India's Export: An Analysis of Directional Change using Regional Hirschman Index (RHI) and Trade Intensity Index

Dr. M Rashid Malik *
Prof M.H. Sharieff **

Abstract

Exports play a key role in the economic development of a country. In an open economy, exports serve as an engine to accelerate economic growth. Exports have acquired a special significance in the Indian economy particularly after liberalization. This paper studies the change in direction of exports from India to various countries and regions. This study is based on secondary data. Regional Hirschman Index (RHI) used to identify concentration or diversification of India's exports, and Trade Intensity Index (T) to analyze trade intensity and export potential achieved with a specific region.

Keywords: Exports, Regional Hirschman Index, Trade Intensity Index.

1. INTRODUCTION

Economists Adam Smith and David Ricardo consider international trade as an engine of economic growth. Exports' sector serves as a catalyst agent in sustaining and accelerating economic growth (Aggarwal, 1982). Exports play a very significant role in economic development by generating surplus for investments and financing of essential imports. For any developing country, exports have special importance as they generate employment and accelerate economic activity and earn foreign exchange to import capital goods to undertake manufacturing activities for domestic consumption. The rate of economic growth in developing economies largely depends on the potential and capacity a country can expand its exports.

Countries in South-East Asia and China accelerated their economic growth largely by building their export capacities and by exploiting access to world markets through exports. Thus, it is evident that exports are an important factor for the growth of developing economies and for employment sustenance in developed economies.

Countries trying to promote growth, ignoring export may succeed in the short-run, but can-not sustain growth over a long period of time Sahni (2014). Export intensity and direction can be enhanced and improved by export diversification. Export diversification can help a country to grow rapidly. Export diversification is not only a positive trade objective in sustaining economic growth Brenton *et al*. (2007) but a pre-requisite for economic growth (Economic Commission for Africa, 2007). Export diversification can build

* Assistant Professor, School of Business Studies & Entrepreneurship, Shobhit University, Gangoh (Saharanpur)-247341. e-mail:- malikrashid@fmsbhu.ac.in

** Former Professor of Strategy & IB, IFIM Business School, Bangalore.

resilience to external economic shocks (Siope *et al.*,2012). Delgado (1995) in his study in African countries found that diversifying the agricultural export and the economy across sectors was central to the long-term growth strategies. Imbs and Wacziarg (2003) found that the diversification is a two-stage process in which growth in early stages of development is accompanied by diversification, and a turning point comes when the trend reverses toward increasing specialization. Imbs and Wacziarg's (2003) relationship was later examined and found relevant for developing countries by Cadot *et al.* (2008).

Hausmann *et al.* (2007) proposed export sophistication as a measure for growth and argued that future growth is significantly influenced by current export sophistication. Countries which export products of lesser sophistication than those with comparable incomes will grow more slowly unless they export more sophisticated goods. Export sophistication is basically referred to the diversification of exports into new products and usually with higher value-added. Export diversification is deeply connected to the growth dynamics (UNECA and AUC, 2007, 2011; Karingi and Spence, 2011). Brenton et al. (2007) articulated a convincing case for low income countries to focus on greater differentiation of existing products than to diversify directly into new export categories. Export growth is more dominated by intensifying trade in existing products than to undertaking new export activities (Pacheco and Pierola, 2008; Brenton and Newfarmer, 2009).

After independence in 1947, the major concern of the Indian government was to restrict the imports to reduce the trade deficit, saving foreign exchange for import of capital goods and protection of domestic industries from foreign competition. In other words, the policy of import substitution was adopted. The export promotion was neglected. The ultimate result was skewed development and negligible exports. India faced the foreign exchange reserve crisis in 1991 and its impact forced the Government of India to introduce the policy of economic liberalization. Trade reforms were an integral part of the overall structural reform (RBI, 2001-02). Emphasis was also laid on the promotion of exports. Since 1991, the promotion of exports became an integral part of industrial and development policy. Globalization, creation of the World Trade Organization and trade policy reforms focusing on liberalization, openness, transparency, and digitization have provided an export friendly environment with the simplified procedure for trade facilitation. Access to foreign markets is a key factor in increasing the export of a country. Foreign market access enhances the foreign market potential of a country. Economic liberalization coupled with globalization at that time helped Indian enterprises to access foreign markets and enhance its export potential. With a view to tap and to facilitate access to new markets, government of India launched several export trade promotion schemes such as Focus Market Scheme (FMS), Focus Product Scheme (FPS), Market Linked Focus Product Scheme (MLFPS), Market Development Assistance (MDA), and India Brand Equity Fund (IBEF) in the year 2006. All these schemes have been merged into a single scheme, namely Merchandise Export from India Scheme (MEIS) in the Foreign Trade Policy 2015-2020. This paper is an attempt to study the changes in the direction of exports from India to various countries.

