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Trade Openness and Volatility of India's Exports-an Analysis

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Abstract: *It is widely acknowledged that an economy's vulnerability to exogenous economic shocks is largely determined by its degree of exposure to the global economy—that is, by its degree of economic openness. In this respect it is important to note that the size of impact depends on each country's mix of exports and main trading partners—that is, on its degree of export concentration. By all accounts, higher degrees of export concentration are strongly correlated with greater volatility in export earnings. Present paper focuses on estimating the degree of India's openness and estimating the diversification of India's exports calculating Herfindahl index.*
The findings of the present study suggests increasing integration of Indian economy with world economy since the initiation of reform process in 1991.It rose from 10.30 in 1987-88 to 40.58 in 2013-14. Further the findings of the study are in line with theoretical arguments that economic openness explains the fact that an economy may be vulnerable to external economic shocks as reflected by losses in export revenues and growth slowdowns as the estimated correlation coefficients between variations in degree of openness and variations in earnings from total exports and earnings from manufacturing exports (having largest share in total exports) are high and positive. So far as product diversification of Indian exports is concerned, findings of the study suggest almost no increase in it since 1990-91. Rather the concentration has slightly increased in recent past. Need for increasing product diversification was also realised in Economic Survey 2012-13 after a drastic fall in exports in dollar terms. The Economic Survey 2012-2013 presented by Finance Minister P Chidambaram in Parliament stated, 'growth in exports can only be achieved with greater diversification of products'.
Keywords:*globalisation, Openness, Vulnerability, Export concentration ratio*

I. Introduction

During last few decades, the term globalisation has become a buzz word and a popular term in the lexicon of bureaucrats, Consultants, Journalists and Policy analysts [1].Globalization is a process in which the people, companies, and governments of different nations interact with each other. This interaction results in increasing interdependence among the countries of the world. This results in the growth of cross-border trade of commodities and services, flow of international capital and wide and rapid spread of technologies. This has emanated mostly from the increasing openness of the world's trade and financial markets and ongoing labour and capital flows. The bilateral and multilateral level policy efforts for liberalising the rules governing trade and investment by the governments of various countries have stimulated these phenomena. Greater emphasis on market forces have prompted MNCs to seek out better factor costs and conditions to site their locations outside the state of their origin [2].

Over the past several decades, because of expanded international trade in services as well as primary and manufactured goods and increased portfolio and direct foreign investment, especially on the part of large multinational corporations, the economies of the world have become increasingly linked [3].

'Integration into the world economy has proven a powerful instrument for countries to promote economic growth…..These trends point to the need to liberalize trade further.' [3].

1.1international Trade and Development

International trade has often played a central role in the historical experience of the developing world. Developing countries are generally more dependent on trade than developed countries are. While large countries are understandably less dependent on trade than small countries, at any given size, developing countries tend to devote a larger share of their output as merchandise exports than developed countries.

A number of cross country studies conducted to find the relationship between openness and economic performance have been quite mixed. Some studies found a positive relationship between openness and economic performance, while others found a negative relationship or simply neutral[4].

So far as the theoretical literature on the issue is concerned, here again we find conflicting views. Classical and Neoclassical economists,view foreign trade as an important contributor to the development of a country. Foreign trade is an effective productivity instrument as well as an engine of the growth. In developing countries, the sources are limited. Therefore for the production to take place on the scale of a high and sustainable growth, new sources are needed for production. With the openness, domestic markets face increased international competition and the domestic industries which are unable to compete with international prices tend

to transfer factors of production to the other lines of production and the resultant allocation and structure of production will be more efficient. So the governments of these countries need to take into consideration the international structure and apply a foreign trade policy which directs the allocation of the sources towards the sectors determined by the international demand. Against this liberalised view of some classical economists, there are economists who advocated protectionism for industrialization. They argued that free trade would contribute to the growth only if the countries are at same development levels [5].

The process of economy globalization is also the process of global industrial restructuring and readjustment. Developed countries have been playing a dominant role in the process of economic globalization. Since long, policy makers, politicians and academia have quite often disputed over relationship between openness and economic performance of a country. There is no doubt that through participation in the globalization process, developing countries can better utilise their comparative advantages, introduce advanced technologies, foreign capital and management experience. It also helps in eliminating monopolistic behaviours and strengthening market competition. Nevertheless, while providing more development opportunities for developing countries, the globalisation process is also posing enormous risks. One important risk associate with economic globalisation is the risk of being concussed by unfavourable external factors.

1.2 Openness ofan Economy and Its Vulnerability to External Economic Shocks

It is widely acknowledged that an economy's vulnerability to exogenous economic shocks is largely determined by its degree of exposure to the global economy—that is, by its degree of economic openness [6].Economic openness refers to trade relations with reduced or eliminated tariffs and non-tariff trade barriers. Their effects are reflected in the balance of payments, reflecting the involvement of a national economy in the world frame. Since a commonly used measure of economic openness is the ratio of international trade to GDP, the transmission channels by which economic openness impact vulnerability can be import- or export-related. The economies which are highly dependent on imports-especially strategic imports seem to have more vulnerability to the availability and cost of such imports. According to Briguglio, 2009 as cited in [6] "There is a tendency for small states to be more vulnerable [because of strategic import-dependence] than other groups of countries".

On the other hand, the economies whose dependence on exports is high, seem to be extremely vulnerable to volatility in export earnings and economic growth associated with economic shocks. From an economic perspective, a country's exposure to external economic shocks generally depends on its reliance on exports because export earnings finance imports and also contribute directly to investment and growth. It is important to note, though, that, although the impact of an economic shock is typically registered through losses in export earnings, the size of impact (i.e., the magnitude of trade loss) depends on each country's mix of exports and main trading partners—that is, on its degree of export concentration. In other words, economic openness explains the fact that an economy may be vulnerable to external economic shocks (as reflected by losses in export revenues and growth slowdowns), but the scale of impact depends largely on the degree of concentration of a country's export portfolio. By all accounts, higher degrees of export concentration are strongly correlated with greater volatility in export earnings.

