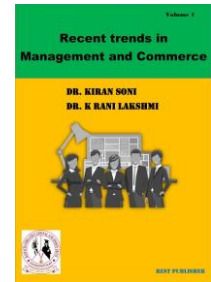




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An Assessment of Ease of Doing Business of India with Top Economies of the Exports and Gross Domestic Product: A causal relationship deriving empirical evidence from India

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Abstract

The World Bank predicts that by 2021 India will become the world's leading economies (World Bank, 2019). The economy of India is considered as an emerging market economy. It is the fifth largest nominal GDP economy in the world and the third largest PPP in the country. India, according to the IMF, ranked 142nd per capita per GDP (nominal) and 119th per GDP (PPP) in 2018. With a population of 1.295 billion Indians, the GDP at market price amounts to \$2.649 trillion. In terms of GDP, India ranks seventh worldwide in April 2015, according to World Economic Outlook, and is projected to rise to 7.5 percent in 2016. (International Monetary Fund, 2015). This paper analyzes developments in Indian exports on the basis of data from 1999-2000 to 2015-16 over the next 10 years, taking into account the projected volume of exports from India from 2016-16 to 2025-26. The results showed the value of exports will increase from Rs.1949745.95 Crores in 2016-17 to Rs. 3039414.07 crores in 2025-26. The formative link among export from India during the time period 2000 to 2016 and Gross Domestic Product was checked in this paper utilizing Granger causality test. The results suggested that consistent causalities between exports and GDP occur in India. The causal directions go directly from economic development to exports.

Key Words : Foreign Trade, Trade deficit , Ganger causality, unit root test

I. Introduction

International trade includes different currencies in the various countries and is governed by legislation, regulations and rules in the countries concerned. Foreign trade acts an engine of growth in the concerned economies. In a globalizing world which is driven by knowledge, technology and innovation are considered as important factors boosting the competitiveness. As a result of globalization, the information technology in India has made rapid strides, especially in software industry.. This paper also tries to find out the recent trends in the Indian foreign trade. An analysis of world economic performance since the 2008 financial crisis shows that while developed economies are facing sluggish GDP growth levels, the EMDEs have seen recovery with a divergent rise. There are elements of risk, uncertainties and market uncertainty in the current global economic scenario. This uncertainty illustrates the effects of falling energy prices and the challenging financial conditions of oil exporters in particular. According to the January 2016 updating of the World Economic Outlook, global growth, which is currently forecast at 3.1% in 2015, is expected to be 3.4% in 2016 and 3.6% in 2017. The IMF World Economic Perspective (2016) generally projects India and the rest of emerging Asia to continue to develop at a robust pace. According to the Economic Survey 2015-16, the GDP growth rate for 2015-16 is forecast to range from 7 percent and 7.6 percent. In the international economic climate, there is unprecedented uncertainty. Markets have started to swing from concerns that the global recovery may fail, and risks of extreme events increase. India stands out as an island of peace and prosperity in this dreary landscape. Its macroeconomic stability is focused on the commitment of the government to fiscal consolidation and low inflation. The economic growth is among the fastest in the world, driven by the redirection of government expenditure towards the requisite public infrastructure. These achievements are not least because the global head winds and the second consecutive season of poor rainfall have accomplished them. In 2014, India is the 19th-largest exporter (with a 1.7 percent share) and the 12th-largest importer (with a 2.4 percent share) of the global economy. India is the 8th biggest exporter in commercial services exports in 2014 (with a 3.2 percent share). Indian trade services exports for 2014-15 stood at 310.33 billion US\$ as against 314.40 billion U.S.\$ in 2013-14 with negative growth of 1.29 percent, while imports in 2014-15 were down to US \$448.03 billion from \$450.20 billion in 2013-14 and a negative rise of 0.48 percent. In 2014-15, the trade deficit stood at \$137.69 billion.