2. RESEARCH METHODOLOGY

The study analyses secondary data which is collected from several national and international databases viz. Ministry of Commerce (Government of India), Director General of Commercial Intelligence and Statistics (DGCI&S), Reserve Bank of India, World Trade Organization (WTO) among others. Time series data available from validated, largely government sources was adopted for analysis. Only total export figures in USD have been taken. No further break up of data on a basket of goods was considered since analysis is based on total export trade of India with other regional economic groupings like ASEAN, EU, etc. Data series of 2001-02 and 2015 -16 were used for comparison and analysis purposes. Specialized indices viz. Regional

(Harfindah) Hirschman Index (RHI), Siope *et. al*. (2012) and Trade Intensity Index (T) were applied to measure the market concentration or diversification and intensity of India's export markets respectively. Export market diversification and export product diversification are two well- known forms of export diversification. We studied export market diversification since geographic or market diversification is more important than product diversification, particularly for developing countries (Pacheco and Pierola, 2008).

3. OBJECTIVES

- To examine the diversification in India's exports to different regions.
- To analyze the changes in the direction of India's exports.
- To study the magnitude of changes that have taken place with respect to the share of India's exports to different regions.

4. DATA ANALYSIS

4.1 Trends in India's Exports

Indian exports averaged USD 4641.91 Million from 1957 to 2016. India's share in total world exports stood at 1.69 in 2015. India's share of world exports declined from a peak of 1.7% in 2014 to 1.6% in 2016 though some advanced economies and peer developing economies and emerging markets have gained share. This suggests that factors like the rising protectionism and incidence of competitive depreciation might have affected the Indian export performance as depressed global demand is common to all exporting countries RBI (2016). Foreign Trade Policy 2015-20 aims to double India's exports share in global exports by 2020.

4.2 Direction of India's Exports

The direction of exports refers to the relative share of various countries or regions in a country's exports. Not just the composition of India's exports has undergone substantial change, but there has been marked a change in the relative share of Indian exports to various countries and regions signifying the new emerging economic relationship. The direction of trade moving towards developing countries, particularly Asia, Africa and Latin American Countries (LAC) was significant. Share of Asia, Africa, and Latin American Countries as a region in India's exports increased from 57% in FY 2006 to 63% in FY 2016.

Table 1: Directional Change in India’s Export over the period 2001-02 to 2015-16 (USD Millions)

Regions	2001-02	2015-16	Directional Change(%)
EU (European Union)	10,155.37	44›510.69	338
North America	9,335.61	45›200.73	384
Latin America	751.95	7›530.76	901
ASEAN (Association of Southeast Asian Nations)	3,457.01	25›195.44	629
GCC (Gulf Council of Countries)	3,798.06	41›697.74	379
South Asia	2,050.38	18›176.9	787
SACU (Sothern African Custom Union)	369.02	3›804.73	931
EFTA (European Free Trade Association)	468.62	1543.46	229

Africa	2886.64	25023.29	767
Asia	13790.03	127595.4	825

It is evident from the table-1 that export to Europe and North America grew only 3.38 and 3.84 times during the period 2001-02 to 2015-16. Similarly, exports to EFTA and GCC also grew marginally 2.29 and 3.79 respectively during the same period. While exports to SACU and Latin America grew spectacularly 9.31 and 9.01 respectively. In the same way, they grew very fast to Asian Countries 8.25 followed by South Asia region 7.87, Africa by 7.67 and ASEAN by 6.29 during the same period.

4.3 Measure of export market concentration vis a vis diversification

Export diversification is the change in the composition of a country's existing export product -mix or export destinations. Export diversification strategy strengthens the country's exports and enables the country to achieve its export potentials. To measure the export market diversification, Regional Hirschman Index (RHI) was used as a standard tool. This index helps to find whether a country's exports are diversifying to new markets and if so, to what extent (Ph.D. Chamber; Siope *et. al*. 2012)). It is calculated as:

- RHI = sqrt [sum (xi / Xt)^2]
- Where, RHI - Regional Hirschman Index
- xi - Exports to the country I
- Xt - Total exports of the country

The highest possible value of market concentration/diversification index (RHI) is 1. This occurs when

total exports are made to only one market.

Table 2: RHI Values

Region	2001-02	2015-16
EU (European Union)	0.23172	0.16987
North America	0.21301	0.17250
Latin America	0.01716	0.02874
ASEAN (Association of Southeast Asian Nations)	0.07888	0.09615
GCC (Gulf Council of Countries)	0.08666	0.15913
South Asia	0.04678	0.06937
SACU (Sothern African Custom Union)	0.00842	0.01452
EFTA (European Free Trade Association)	0.01069	0.00589
Africa	0.06586	0.09550
Asia	0.38538	0.48695

India's Exports Diversification - Crisscross Outcomes. Available at: http://phdcci.in/image/data/Research%20Bureau-2014/Economic%20Developments/paper/Exports%20Diversification.pdf

Regional Hirschman Index (RHI, Table 1) shows that RHI for European Union and North America declined from 0.23172and 0.21301 in the financial year 2001-02 to 0.16987 and 0.17250 in the financial year 2015-16. RHI for EFTA also dropped from 0.01069 in the financial year 2001-02 to 0.00589 in the financial year 2015-16. Which apparently indicates that India's concentration of exports in these markets has reduced and are now tilted towards the other regions.