1.3 Literature Review

Several studies have been undertaken in the field of an economy's openness and its effects. Besides, one may also find articles in newspapers, business magazines relating to economy's openness and its impacts. Few of them are mentioned here.Markus Jaeger (2010) in his 'Trade dependence & economic-political vulnerability vary greatly among the BRIC', talks about trade openness and its benefits to economies in terms of medium-term economic growth and wealth generation He also admits that the empirical evidence on this score is somewhat mixed. However, when trade is more open, economies are exposed to greater economic volatility and potentially resulting social instability. More open, less advanced economies are typically more sensitive than less open, more advanced economies. Due to the greater opportunity costs of trade closure and protectionism, it also renders the former more vulnerable to protectionist threats, especially by the latter. Among BRIC countries, China is the BRIC economy that benefits the most from international trade; but it is also the one most vulnerable in terms of trade protectionism[7].

Eduardo A. Cavalloi and Jeffrey A. Frankel's study titled 'Does Openness to Trade Make Countries More Vulnerable to Sudden Stops, or Less? Using Gravity to Establish Causality', makes use of the gravity instrument for trade openness, which is constructed from geographical determinants of bilateral trade. As against the general perception, their study finds that openness indeed makes countries less vulnerable, both to severe sudden stops and currency crashes [8].

Julian di Giovanni & Andrei A. Levchenko examines the mechanisms through which output volatility is related to trade openness. The study used an industry-level panel data set of manufacturing production and

trade. The main findings of the study are: i) those sectors are more volatile which are more open to international trade. ii) Trade is accompanied by increased specialization. These two forces imply increased aggregate volatility. Third, sectors that are more open to trade are less correlated with the rest of the economy, an effect that acts to reduce overall volatility. Finally the study implies that the relationship between trade openness and overall volatility is positive and economically significant [9].

Rakotomanjaka Jose et al.(2014) conducted a study to examine Economic and Environmental Vulnerability and Resilience of four Island States of the Indian Ocean(Comoros, Madagascar, Mauritius and Seychelles).This study looked at vulnerability and resilience indicators for these four Developing Island States and compared them with SIDS (Small Island Developing States} in general. The study finds that for Seychelles and Mauritius, both vulnerability and resilience scores were relatively high. They are both at risk of being harmed by external shocks but their economic governance enables them to manage such shocks to a certain extent. Madagascar and Comoros register relatively lower vulnerability scores, when compared to the other two IODIS. As their economic governance is relatively weak, they run a higher risk of being more affected by external economic shocks [10].

Another study by Mona Haddad et al (2011), titled 'Volatility, Export Diversification, and Policy' explores the relationship among diversification, trade openness, volatility, and policy. The study finds strong evidence for the role of export diversification in reducing the vulnerability of countries to global shocks. Indeed, openness appears to reduce volatility in diversified economies. If countries focus on removing red tape affecting exports and imports and promoting the development of trade-related infra-structure and services sectors, it can make a major contribution to diversifying exports and helping manage outward orientation [11].

Kaitila, Ville &Virkola, Tuomo (2014) in their research paper titled 'Openness, Specialisation and Vulnerability of the Nordic Countries 'analyse to what extent the Nordic economies (Denmark, Finland, Iceland, Norway and Sweden) are vulnerable to external shocks. Their study finds that the Nordic countries are open economies, though not to an exceptional degree. But they find significant heterogeneity across these countries with respect to their vulnerability [12].

1.4 Objectivesofthe Paper

In view of the above, the major objectives of the paper are:

1) To estimate the degree of openness of economy of India
2) To analyse the variations in degree of openness and export earnings.
3) To estimate the diversification of India's overall exports calculating concentration ratio.

1.5 Methodology

The present study is based on secondary data and information collected from a variety of sources.To measure the trade openness, an index of the "degree of openness" (O), has been computed by dividing the sum of exports (X) and imports (M) by GDP(Y) for various years during the period 1987-88 to 2013-14.Thus O = (X+M)/Y.For variations in degree of openness and export earnings, % changes over previous year have been calculated. To estimate the diversification of India's overall exports, the Herfindahl index also known as Herfindahl Hirschman index (HHI) method, a commonly used method of measuring industrial concentration has been used.

II. India's Economic Openness

Macro-economic crisis which India faced in 1991 was a turning point in India's economic history. A major programme of economic reform and liberalization was initiated by the Indian Government in 1991 which reversed the policy direction followed for decades. Reforms in the manufacturing sector had been widespread. These included reductions in average tariff rates, import licensing restrictions for industrial inputs and capital goods and compulsory industrial licensing. India has also opened up a number of sectors to foreign direct investment and simplified its foreign investment regime [13]. Since then, successive Governments have progressively reduced tariff protection and relaxed and simplified India's restrictive import licensing regime. These reforms have led to India's increased openness and integration with the world economy. Openness of the economy means greater integration with rest of the world especially through the mechanism of trade and financial flows.

The Table-1 presents the degree of openness of Indian economy during the time period 1987-88 to 2013-14.

