attracting foreign investment and increasing the TFP and hence the well-being of the country (Smith, 2001). As for other variables, only GDCF has a significant impact on GDP in both long and short run in Sri Lanka. As the neo-classical Solow-Swan growth model emphasizes, capital accumulation is a core determinant of economic growth in both short and long run. Further, capital accumulation leads to improved productivity of the economy and higher economic growth.

Conclusion

Many studies emphasize exports as a major factor which stimulates the economic growth of a country and this study attempts to examine the validity of this statement using time series econometric analysis for Sri Lanka. Results of the ADF test revealed that all the variables considered in the study are nonstationary in level and in first difference. The results of the Engel Granger Cointegration test concluded that GDCF and exports have significant impact on GDP in the long run. A 1 percent increase in exports lead to a 27 percent increase GDP. Further, the ECM test results confirmed the long run relationship and showed that the model corrects the disequilibrium of the short run at a speed of 27 percent. In addition, ECM indicated that GDCF is the only variable which has a significant relationship with economic growth in the short run. Finally, the study provides statistical support to the validity of the Export Led Growth Hypothesis (ELGH) in the context of Sri Lanka only in the long run.

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