RHI for Africa has witnessed a significant rise from 0.06586 in the financial year 2001-02 to 0.09550 in the financial year 2015-16 and RHI for Asia has increased from 0.38538 in the financial year 2001-02 to 0.48695 in the financial year 2015-16. Similarly, RHI for GCC has witnessed a significant rise from 0.08666 in FY2001-02 to 0.15913 in FY2015-16 and marginally improved for ASEAN from 0.07888 in the financial year 2001-02 to 0.09615 in financial year 2015-16, Latin America from 0.01716 in financial year 2001-02 to 0.04678 in financial year 2015-16, South Asia from 0.04678 in financial year 2001-02 to 0.06937 in financial year 2015-16 and SACU from 0.00842 to 0.01452 in financial year 2015-16. This analysis clearly shows a shift in India's export share that is export share is increasing to developing economies away from developed countries. This implies that various schemes such as Focus Market Scheme (FMS), Focus Product Scheme (FPS), Market Linked Focus Product Scheme (MLFPS) and Market Development Assistance (MDA) have been successful in diversifying India's exports to the targeted markets. Report of Ph.D. Chamber[1] also confirms that India's exports diversified marginally to non-traditional markets in the last few years. India participates in various trading blocks in Asia and Africa. Reducing trade costs by participation in free trade agreements is found to have positive impacts on export diversification for developing countries (Pacheco and Pierola, 2008). However, there is a possibility that due to lack of technological innovation and industrial up-gradation, share to developed countries is declining or this may be due to slow down in European and American markets. Further, there is another possibility that other countries may be cornering a market share in developed countries even in the slow phase.

4.4 Trade Intensity Index

Trade intensity index (T) was adopted to determine whether the value of trade between two regions/countries is greater or smaller than expected on the basis of their importance in world trade. It is defined as the share of one country's exports to a partner country or region divided by the share of world exports going to the partner country or region. It is calculated as:

$$T_{ij} = (x_{ij}/X_{it})/(x_{wj}/X_{wt})$$

Where x_{ij} and x_{wj} are the values of country i's exports and of world exports to country j and where X_{it} and X_{wt} are country i's total exports and total world exports respectively. An index of more (less) than one indicates a bilateral trade flow that is larger (smaller) than expected, given the partner country's importance in world trade.

The value of India's trade intensity index with the European Union for FY 2015 is 0.31818, which is comparatively low. It implies that given the policy stimulus and strategies, exports to these countries can be increased exponentially. Given the low trade index intensity value with North America for the FY 2015 (0.60667), there is a need for policy correction to reorient our focus to North America. Trade intensity index with the European Free Trade Association (EFTA) is also low (0.16358 FY 2015) as the government treats them as part of EU and no separate initiative has been developed. This low value indicates that there is a need to seriously engaged in trade with EFTA countries. Index Value for CIS countries is 0.21314 for FY 2015. It is very low and probably suggests that India has not been fully able to intensify its trade with these countries in spite of focused market schemes which offer huge potential

If one looks at the trade intensity index of ASEAN countries with India, it is 0.9044 for the FY 2015. However, the RHI value is 0.09615, which indicates how diversified exports are with countries in this regional grouping. This lower Trade Intensity Index indicates that there is still great potential to increase trade with ASEAN Countries. Trade Intensity Index for GCC countries is 3.10253 for the FY 2015. This index of more than one indicates a bilateral trade flow that is larger than expected, given the GCC country's importance in world trade. This high value shows how India has deepened trade with GCC countries. Diversification is low with a value 0.15913. The index value for Africa is 1.75699 for the FY 2015. This index value with Africa is more than one, it probably suggests that India is gaining importance in the trade as far as Africa is concerned. This also shows the success of various focused schemes. This TIJ value (1.01151) for the FY 2015 with Asia (excluding India) indicates that Indian trade is increasing with Asia larger than expected as compared to Asia's share in the world trade.

5. CONCLUSIONS AND SUGGESTIONS

Global dynamics play a very significant role in the trade flow of a country. Developed economies have in the last few years registered a slowdown in economic growth. This has caused imports in advanced economies to moderate coupled with a contraction in demand for imported goods which undoubtedly have impacted exports from India. Trade flows to these regions have been affected, giving way to increased interregional trade. Exports to the European Union, however, appears to be impacted more adversely when compared with India's exports to North America. The reason probably is the economic crises and austerity measures in Italy, Greek, Spain, and Portugal.

The structural shift in India's direction of exports from developed countries i.e. EU and USA to developing to Asia, Africa, and Latin America seems to be the result of export diversification policies undertaken by the Government apart from other developments such as the economic slowdown in Europe and USA in the recent years. Probably there is fear that India may be giving its share to newly emerging economies from Far-East and southeast Asian countries. Also, there is fear that the lack of technology up-gradation required to meet increasing quality and technology products demands from developing market is forcing India to look at other developing countries market. These diversification strategies, by design or through circumstances, have not only stabilized Indian exports in the face of economic turmoil in the major economies of the world but in fact, have boosted Indian exports to a certain extent. Through conscious trade policy, specifically ushered by EXIM policies over the years India has facilitated growth and diversification of exports boosting regional trade which has insulated it from the vulnerabilities and shocks originating in the advanced economies.

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