Table 1: Trends in Economic Openness of Indian Economy(Percent)

Year	Degree of Openness	Year	Degree of Openness	Year	Degree of Openness
2013-14	40.58	2004-05	27.03	1995-96	18.67
2012-13	42.55	2003-04	22.96	1994-95	16.51
2011-12	42.30	2002-03	21.78	1993-94	16.03
2010-11	36.31	2001-02	19.28	1992-93	15.13
2009-10	34.11	2000-01	19.95	1991-92	13.64
2008-09	39.35	1999-00	18.53	1990-91	12.92
2007-08	33.45	1998-99	17.64	1989-90	12.55
2006-07	32.88	1997-98	18.08	1988-89	11.09
2005-06	30.24	1996-97	18.16	1987-88	10.30

Source: Calculated by Author using data from Handbook of Statistics on Indian Economy 2013-14, Reserve Bank of India [14]. (See Annexure I&II)

Since the initiation of economic reforms, India's integration with world economy has increased considerably. As the Table reflects, India's trade openness increased almost four times from 10.30 percent to 42.55 percent during the period 1987-88 to 2012-13. However the provisional trade data for 2013-14 shows a slight decline in India's degree of openness. Table-2 presents the average degree of openness which shows that increase in the degree of openness has been more in the period 2005-06 and onwards.Fig.1 and Fig.2 clearly highlights these facts.

Table-2average Degree of Openness

1987-88 to 1989-90	1990-91 to1994-95	1995-96 to 1999-00	2000-01 to 2004-05	2005-06 to 2009-10	2010-11 to 2013-14
8.49	14.85	18.22	22.20	34.01	40.44

Source: Author's Calculation based on Table-1

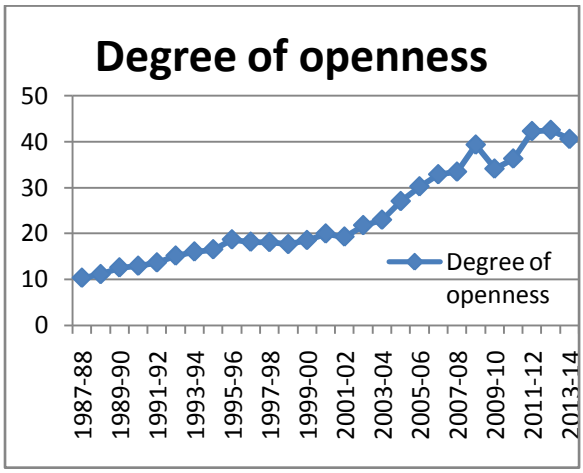


Figure-1

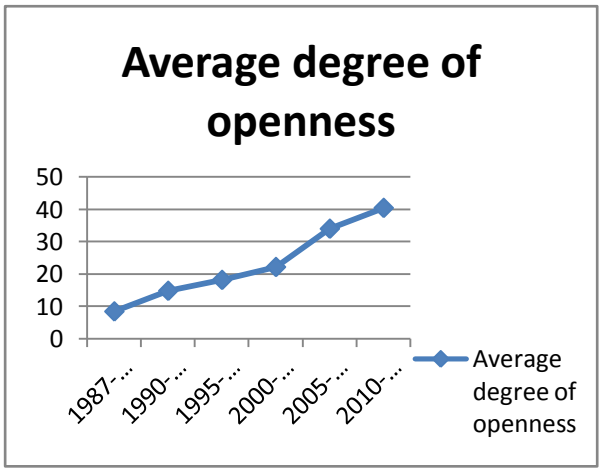


Figure-2

Source: Author's Compilation

III. Variations In Economic Openness And India's Export Earnings

As per theoretical literature, Economic openness explains the fact that an economy may be vulnerable to external economic shocks as reflected by losses in export revenues and growth slowdowns. This section of the paper examines the relationship between variations in degree of openness of India and variations in export earnings. Here, it is important to note that actual export outcomes does not depend upon degree of openness alone. Rather it depends on many other factors both external and internal. Therefore, an exact quantification of the relative impact of openness vis-à-vis other factors on India's export performance is not the objective of this study. The study merely concentrates on the modest task of exploring whether in any way India's export performance is related to India's openness.

Table-3 shows the receipts from exports as percent of Gross Domestic Product (GDP) over the period 1970-71 to 2013-14. During the two decades prior to reforms initiated in 1991, exports as percent of GDP were almost stagnant but in the following decades after 1991 reforms exports gained momentum. In the decade 1990-91 to 1999-00 exports as percent of GDP increased by 3.3 percentage points and thereafter the increase was by

4.13 percentage points in the decade 2000-01 to 2009-10 which remained at the same level during last four year period i.e.2010-11 to 2013-14.

Table-3 Growth in Exports(Percent of GDP) Average

Period	Exports/GDP	Change over previous period
1970-71 to 1979-80	4.38	-
1980-81 to 1989-90	4.69	0.31
1990-91 to 1999-00	7.99	3.3
2000-01 to 2009-10	12.12	4.13
2010-11 to 2013-14	16.25	4.13

Source: Author's calculation, using data from Handbook of Statistics on Indian Economy 2013-14

Table- 4 Variations in Degree of Openness and Export Earnings(%change over previous year)