2. Literature review

Academics and policy makers have undertaken numerous studies and analysis on exports, imports and economic development. Several studies have published different findings about the relation between these three variables. Recent studies have focused on VAR and VEC models and methods of cointegration. Our literature review is limited to work focused on the combined effect on economic growth of exports and imports. Saqib et al.,(2013) studied the impact of foreign direct

investment on Economic growth of Pakistan. Given the conflicting data on the effect on the economy of the host country of FDI, they took the case of Pakistan and check it for the host nation. The data used for this analysis ranged from 1981 to 2010. In addition to FDI, the analysis included other parameters like domestic expenditure, trade, inflation and debt. The methodology for evaluating their effect on the economy of Pakistan was restricted to the least square process. The co-integration of the variables has been calculated using the Augmented Dickey Fuller Test and is found to proceed on a long term basis. Their results demonstrated that Pakistan's economic growth is destructively affected by foreign direct investment, while its economy has benefited from domestic investment. Moreover, the debt, trade and inflation of the Nation have had a detrimental effect on its GDP. Esther & Folorunso (2011) analyzed the effect of FDI flows on Nigerian economic development. Their research found that the effect of FDI on economic growth was beneficial. However, they also report that human capital may limit the degree to which FDI positively influences economic growth. Zakia & Ziad (2007) have also examined the effect of the FDI on Jordan's economic growth over the same dependent variable (1976-2003) in accordance with the testing of imports. The estimated results point to the presence of two-way ties between FDI and exports, as well as between imports and production. The findings provided proof of Jordan's FDI and Import-Led Development Hypothesis. Narayanan and Smyth (2009) studied multivariate granger causality between electricity consumption, exports and GDP with special reference to Middle East countries. They found that statistically significant feedback effects occur between these variables for the panel as a whole. The 1% increase in energy demand raises Production by 0.04%, a 1% rise in export by 0.17% and a 1% rise in Output, a 0.95% increase in energy use. The policy implications of this would be to invest in power infrastructure for the whole panel and to strengthen energy efficiency policies in order to prevent decreases in electricity demand that adversely affect economic development. The entire council, which supports exports including non-oil exports, can also support economic growth and increase exports without adversely affecting energy conservation policies. One of the drawbacks of this study is the aggregated nature of the analysis. Various industries have various energy intensities that can over time change the value of a given industry. To this end, few studies examine the relation between energy use and GDP at a disaggregated stage. Such a report that also looks at exports is one way for the future research. The relationship between energy use, export and GDP in other regions of the world may also be addressed in future study. The newly developed Asian countries like China, which consume large quantities of energy and generally have strong export based economic growth rates, will obviously be one candidate. Hussain et al., (2015) analyzed the effect on economic growth in Tunis from 1977-2012 of exports and imports. The research used the long-term approach to Granger Causality and Johansen Cointegration Using Augmented Dickey-Fuller (ADF) and Phillip-Perron (PS) stationary testing, the variable was first implemented in order 1(1). In order to determine the direction of causality among the variables, the Pairwise Granger Causality was performed at least shortly. The findings showed that the causality between exports and imports and between exports and economic growth is unidirectional. These findings suggested that Tunisia's growth was driven both by growth-driven imports and export-led imports. Imports are therefore regarded in Tunisia as the engine of economic development. The complex causal link between exports and economic growth was investigated in both linear and nonlinear Granger causation tests by Ajmi et al. (2015). Statistics on real exports and real gross domestic product were used each year from 1911-2011 in South Africa. No major causalities between exports and GDP is indicated by the linear Granger results. The related VAR is unstable and undermines our reliability in the causal effects of the Granger linear causality study. Many papers address the value of economic growth exports. The results of these studies indicated that exports affect economic growth statistically significantly. We will summarize some of the causality studies which considered the relationship between exports and economic growth. Kalaitzi (2013) has studied the association between exports and economic growth in the United Arab Emirates taking the time period from 1980 to 2010. The study applied the two-stage co-integration test Engle-Granger and Johansen co-integration test to decide if there is or isn't a long-term link between variables under study. Furthermore, the analysis used the Vector Autoregression Model to analyze the causalities of exports and economic development in order to create the Impulsive Reaction Function (IRF) and the Granger Causality test. The results of this study showed that exports of manufactured goods, primary exports and economic growth have a long-term relation. Moreover, the Granger causality test revealed unidirectional causality between generated exports and economic development. Further increase in the degree to which oil exports diversify could accelerate economic growth in the UAE. Through linear and nonlinear Granger causality experiments, Ahdi et al., (2013) explored the complex causal relation between the exports and economic development. The research used South African annual data from 1911 to 2011 on real exports and real gross domestic product. The linear analysis for Granger did not indicate major causalities between exports and GDP. The research therefore used nonlinear approaches to test the causality of Granger between exports and GDP. This used nonlinear Granger causality tests for Hiemstra and Jones (1994) and Panchenko (2005). For the Hiemstra and Jones (1994) study, GDP exports were triggered unidirectionally. Kim and Lin (2009) have analyzed the export composition effect on economic growth, showing that not all exports are equal contributors to economic development. Several developing countries are especially dependent on primary exports, subject to unsustainable price fluctuations. This export category has negligible effects on productivity growth in the majority of cases, while the exports produced have a positive and important impact on economic growth.

