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Export Instability, Investment, Export Growth and Economic Growth in India

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ABSTRACT

The "Export-led Growth Hypothesis," as it is known in the literature, is still a popular issue in both theoretical and empirical research. According to the export-led growth hypothesis (ELGH), a key factor in determining growth is the expansion of exports. It asserts that growing capital and labour inputs into the economy as well as exports can contribute to a country's overall growth. The association between economic development, export growth, export fluctuation, and real effective exchange rate (REER) in India from 2001 to 2021 is examined in this paper using a multiple linear regression analysis model. Additionally, the impacts of foreign exchange, export fluctuation on investment, and import of capital goods have also been studied. The autocorrelation is also tested using the Durbin-Watson (D-W) test. Investigation of the association between income growth and exports in the context of India reveals that the country's exports haven't increased significantly enough to prove the theory of export-led growth. For instance, ceteris paribus, one per cent change in exports over time is expected to result in a 0.007 per cent increase in GDP. Weaker global demand, inflation, dropping exports, and growing global trade conflict all contribute to a weaker-than-expected positive link between GDP and exports. However, the findings have also shown that one per cent rise in instability increases GDP by 5.04 per cent. Furthermore, research has indicated that export instability does contribute to import for capital goods and demonstrates the relationship between investment and export instability is positive but not statistically significant. The result for policy is that, in order to decrease the negative impacts of export fluctuations, India should concentrate on those goods in which it has a competitive edge. The primary factors of the excessive volatility and restricted growth must be fully investigated in order to mitigate instability, and inherent flaws must be addressed.

Keywords: Export Instability, Economic Growth, Multiple Linear Regression, Autocorrelation

Introduction

Neoclassical economists begin to advocate for export-led growth in response to the successful narrative of newly industrialising Asian nations. For instance, they claim in order to have that the Four Asian Tigers Taiwan, Hong Kong, Singapore, and Korea have succeeded in maintaining high rates of economic development since the early 1960s because of their free-market, globally focused economies. However, this theory is not supported by the tigers' veracity. Instead of being left up to the market, the government's involvement was meticulously planned and had a significant impact on both export output and composition.

Numerous countries have embarked on reform programmes in order to facilitate trade and inclusion into the global economy. The term "trade policy reform" describes initiatives aimed at reducing governmental control and replacing pricing mechanisms (like tariffs) with direct involvement (like quantitative restrictions). Exports are encouraged more actively, quantitative constraints on imports are removed, and tariffs are reduced. Domestic licencing was simplified, and major private enterprises were given more room to expand. It also began a hesitant privatisation movement. The commercial system is now more outward-looking: FDI is greatly rising inward, and new foreign technology and equipment are more readily accessible.

Licencing for almost all capital and intermediate products was eliminated by the government. Customs charges were lowered significantly. Reduced tariffs applied to intermediate and capital products. In addition, other modifications were made to the programmes for the advantage of exporters, such as advance licences, duty drawback, export promotion for capital goods, 100 per cent export-oriented units, and special economic zones.

The association between international commerce and economic development has been thoroughly examined in the current research on economic development. The majority of research that have looked at this connection between export instability and income growth has done so using data from underdeveloped countries. Studies that don't allow the structure of the growth model to vary across countries cannot make any meaningful findings because institutional traits and input quality differ

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greatly among nations. Cross-sectional data studies have the limitation of assessing average associations and provide little information about specific nations. The drawback does not apply to studies based on time series data that are country-specific. The country-specific research has improved the scholarly literature regarding how new liberal reforming policies have affected growth in developing countries and has been useful in influencing policy circle. Time series data are only used in a few numbers of studies, including Love, Wilson and Sinha, which focus on particular nations [1-3].

Research on the effects of export instability is essential, as previous studies have shown. The government must put regulations in place to moderate this variation if it is shown that export instability hinders economic progress. There may be times when deregulating the movement of financial revenue into and out of the country and diversifying the export portfolio would be beneficial.