Year	Degree of Openness	Export Earnings				
		Primary Products	Manufactured goods	Petroleum Products	Others	Total Exports
1	2	3	4	5	6	7
2013-14	-4.63	15.05	16.77	14.95	9.76	15.90
2012-13	0.59	15.11	12.02	23.47	-38.74	11.48
2011-12	16.50	47.07	23.44	41.92	5.59	28.26
2010-11	6.45	19.49	31.73	42.05	106.70	35.17
2009-10	-13.32	7.47	-3.52	7.70	18.93	0.57
2008-09	17.64	5.05	36.61	8.06	113.22	28.19
2007-08	1.73	24.53	7.90	35.11	16.00	14.71
2006-07	8.73	22.85	19.61	64.01	25.22	25.28
2005-06	11.88	19.07	17.73	64.10	9.34	21.60
2004-05	17.73	33.84	22.46	91.52	17.66	27.94
2003-04	5.42	7.99	14.41	31.50	49.74	14.98
2002-03	12.97	23.32	22.38	23.37	3.04	22.06
2001-02	-3.36	4.94	1.46	18.32	-0.27	2.68
2000-01	7.66	15.16	21.82	4954.44	137.82	27.58
1999-00	5.05	-3.00	18.67	-55.05	36.87	14.17
1998-99	-2.43	2.02	9.98	-71.32	10.58	7.42
1997-98	-0.44	0.16	12.91	-23.33	29.46	9.50
1996-97	-2.73	17.51	10.00	12.65	6.83	11.72
1995-96	13.08	48.26	23.98	15.97	21.81	28.64
1994-95	2.99	6.19	22.63	4.89	10.11	18.53
1993-94	5.95	37.43	28.49	-9.50	58.38	29.92
1992-93	10.92	10.13	25.44	34.93	26.73	21.90
1991-92	5.57	31.31	39.00	8.96	-22.69	35.27
1990-91	2.95	20.00	16.99	34.58	-4.07	17.72
1989-90	13.17	37.67	36.14	38.02	45.24	36.70
1988-89	7.67	14.59	37.78	-22.19	28.81	29.08
1987-88	-	-	-	-	-	-
Correlation Coefficient(r)		0.51(Column 2 &3) 0.65(col.3 & 7)	0.71(Column 2 &4) 0.92(col.4 &7)	0.07(Column 2 &5) 0.15(col 5 &7)	0.29 (Column 2 &6) 0.39(col.6 & 7)	0.77 (Column 2 &7)

Source: Author's Calculation based on Handbook of Statistics on Indian Economy 2013-14 (see Annexure-I and Annexure-II)

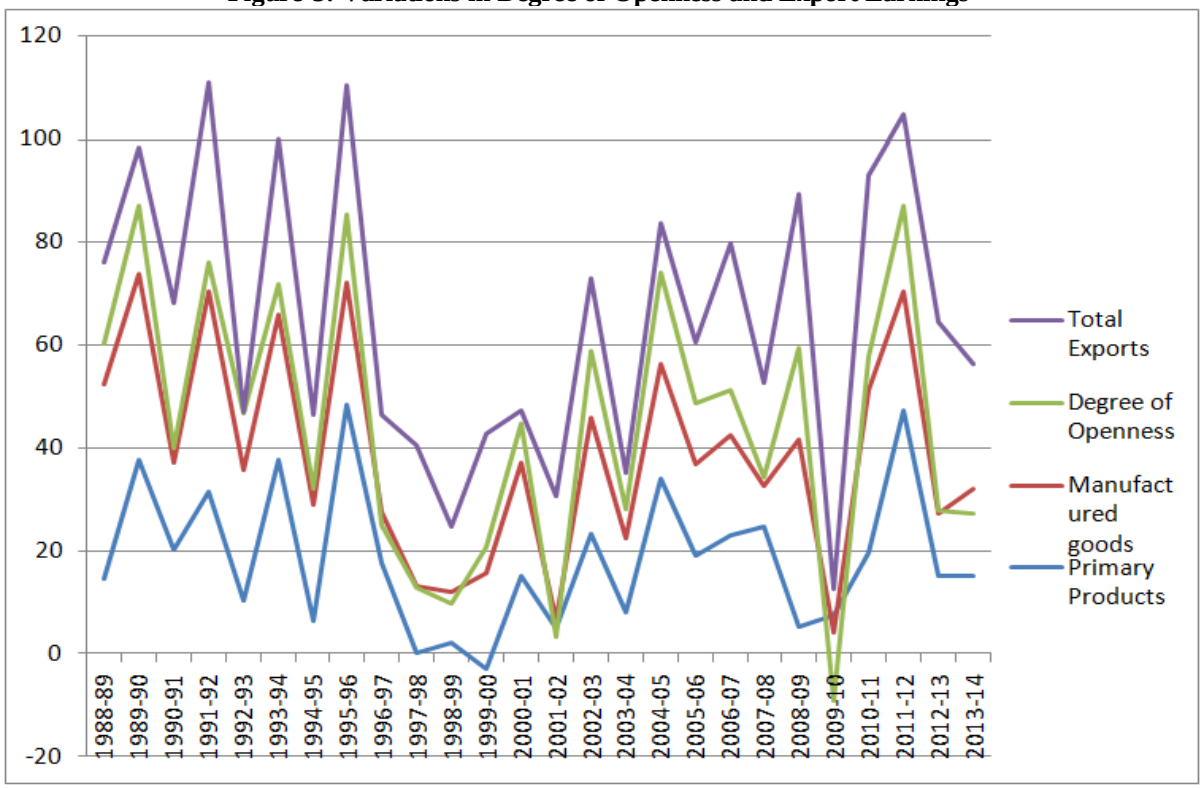
Note: Due to change in commodity classification since 1987-88, prior data are not strictly comparable.

Table-4 presents the figures for year to year variations in degree of openness and export earnings from broad commodity groups and the correlation between degree of openness and export earnings from respective heads.

The data presented in Table-4 points out that highest correlation exists between variations in degree of openness and variations in earnings from manufacturing exports. Same kind of high correlation exists between variations in degree of openness and variations in total export earnings. Out of other components of export earnings, the correlation coefficient between variations in degree of openness and variations in earnings from primary products occupies second highest level. Variations in petroleum products export earnings seem to have no correlation with degree of openness. In this respect, in future research role of other determinant factors needs to be examined. Here it is to note that if we examine the correlation of variation in export earnings from broad commodity groups with degree of openness, the estimated coefficient is highest in respect of manufacturing and next highest coefficients is for primary products. The above relationships are also highlighted through Fig.3 (Stacked line chart). On exploring the reasons behind this, we find that theoretical arguments provide an

explanation for it. Fluctuations in export earnings are positively correlated with degree of openness. Since manufacturing exports are constantly having a dominant share in total exports, a higher correlation has been found both between variations in degree of openness and variations in earnings from manufacturing exports and also between variations in earnings from manufacturing exports and variations in total export earnings. Similarly, till 2006-07, Primary products occupied the second place from top in total export earnings.