Objectives of the study

1. To analyze the trend of Indian exports from 1999-2000 to 2015-16
2. To analyze the causality between GDP and exports from India from 2000 to 2016

Materials and methods

The current research is largely based on the secondary resources from the publications of Government of India, academic journals, books and web sites. Data relating to the period of 1949-1950 to 2015-2016 was used for the analysis. The statistical

properties of both economic growth and exports have been analyzed using the unit root test in this article. Causality between variables was used to assess the directional causality of variables using a Granger causality check.

3. Results and Discussion

1. Unit root test

Data series which are mainly macroeconomic in nature can be distinguished by a stochastic pattern which can be altered by giving first level and second level differencing. The Augmented Dickey-Fuller (ADF) method was used to check the stationary variables. The ADF calculation for the case was conducted where interception is included only in comparison to the case where the intercept and time trend are included.

Table :1 Unit Root Test

Variable	Critical value@1%	Critical value@1%	Level	First difference	Second difference
			ADF	ADF	ADF
GDP	-3.9	-3.06	0.44	-3.81	-4.97
Exports	-3.9	-3.06	0.013	-1.84	-4.38

The findings show that all factors, exports and GDP, are not stationary. They have a root unit, in other words. Instead the test is repeated with both variables for the first discrepancy. The findings show that exports and GDP have become irreversible in the difference of first level. Because the measured values (in absolute value) are higher than the essential (in absolute value) values at the 1% level, the unit dramatically or non-static variable hypothesis can be rejected.

2. Granger Causality Test

Correlation cannot in any significant way clarify the causation of one variable over the other. The old graveyard of econometric research full of throwaway correlations. The positive correlation between the rate of death in the UK and the percentage of marriages that are solemnized in the Church of England is noteworthy example. The Granger (1969) explores whether it can lead to a situation in which past values clarify how much of the present and whether adding lagging values will boost explanation. Granger is said to be triggered by aids in the forecasting of, or equivalently, if the lagged s coefficients are statistically important. Remember that there are numerous cases of two-way causation; Granger causes and Granger causes. It is important to remember that "Granger triggers" does not mean that this is the result or the outcome. Granger's causality tests precedent and knowledge quality, although in the most common use of the word does not itself imply causality. According to Granger, variable 1 is said to trigger another variable 2 if previous and present values of variable 1 help to forecast variable 2. Here exports from India from 2000 to 2016 is said to Granger cause another variable (Gross Domestic Product) if previous and current values of export help to predict GDP. An unpretentious Granger causality test involving two variables, exports and GDP is written as

$$GDP_t = \sum_{i=2}^n \alpha_i \text{Export}_{t-i} + \sum_{j=1}^p \beta_j GDP_{t-j} + U_{1t}$$

$$\text{Export}_t = \sum_{i=2}^n \alpha_i \text{Export}_{t-i} + \sum_{j=1}^p \beta_j GDP_{t-j} + U_{2t}$$