Considering this, the current study is a modest attempt to examine the relationship between export instability, investment, and economic growth in the new economic climate using time series data covering the years 2001 to 2021. While some research indicate that export fluctuation has a negative effect on economic growth, others support the idea that under some circumstances, export instability may actually spur growth. Others, however, rarely discover any meaningful connection. Glezakos discovers that export volatility has a detrimental influence on both export growth and import capacity based on a carefully chosen sample of 20 LDCS [4]. Similar evidence may be found in Voivodas research [5]. Between GDP growth rate and Instability index, according to Lanceieri, there is a negative rank association. Macroeconomic modelling techniques are used by Athukorala and Huynh to explore the effects of export instability on Sri Lanka's economy, adding a new dimension to the empirical research [6]. The findings suggest a link between export volatility and export performance that is detrimental. In nine Asian nations (Japan, Malaysia, Philippines, Sri Lanka, South Korea, Myanmar, Pakistan, Thailand, India), Sinha utilised time series data to analyse the link between export fluctuation and economic growth [3]. Studies have shown a link between export instability and economic development to be unfavourable for Japan, Malaysia, the Philippines, and Sri Lanka, favourable for South Korea, Myanmar, Pakistan, and Thailand and mixed for India. The research by Kaushik and Karol, which employed time series data to conduct their investigation from 1984-85 to 1998-99, further proved the negative association between national income growth and export volatility [7]. The findings of Kalaitzi and Chamberlain's study indicated a long-term relationship between exports and economic growth [8]. Additionally, the analysis found evidence supporting the short-term validity of the ELG (Export-led Growth) hypothesis, but no evidence of long-run causation. Jiyinga, who looked into the impact of imports and exports on the country's economic development, found that imports were a source of growth for Burundi's economy [9].

Methodology

Export fluctuation has been investigated in a new classical production function in the spirit of Feder 1983 in order to gain a better understanding of the link between export performance and instability and economic growth. A number of research have followed Feder in investigating the link between export and economic growth, in which a country's gross domestic product is a function of the growth rate of numerous explanatory factors such as labour and capital. We supplement these production functions by introducing a significant amount of export volatility. We define export instability as the difference between the observed and estimated values of export earnings derived by fitting a semi log function using the ordinary least square approach. Government generally operates on the basis of growth rates rather than absolute change, which is why this function is preferred. Much of the worry is focused on the years in which profits are below trend. Regression analysis is performed using income growth as the dependent variable and export growth, export instability, and real effective exchange rate as the explanatory variables in order to assess the influence of exports on the nation's economic performance. When exports deviate from trend, imports will undoubtedly be reduced, which will further impede economic development because export revenues are generally utilised as a source of financial imports.

$$IG=f\,(EXPG, EXPI, REER) \quad (1)$$

IG= growth in real GDP.

The abbreviations EXPG, EXPI, and REER represent real growth in exports, export instability index, and real effective exchange rate, respectively.

The Reserve Bank of India's Handbook of the Indian Economy, World Integrated Trade Solution (WITS) and various issues of Economic Survey were used to compile time series data on real gross domestic product, real export earnings of goods and services, real effective exchange rate, capital goods import, and total international reserve for the years 2001 through 2021. One of the main premises of the pessimistic ideology on the effect of export instability on the domestic economies of developing countries is the idea that such volatility impacts the ability to import and, therefore, investment. There are two sides to the question of whether export instability and investment are connected. Secondly, it is believed that export volatility causes fluctuations in aggregate demand and intensification of inflationary pressures via its effects on producer income and governmental spending. Private investment spending is negatively impacted by inflationary pressures. The combination between export instability and the binding character of the foreign exchange restriction is thought to be the source of a second, related set of factors that drive investment [1].