Figure-3: Variations in Degree of Openness and Export Earnings



IV. Diversification Of India's Exports

As discussed in section-I, an economy's vulnerability to economic shocks depends largely on the degree of concentration of a country's export portfolio. By all accounts, higher degrees of export concentration are strongly correlated with greater volatility in export earnings [6].Theoretically, it is well argued that the instability of export earnings can be reduced through export diversification. If composition of exports is judiciously designed, variability of earnings from one subset of exports is wholly or largely offset by that from another subset of exports. It tends to reduce the uncertainty in respect of a country's capacity to finance a given, or higher, level of imports[15].In the present study, an attempt has been made to measure the diversification/ concentration of India's overallexports across broad commodity groups. For this purpose, TheHerfindahlindex also known as Herfindahl Hirschmanindex (HHI) method, a commonly used method of measuring industrial concentration has been used. The index has been calculated taking into account 19 major export items across all commodities groups-Primary. Manufactured products, petroleum products and others. The formula for calculating HHI is:

HHI= $\sum_{i=1}^{n}(Si^2)$ where Si is share of ith product in total export earnings.

Table-5 presents the HHI index of Indian exports during the period 1987-88 to 2013-14.

Table-5product Diversification/Concentration of Indian Exports

Year	HHI	Year	HHI	Year	HHI
2013-14	1098	2004-05	912	1995-96	1114
2012-13	1121	2003-04	942	1994-95	1072
2011-12	1030	2002-03	980	1993-94	1093
2010-11	970	2001-02	995	1992-93	1044
2009-10	972	2000-01	1006	1991-92	1045
2008-09	911	1999-00	1181	1990-91	1058
2007-08	946	1998-99	1169	1989-90	1077
2006-07	889	1997-98	1108	1988-89	1136
2005-06	898	1996-97	1116	1987-88	1127

Source: Author's Calculation based on Handbook of Statistics on Indian Economy 2013-14(Annexure-II)

If the value of HHIindex is less than 1000, market structure i.e. Indian exports in our case, can be treated as unconcentrated/diversified. If it is in the range 1000 to 1800, exports structure would indicate moderate concentration. Throughout the period of study the index is less than 1800 which indicates that in overall sense, exports structure is not highly concentrated. It is also in line with general perception that during the periods of global slowdown, however the effects were there on Indian exports and growth of economy but these effects were not highly significant. The HHI index figures presented in table-5 indicates that compared to 1990-91 & 1991-92 when the reform process started, the index does not show any fall or increased diversification, and rather it increased slightly indicating higher concentration. Though the structure of Indian exports has changed over time where share of some products has declined replaced by increasing share of some other items but concentration index did not change much.

V. Conclusion

Since the initiation of reform process in 1991, there is clear indication that integration of Indian economy with world economy has increased constantly. It rose from 10.30 in 1987-88 to 40.58 in 2013-14. Further the findings of the study are in line with theoretical arguments that economic openness explains the fact that an economy may be vulnerable to external economic shocks (as reflected by losses in export revenues and growth slowdowns [6], as the estimated correlation coefficients between variations in degree of openness and variations in earnings from total exports and earnings from manufacturing exports (having largest share in total exports) are high and positive. So far as product diversification of Indian exports is concerned, the findings of the study suggest almost no increase in it since 1990-91. Rather the concentration has slightly increased in recent past. Need for increasing product diversification was also realised in Economic Survey 2012-13 since in 2012-13 there was a drastic fall in exports in dollar terms. In rupee terms too although exports showed an increase in absolute terms, the rate of growth fell significantly. As cited in [16], The Economic Survey 2012-2013 presented by Finance Minister P Chidambaram in Parliament stated, 'growth in exports can only be achieved with greater diversification of products'. The survey further stated that India has been fairly successful in diversifying its export markets from developed countries like the US and Europe to Asia and Africa, which has helped to a great extent in weathering the global crisis of 2008 and the recent global slowdown. However, in terms of product diversification, a lot more needs to be done.

References

[1]. Singh, K. (2005). Issues of globalisation: An analytical perspective in V.B. Jugale, (Ed.) World Trade Organisation and Indian economic reforms. New Delhi: Serial Publications.

[2]. Export-Import Bank of India (2011). Openness and Growth of the Indian Economy: An Empirical Analysis. Occasional Paper No. 150. August. Retrieved December 24, 2014 from www.eximbankindia.in/sites/default/files/F.ull%20OP/op150.pdf

[3]. Michael P. Todaro& Stephen C. Smith (2013).Economic Development. New Delhi, India. Pearson.

[4]. SimorangkirIskandar (2006). The Openness and Its Impact to Indonesian Economy: A SVAR Approach. Centre for Central Banking Education and Studies, Bank Indonesia. November 6. Retrieved January 5, 2015 from vanderbilt.edu/econ/conference/gped-conference-06/.../iskandar.pdf

[5]. Mercan, M., Gocer, I., Bulut, S. and Dam, M. (2013). The Effect of Openness on Economic Growth for BRIC -T Countries: Panel Data Analysis. Eurasian Journal of Business and Economics, 6 (11). pp. 1-14. Retrieved December 28, 2014.