Here null hypothesis is $H_0: \alpha = 0; j=1, \dots, p$, which implies that the exports do not cause an increase in GDP for Granger against the alternative hypothesis is denoted as $H_1: \alpha \neq 0; j=1, \dots, p$, which means Granger triggers GDP for export. Likewise, the checking $H_0: \mu = 0; j=1, \dots, p$, this hypothesis implies that the economic growth of Granger will not affect H1 exports: $\mu \neq 0; j=1, \dots, p$, this theory means GDP causes exports to Granger. When none of the null hypotheses are dismissed, it means that we support the arguments that Granger does not cause GR and that economic growth does not lead to exports. It indicates that the two variables are separate. Rejecting the first hypothesis shows that Granger exports induce economic development. The dismissal of the second theory implies that GDP exports are causal. When all theories are dismissed, the causality between exports and economic growth would be bidirectional.

Table 2 indicates that exports and growth are causally related, in one path where changes in economic growth have an effect on exports rather than the other, where analysis has shown that changes in exports have little influence on economic growth.

Table 2: Granger causality test

Null Hypothesis:	Obs	F-Statistic	Prob.
			0.032451
		8.26233892	82289761
GDP_TRILLION_\$_ does not Granger Cause EXPORTS	13	4748226	548
			0.347824
		1.51827901	18990343
EXPORTS does not Granger Cause GDP_TRILLION_\$_		9800536	72

This means that an economic growth increase or decrease will impact exports at a significant level of 15 per cent. At the other hand, exports do not seem to be the source of economic development for Granger cause. This implies that export knowledge in previous periods can not explain the current economic growth behavior.

3. Descriptive statistics

Table 4: Descriptive statistics

	Exports	GDP (Trillion\$)

Mean	86007783.46	1.289486118
Median	65586352.18	1.217
Maximum	190501108.9	2.29
Minimum	15956177.56	0.468395
Std. Dev.	63729082.89	0.630117908
Skewness	0.515520343	0.080933601
Kurtosis	1.737853612	1.547709895
Jarque-Bera	1.881374699	1.512537841
Probability	0.39035943	0.469414587
Sum	1462132319	21.921264
Sum Sq. Dev.	6.50E+16	6.352777247
Observations	17	17

The table 4 reveals that the variable GDP does not differ from the normal distribution according to the Jarque-Bera test and supports the skeptic hypothesis that it fits the normal distribution. As shown by the impact of sprain values, and an study of mean and median values, the fluctuations in the data on economic growth do not fluctuate considerably. On the other hand, Jarque-Bera test export values are not common. The World Trade Organization (WTO) reduced its estimate for 2015 global market growth to 2.8% compared to 3.3% in April and decreased its estimate for 2016 to 3.9% compared to 4.0%. The expected 3.9 percent rise in trade in 2016 is also below the average of 5 percent over the last 20 years (1995-2015). The WTO downward adjustment is attributed to many factors, including declining demand for imports into China, Brazil and other emerging economies; dropping prices of oil and other commodities; major swings in exchange rates, instability on the stock markets and US uncertainty about monetary policy. In the 2000s, China accounted for half of the world's incremental commodity market. Oil is now approximately \$50 per barrel, half of its 2014 cost. Exporting commodity economies are in dire straits. The crisis is in Brazil and Russia. Most Asian manufacturing economies are part of global supply chains using China as a mixer and have also been hit hard by the slowdown in China. India was a clear exception as it is a net importer of goods and not a large part of world value chains. However, India could also be affected if the world falls into recession. However, trade has risen more slowly since the global financial crisis, not only because world income growth is lower, but also because the trade itself is much less responsive to inflation. Changes in the framework of the trade system, including an increase in protectionism, involve the expansion or contraction of the global marketplace. An study of India's export patterns may provide useful information in this context. The total value of export from India during the period 1999-2000 to 2015-16 is given in Table 1.