This discussion's primary goal is to concentrate on the second of the incidental causes of export instability. As compared to the volume of theoretical works in general and the number of research into the causes of export instability in particular, there have only been a very small number of empirical research on the impacts of export volatility. The main focus of the research was on the implications for economic growth that were hypothesised to derive from the relationship between fluctuations in exports and investment spending. The challenges and costs that come with doing empirical research due to the interactive character of the transmission mechanism involved have been adequately emphasised by Lim. The use of summary statistics to define the degree of instability experienced throughout a certain time

period during cross-sectional research adds another layer of complication to the problem. It is feasible to accommodate the shift towards time series analysis of the transmission mechanism that is considered to be operational by understanding instability in terms of a time series of deviations from the temporal trend. Deviations from trend of, say, export earnings have been defined as

y_t= (log Y-loĝ)

Where, for t=1, ……...n

y_t=deviation from trend of export earnings.
Loĝ= the trend values of export earnings.

The validity of the theory about the transmission mechanism has been examined involving two phases, namely that imports of capital goods are impacted by export volatility, which in turn has an impact on domestic investment. The variables are specified in terms of time series of departure from trend. And estimating equation is does given by

$$m_t^k = f(y_t, ir_t) \quad (2)$$

Where, for t=1, …, n with lower case letters indicating deviations from trend

m_t^k= capital goods imports,
y_t= export instability,
ir_t= total international reserves

Since capital goods imports are considered to be a significant portion of investment and export instability is thought to be the source of the causal relationship, the second stage is examined using the same explanatory variables as before in the estimate equation that follows.

$$i_t = f(y_t, ir_t) \quad (3)$$

Where, for t=1, ….., n.
i_t= investment.

The Findings
Based on the previously mentioned data, Table 1 displays the findings of the regression of the income growth rate on export growth, export fluctuation, and real effective exchange rate.

Table 1: Income Growth, Export Growth, Export Instability and Real Effective Exchange Rate

Income Growth/ Export Growth Equation	Constant	Export Growth Instability	Export Instability	Real Effective Exchange Rate	R^2
(1.1) Income Growth Equation elasticity	-4.28.	0.007	5.04	0.086	0.75
		(0.78)	(5.01)	(7.14)	
		0.445	0.0001	0.0	

t = Statistics in parentheses
*= Significant at 5 per cent
**= Siginificant at 1 per ecnt

According to the findings, an unfavourable and statistically negligible influence was shown in the equations by the increase in exports. primarily, the degree to which a rise in exports is translated into an increase in total economic growth depends on how connected the export sector is to the rest of the economy. The export growth elasticity's magnitude, which the equations put as 0.007. There has been a positive connection, albeit it is not that significant, between economic development and export expansion in India during the course of the given two decades. This may be attributable to a variety of different factors. The worsening of global demand, the increase in inflation, the reduction in exports, and the development of global trade conflicts are the primary causes that are contributing to the positive correlation but not that much effective relationship between GDP and exports.

Rashid compiled a number of research to illustrate the process through which export volatility may either boost or impede economic development [10]. The explanation for the negative effects of export volatility was that it reduced the country's capacity to buy capital goods, since increased export instability leads to dwindling foreign reserves. Investment and output both suffer when there is less cash available to put towards new machinery. The following examples highlight the detrimental effects of export volatility: (Figure 1).

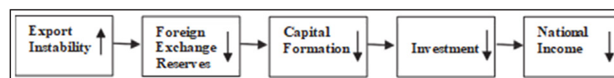

Figure 1: Negative Impact of Exports Fluctuation on Economic Development

The direct relationship shown between export variation and income growth may be explained by the impact of export volatility on savings and consumption. People are forced to increase their savings as a precautionary measure by cutting down on their consumption as exports become less predictable, which lowers their marginal readiness to spend and increases their marginal inclination to save. A rise in savings encourages additional investment, which raises production in the economy. Chaudhary and Qaisrani created a number of econometric models to investigate the impact of export variation on macroeconomic variables using data on the Pakistani economy from 1972 to 1994 [11]. Results indicated that export volatility eventually helped Pakistan's economy, despite early concerns.