[6]. UNDP (2011). Export Dependence and Export Concentration. In UNDP, Towards Human Resilience: Sustaining MDG Progress in an Age of Economic Uncertainty, United Nations Development Programme. September.

[7]. Markus Jaeger (2010). Trade dependence & economic-political vulnerability vary greatly among the BRIC. Deutsche Bank Group. Retrieved January 27, 2014 from www.dbresearch.com/MAIL/DBR.../PROD0000000000257911.xhtm

[8]. Eduardo A. Cavalloi and Jeffrey A. Frankel (2004). Does Openness to Trade Make Countries More Vulnerable to Sudden Stops, or Less? John F. Kennedy School of Government, Harvard University. Retrieved April, 27, 2015 from www.iadb.org/res/publications/pubfiles/pubS-262.pdf

[9]. Julian di Giovanni & Andrei A. Levchenko (2009). Trade Openness and Volatility. The Review of Economics and Statistics. Vol. 91, No. 3. Retrieved April 27, , 2015 from www.mitpressjournals.org › List of Issues

[10]. Rakotomanjaka Jose, Mela Cynthia, Cliff Gonzalve& Sheik Mohammed Ali (2014). The Development of Economic and Environmental Vulnerability and Resilience Indicators for Island Developing States-An overview of four Island States of the Indian Ocean: Comoros, Madagascar, Mauritius and Seychelles. Indian Ocean Commission. 2014. Retrieved April, 27, 2015 from www.commissionoceanin

[11]. Mona Haddad et al. (2011).Volatility, Export Diversification and Policy, in 'Managing Openness Trade and Outward-Oriented Growth after the Crisis'. The International Bank for Reconstruction and Development/the World Bank. Retrieved April, 27, 2015 from www-wds.worldbank.org/.../608100PUB0Mana10Box358332B01PUBLIC

[12]. Kaitila, Ville &Virkola, Tuomo (2014). Openness, Specialisation and Vulnerability of the Nordic Countries. ETLA Reports No 21.March. Retrieved April, 27, 2015 from http://pub.etla.fi/ETLA-Raportit-Reports-21.pdf

[13]. WTO (1998). Trade policy review - India 1998. World Trade Oranisation. Retrieved January 15, 2015 from www.wto.org/english/tratop_e/tpr_e/tp71_e.htm

[14]. RBI (2014). Handbook of Statistics on Indian Economy 2013-14, Reserve Bank of India.

[15]. DeRosa, Dean A. 1992. Increasing export diversification in commodity exporting countries: a theoretical analysis**.** International Monetary Fund Staff Papers 39(3): 572-595.

[16]. NayanimaBasu (2013). Diversification of products a must. Business Standard. 28th February. Retrieved January 27, 2014 from www.business-standard.com/.../diversification-of-products-a-must-11302.

Annexure-I

Table-A1 (Base Year: 2004-05)(Rs. Billion)

Year	GDP at Market Prices	Year	GDP at Market Prices	Year	GDP at Market Prices
2013-14	113550.7	1998-99	18033.78	1983-84	2290.21
2012-13	101132.8	1997-98	15723.94	1982-83	1966.44
2011-12	90097.22	1996-97	14192.77	1981-82	1758.05
2010-11	77841.15	1995-96	12267.25	1980-81	1496.42
2009-10	64778.27	1994-95	10455.9	1979-80	1257.29
2008-09	56300.63	1993-94	8913.55	1978-79	1146.47
2007-08	49870.9	1992-93	7745.45	1977-78	1058.48
2006-07	42947.06	1991-92	6738.75	1976-77	934.22
2005-06	36933.69	1990-91	5862.12	1975-76	867.07
2004-05	32422.09	1989-90	5019.28	1974-75	807.7
2003-04	28415.03	1988-89	4368.93	1973-74	684.2
2002-03	25363.27	1987-88	3682.11	1972-73	562.14
2001-02	23558.45	1986-87	3239.49	1971-72	509.99
2000-01	21774.13	1985-86	2895.24	1970-71	476.38
1999-00	20231.3	1984-85	2566.11	1969-70	446.05

Source: Handbook of Statistics on Indian Economy 2013-14, Reserve Bank of India

Annexure-II

Table A-1: Exports of Principal Commodities (Rs.Billion)