Table 5: India's total exports in Rs Lakhs from 1999-2000 to 2015-16

Year	India's total export in Rs Lakhs	Percentage change
1999-2000	15956177.56	
2000-01	20357101.09	27.58
2001-02	20901797.34	2.68
2002-03	25513727.66	22.06
2003-04	29336674.75	14.98
2004-05	37533952.62	27.94
2005-06	45641786.15	21.60
2006-07	57177928.52	25.28
2007-08	65586352.18	14.71
2008-09	84075505.87	28.19
2009-10	84553364.38	0.57
2010-11	113696426.4	34.47
2011-12	146595940	28.94
2012-13	163431829	11.48
2013-14	190501108.9	16.56
2014-15	189634841.8	-0.45
2015-16	171637804.6	-9.49

Source: Government of India ,2016

It is obvious from the table that the highest percentage of growth was recorded in the year 2010-11 (34.47%) and the lowest one during 2015-16 (-9.49%). The compound annual growth rate (CAGR) of India's total exports value from 1999-2000 to 2015-16 is calculated as 14.98%. Indian exports of goods reached a rate of US\$ 304.62 billion in 2011-2012, recording a 21.30 percent growth, compared to a 40.49 percent rise in the previous year. Despite India's recent setback as a result of world-wide slowdown, the Compound Annual Growth Rate (CAGR) was 20.3% between 2004-2005 and 2011-12. In line with the IMF's World Economic Outlook in January 2013, global trade (goods and services) in 2012 dropped to 2.8% compared to 5.9% in 2011. According to IMF estimates, global trade volume growth is expected to rise to 3.8 per cent in

2013. IMF estimated its world production growth to 3.5 per cent in 2013. The developed economies are predicted to rise by 1.4%, while the emerging and developing economies are expected to expand by 5.5% in 2013. The expected growth rates in various countries would decide the export markets. According to WTO International Trade Statistics in 2012, India is the 19th largest exporter in the world with 1.7 percent share and the 12th biggest importer with a 2.5 percent share in 2011. Exports rose by 21.30 percent in April 2011-12. The government has set a US\$ 360 billion export target for 2012-13. In 2012-2013, consumer exports totalled US\$ 265.95 billion (Apr.-Feb.). (Government of India, Department of Trade, 2016) The details about value of exports and imports of India is given in Table 2. The table make it clear that India is always a trade deficit country during the period .

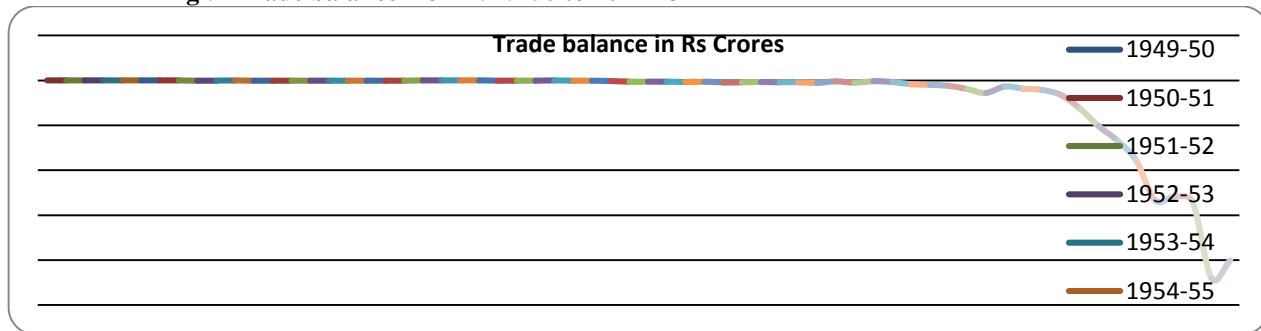
Table 6: India’s trade deficit

Trade Indicators	2012	2013	2014	2015	2016
Export(in US \$ Billion)	309	367	318	316	262
Import(in US \$ Billion)	500	502	466	461	380
Trade deficit	-189	-195	-148	-145	-118