The followings highlight the advantages of export volatility: (Figure 2)

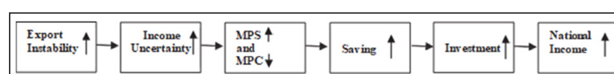

Figure 2: Positive Impact of Exports Fluctuation on Economic Development

The time series components of export fluctuation have a negative and statistically significant effect on economic performance. These findings are consistent with the conclusion reached by Glezakos and Rosen and Shapouri when they examined the effect of export volatility on economic development in all LDCs [4,12]. Equation 1, determination coefficient shows that the export instability accounts for around 5.04 regression line of income growth [13-16]. The premise that volatile exports

hinder the ability to import investment goods, which are crucial for economic growth, is supported by the substantial impact of export volatility on economic development [17,18]. The country's economic performance was positively yet significantly impacted by the REER index. It is standard practise in studies of instability to utilise yearly data [19]. Both (i) $m_t^k = f(y_t, ir_t)$ and (ii) $i_t = f(y_t, ir_t)$ is calculated to provide context for the data (2001 to 2021).

Results for the particular equational forms stated above are shown in Table 2. Due to the lack of data in eq-2, only 19 observations were gathered for this equation. There is an issue with autocorrelation in equation 3, which is identified by the Breusch-Godfrey (BG) test; therefore, after applying 4 order autocorrelations, it is discovered that prob-value of the Chi-square statistics (=Obs*R-squared) is 0.0516. After estimating equation 3 again, it is noted that it took eleven iterations to reach the convergent result; now, the estimated coefficient of AR (4) is statistically significant and free from autocorrelation [20].

Table 2: Specific Form of Equation $m_t^k=f(Y_t,ir_t)$ and $i_t = f(Y_t,ir_t)$

Dependent Variable	Constant	Export Instability	International Reserve	Adjusted R^2	D-W	n
(1.2) m^k	-1.36.	-0.027 (-0.31)	1.137 (22.4.)	0.98	1.58.	19
(1.3) i	-17.55.	4.83. (5.81.)	3.87. (7.90.)	0.80	1.25.	21

t = Statistics in parentheses
n=denotes the number of observations.

The results about the relationship between export volatility and imports of capital goods are inconsistent with the commonly held understanding of the transmission mechanism's early stages. As y has a negative connection with mk and ir has a positive and substantial relationship with mk.

A small but positive correlation exists between y and I that defies the second stage of the transmission process but is compatible with common sense. A strong and positive correlation is shown by the ir coefficient's positive sign.

Conclusions

This study is a meagre attempt to investigate how, in the present economic environment, export volatility affects economic growth. The empirical data presented here refute earlier claims that export performance, particularly regular swings in export growth, positively affects a nation's economic success. Furthermore, the study looks at the two ways that imports of capital goods and gross domestic fixed capital production are thought to be impacted by export volatility. The results, which employ a time series model, show that, contrary to popular belief, the second stage of the transmission mechanism has a direct/positive but statistically insignificant relationship with export instability and a significant relationship with international reserve. Export instability does, however, have a negative effect on capital goods import.

The "Export-led Growth Hypothesis," which holds that more export activity is correlated with higher rates of economic growth, is examined in this study. Regression analysis conducted on the Indian economy revealed a long-run equilibrium association between trade and income/economic growth, but that there was not a significant rise in the relation between the two throughout the period of 2001 to 2021. A weaker-than-expected positive connection between GDP and exports may be attributed to a number of factors, including sluggish global demand, rising inflation, falling exports, and escalating global trade conflicts.

According to the findings, the results show income growth and export instability are positively correlated. This goes against the common thinking since it demonstrates that there is a positive relationship between the two. On the bright side, changes in exports may, in certain years, contribute to higher revenue from exports, which can encourage economic development. This is because exports are one of the primary drivers of global trade. This expansion may be linked to a rise in both investments and job possibilities, in addition to an increase in government income brought in by taxes and tariffs.

The conclusion for India's economic strategy is that, in order to lessen the severity of the problems caused by swings in export levels, it should place more of its focus on those types of products in which it has a significant advantage over its competitors. In order to reduce the likelihood of future instability, it is necessary to do exhaustive research into the major causes of the excessive volatility and the limited growth, and it is also essential to fix any underlying defects.

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