Commodity / Year	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
1	2	3	4	5	6	7	8	9
I. Primary Products	**291.46**	**282.71**	**325.56**	**341.65**	**421.33**	**455.00**	**608.97**	**725.08**
A. Agriculture and Allied Products	**253.87**	**243.01**	**272.88**	**281.44**	**324.73**	**346.16**	**380.78**	**452.20**
1. Tea	22.65	17.85	17.89	17.19	16.52	16.37	18.40	17.31
2. Coffee	17.28	14.35	11.85	10.95	9.94	10.86	10.69	15.89
3. Rice	62.81	31.26	29.32	31.74	58.31	41.68	67.69	62.21
4. Wheat	0.01	0.00	4.15	13.30	17.60	23.91	14.60	5.58
5. Cotton Raw including Waste	2.07	0.77	2.21	0.43	0.50	9.42	4.23	29.04
6. Tobacco	7.62	10.09	8.67	8.08	10.23	10.97	12.55	13.31
7. Cashew including Cashew Nut Shell	16.32	24.61	20.54	17.94	20.62	17.05	24.89	25.93
8. Spices	16.33	17.67	16.18	14.97	16.56	15.44	18.83	21.16
9. Oil Meals	19.42	16.38	20.45	22.63	14.87	33.48	31.78	48.75
10. Fruits and Vegetables	5.40	6.43	8.43	10.55	11.88	17.92	17.91	21.34
11. Processed Fruits, Juices, Miscellaneous Processed Items	7.13	8.53	13.18	12.37	14.84	14.02	12.77	15.89
12. Marine Products	43.69	51.25	63.67	58.98	69.28	61.06	64.69	70.36
13. Sugar and Mollases	0.24	0.40	5.05	17.82	18.15	12.36	1.55	5.98
14. Meat and Meat Preparations	7.88	8.19	14.70	11.93	13.77	17.14	19.05	27.50
15. Other Agriculture and Allied Products	25.03	35.23	36.60	32.57	31.67	44.47	61.15	71.96
B. Ores and Minerals	**37.59**	**39.70**	**52.67**	**60.21**	**96.60**	**108.85**	**228.19**	**272.88**
1. Iron Ore	16.16	11.75	16.34	20.34	42.00	51.73	147.26	168.29
2. Mica	0.43	0.42	0.42	0.56	0.41	1.06	0.63	0.77
3. Other Ores and Minerals	21.00	27.52	35.92	39.31	54.19	56.06	80.30	103.83
II. Manufactured Goods	**1085.06**	**1287.61**	**1568.58**	**1591.46**	**1947.65**	**2228.29**	**2728.72**	**3212.61**
A. Leather and Manufactures	**69.87**	**68.91**	**88.83**	**91.10**	**89.45**	**99.39**	**108.81**	**119.44**
B. Chemicals and Related Products	**168.67**	**203.95**	**268.89**	**288.62**	**360.80**	**434.06**	**559.11**	**653.90**
1. Basic Chemicals, Pharmaceuticals &	111.68	133.82	167.39	176.32	225.45	268.62	320.77	404.09
2. Plastic and Linoleum Products	19.84	26.16	41.81	47.09	59.12	80.54	136.27	124.82
3. Rubber, Glass, Paints, Enamels and	26.56	30.06	42.79	46.95	57.99	68.37	79.06	93.20
4. Residual Chemicals and Allied	10.59	13.90	16.91	18.26	18.24	16.53	23.02	31.78
C. Engineering Goods	**187.80**	**223.25**	**311.50**	**331.83**	**437.15**	**570.05**	**779.49**	**961.57**
1. Iron & Steel	24.36	36.10	46.98	42.83	89.82	113.86	176.18	157.10
2. Manufacture of Metals	43.75	53.11	72.08	76.50	89.42	111.50	152.83	187.42
3. Machinery and Instruments	48.59	51.27	72.19	82.70	97.20	127.58	167.12	224.80
4. Transport Equipnment	32.05	35.11	45.31	48.69	64.55	89.88	127.14	191.39

5. Electronic Goods	21.15	29.51	48.04	55.86	60.63	79.42	82.31	96.21
6. Other Engineering Goods	17.90	18.16	26.91	25.25	35.54	47.81	73.91	104.65
D. Textile and Textile Products	**373.01**	**425.62**	**515.55**	**486.77**	**562.21**	**587.79**	**609.06**	**726.18**
1. Cotton Yarn, Fabrics, Madeups, etc.	116.62	133.88	158.10	146.55	162.18	156.00	155.02	174.65
2. Natural Silk Yarn, Fabrics, Madeups,	7.50	10.63	14.46	13.64	15.20	17.45	18.20	19.15
3. Manmade Yarn, Fabrics, Madeups, etc.	29.45	35.16	48.36	50.79	66.39	80.93	88.19	86.68
4. Manmade Staple Fibre	0.83	1.89	1.67	1.12	2.21	2.76	3.95	3.62
5. Woolen Yarn, Fabrics, Madeups, etc.	3.14	2.17	2.85	2.49	2.46	2.68	3.14	3.78
6. Readymade Garments	183.64	206.49	254.41	238.78	275.37	286.34	294.81	381.54
7. Jute & Jute Manufactures	5.82	5.45	6.91	6.12	9.08	11.14	12.41	13.12
8. Coir & Coir Manufactures	3.17	2.00	2.21	2.95	3.55	3.57	4.74	5.90
9. Carpets	22.87	27.95	26.57	24.33	25.78	26.91	28.60	37.75
(a) Carpet Handmade	17.22	21.61	20.42	17.88	19.41	25.71	27.32	36.71
(b) Carpet Millmade	4.31	4.89	5.05	4.74	5.41	0.00	0.00	0.00
(c) Silk Carpets	1.34	1.45	1.11	1.72	0.96	1.20	1.27	1.03
E. Gems and Jewellery	**249.45**	**325.09**	**337.33**	**348.45**	**437.01**	**485.86**	**618.34**	**687.53**
F. Handicrafts (excluding Handmade	**26.64**	**28.97**	**30.22**	**26.18**	**38.01**	**22.96**	**16.96**	**20.45**
G. Other Manufactured Goods	**9.63**	**11.82**	**16.26**	**18.52**	**23.02**	**28.18**	**36.96**	**43.55**
III. Petroleum Products	**3.76**	**1.69**	**85.42**	**101.07**	**124.69**	**163.97**	**314.04**	**515.33**
IV. Others	**17.25**	**23.61**	**56.15**	**56.00**	**57.70**	**86.40**	**101.66**	**111.16**
Total Exports	**1397.53**	**1595.61**	**2035.71**	**2090.18**	**2551.37**	**2933.67**	**3753.40**	**4564.18**

(Continued)

Table A-2: Exports of Principal Commodities (Contd.) (Rs.Billion)