Source: DGFT , RBI Statistics,2016

Trade balance during 2011-12 is US \$ -189 billion and it turns to be US \$ -118 billion , attributed to US \$ 262 billion export and US \$ 380 billion import. When a national corporation manufactures many of the goods in other countries or if the raw materials are transported overseas to the factory, there is a trade deficit. This raises the living standards of the people of a nation for a short time, as they now have access to more competitively priced products and services. It will reduce the risk of inflation as the costs of the goods are lower. A trade deficit can also mean that people in the world feel comfortable and rich enough to buy more than their world generates for a short period of time. (Amdeo Kimberly, 2016). A prolonged trade deficit may have negative effects on the stock market. If a country imports more goods than it exports for a long period of time, the debt basically goes (as would a household).. An study of India’s trade balance from 1949-50 to 2012-13 shows that the trade deficit amounted to about Rs 132 crores in 1949-50 and rose to Rs 16325 in 1995-96.crores and after that it steadily increased and reached Rs 801083 crores during 2012-13. The details of the same are depicted in Figure 1.

Fig :1 Trade balance from 1949-50 to 2012-13



Source: Government of India , 2016

An analysis of compound annual growth rate (CAGR) is often helpful to get a comparative view about exports and imports during different time periods. CAGR of Indian exports and imports during 6 decades from 1949-50 to 2009-10 is provided in Table 3.

Table 7: Compound annual growth rate(CAGR) of Indian Exports and Imports

Sl.No	Time period	CAGR(%)	
		Exports	Imports
1	1949-50 to 1959-60	2.8	1.55
2	1959-60 to 1969-70	8.2	5.07
3	1969-70 to 1979-80	16.33	19.15
4	1979-80 to 1989-90	15.73	3.86
5	1989-90 to 1999-00	19.13	19.8
6	1999-00 to 2009-10	18.12	20.26

Source : Estimated

Pre liberalization period characterizes by slow growth rate of exports where as post globalization period shows a rapid growth rate. There was a marked decrease in the CAGR of imports from 1979-80 to 1989-90 (3.86) due to global economic slow down and changing oil prices, due to cartelization. The projected values of Indian exports are calculated using quadratic trend analysis and is provided in Table 4.

Table 8: Projected values of Indian exports from 2016-17

Year	India's total export in Rs Lakhs	Percentage Change
2016-17	194974595.1	-
2017-18	207082018.6	6.21

2018-19	219189442.1	5.85
2019-20	231296865.6	5.52
2020-21	243404289.1	5.23
2021-22	255511712.6	4.97
2022-23	267619136.2	4.74
2023-24	279726559.7	4.52
2024-25	291833983.2	4.33
2025-26	303941406.7	4.15

Source: Estimated: The projected values of exports show an increasing trend and the compound annual growth rate (CAGR) is 4.55.

4. Conclusion

Trading becomes more organized and productive as civilization progressed around the world. Technology and innovation are being increasingly considered by economists as an important factor of production and competitiveness in a knowledge driven economy in globalizing world. In IMF's World Economic Outlook (January 19, 2016) India and the rest of emerging Asia are generally projected to continue growing at a robust pace. As per Economic Survey 2015-16, the projected growth rate of GDP for the year 2015-16 is likely to be between 7% to 7.6%. During 2012-13 India's exports accounts for Rs.163431829 Lakhs which increases to Rs.171637804.6 Lakhs during 2015-16. From the analysis it is found that value of exports increases from Rs.194974595.1 Lakhs in 2016-17 to Rs. 303941406.7 Lakhs in 2025-26. Even though the rate of increase is not rapid India has a rich prospectus in the foreign trade landscape. This study analysed the role of exports in India's economic growth cycle using Granger causality tests between 2000 and 2016. The causal relationship between export and economic growth was checked using Granger causality test. The findings indicate that specific unidirectional causalities between exports and GDP occur in India. The causal pathways go directly from economic development to exports. In short, this study supported growth-driven exports in India. Efforts should therefore be guided to policies that encourage economic development, such as industrialization and import substitution, to have a greater effect on exports.

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