Commodity / Year	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
1	10	11	12	13	14	15	16	17
I. Primary Products	**890.78**	**1109.26**	**1165.26**	**1252.34**	**1496.47**	**2200.79**	**2533.39**	**2914.56**
A. Agriculture and Allied Products	**573.92**	**742.09**	**806.49**	**841.36**	**1102.96**	**1795.83**	**2227.42**	**2575.59**
1. Tea	19.70	20.34	26.89	29.44	33.54	40.79	47.19	48.32
2. Coffee	19.69	18.72	22.56	20.32	30.10	45.35	47.11	47.97
3. Rice	70.36	117.55	111.64	112.55	115.86	241.09	338.58	467.93
4. Wheat	0.35	0.00	0.02	0.00	0.01	10.23	105.29	92.57
5. Cotton Raw including Waste	61.08	88.65	28.66	95.37	131.60	216.24	202.77	222.48
6. Tobacco	16.85	19.32	34.61	43.44	39.85	40.06	50.30	61.34
7. Cashew including Cashew Nut Shell	25.07	22.35	29.31	28.29	28.53	44.50	40.97	51.35
8. Spices	31.58	43.15	63.38	61.57	80.43	132.20	153.65	159.81
9. Oil Meals	55.04	81.40	102.69	78.32	110.70	117.96	165.20	170.34
10. Fruits and Vegetables	1.22	30.66	45.19	53.56	49.05	57.52	69.31	98.85
11. Processed Fruits, Juices, Miscellaneous Processed Items	18.36	21.36	31.77	32.55	36.69	54.89	69.31	94.38
12. Marine Products	80.01	69.27	70.66	99.00	119.17	165.85	188.41	306.17
13. Sugar and Mollases	32.61	56.63	45.31	1.30	56.33	89.71	88.00	72.73
14. Meat and Meat Preparations	33.14	37.50	53.71	62.86	89.60	141.11	179.03	272.47
15. Other Agriculture and Allied	108.87	115.19	140.08	122.79	181.48	398.32	482.30	408.88
B. Ores and Minerals	**316.86**	**367.17**	**358.77**	**410.98**	**393.51**	**404.97**	**305.97**	**338.98**
1. Iron Ore	176.56	234.00	217.25	283.66	214.16	221.84	89.85	95.62
2. Mica	0.76	0.88	1.36	1.32	1.89	2.38	2.76	3.04
3. Other Ores and Minerals	139.54	132.30	140.16	126.00	177.46	180.75	213.36	240.32
II. Manufactured Goods	**3842.61**	**4145.99**	**5664.02**	**5464.56**	**7198.63**	**8885.99**	**9954.41**	**11623.83**
A. Leather and Manufactures	**136.50**	**141.01**	**163.55**	**159.46**	**178.18**	**229.72**	**265.97**	**345.17**
B. Chemicals and Related Products	**784.42**	**853.28**	**1044.42**	**1086.87**	**1315.44**	**1778.16**	**2126.69**	**2503.25**
1. Basic Chemicals, Pharmaceuticals &	495.88	561.73	718.80	748.06	879.59	1175.48	1430.74	1666.32
2. Plastic and Linoleum Products	147.18	137.63	138.17	159.13	212.97	299.11	337.30	408.92
3. Rubber, Glass, Paints, Enamels and	107.37	116.21	137.62	130.59	163.84	226.58	276.82	326.60
4. Residual Chemicals and Allied	33.99	37.71	49.83	49.09	59.05	77.00	81.83	101.41
C. Engineering Goods	**1337.90**	**1504.35**	**2174.82**	**1815.72**	**2648.91**	**3250.72**	**3556.99**	**4207.27**
1. Iron & Steel	237.05	219.28	267.81	171.85	232.97	315.71	339.20	454.73
2. Manufacture of Metals	229.92	283.89	347.17	262.03	385.28	459.19	546.77	586.64
3. Machinery and Instruments	304.20	367.50	503.42	452.56	539.42	685.82	832.87	982.08
4. Transport Equipment	223.98	282.82	512.98	466.10	731.21	1013.11	999.03	1297.61
5. Electronic Goods	129.14	135.32	313.01	258.95	373.78	424.19	438.45	462.17

6. Other Engineering Goods	213.61	215.53	230.44	204.22	386.25	352.70	400.67	424.04
D. Textile and Textile Products	**786.13**	**782.09**	**920.62**	**941.89**	**1103.75**	**1343.12**	**1488.82**	**1904.37**
1. Cotton Yarn, Fabrics, Madeups, etc.	190.89	187.34	189.30	174.79	263.61	326.12	409.47	539.14
2. Natural Silk Yarn, Fabrics,	20.00	15.53	16.70	14.36	17.05	9.99	9.09	9.56
3. Manmade Yarn, Fabrics, Madeups,	99.75	116.63	139.19	170.93	194.90	242.94	246.79	310.27
4. Manmade Staple Fibre	8.89	11.22	11.72	16.91	19.20	27.53	27.73	34.91
5. Woolen Yarn, Fabrics, Madeups,	3.86	3.74	4.57	4.25	5.01	7.25	6.64	6.85
6. Readymade Garments	402.37	390.01	502.94	507.91	528.61	656.12	703.43	904.02
7. Jute & Jute Manufactures	11.78	13.19	13.76	10.33	20.92	22.26	21.24	22.96
8. Coir & Coir Manufactures	6.60	6.45	6.81	7.60	7.26	10.18	10.69	13.95
9. Carpets	41.99	37.98	35.65	34.82	47.18	40.71	53.74	62.71
(a) Carpet Handmade	40.67	37.26	35.06	34.42	47.07	40.51	53.53	62.56
(b) Carpet Mill made	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(c) Silk Carpets	1.32	0.72	0.59	0.41	0.12	0.20	0.21	0.16
E. Gems and Jewellery	**722.95**	**792.28**	**1285.75**	**1375.68**	**1844.20**	**2148.89**	**2361.62**	**2484.65**
F. Handicrafts (excluding Handmade	**19.82**	**20.46**	**13.84**	**10.67**	**11.71**	**13.32**	**11.10**	**17.13**
G. Other Manufactured Goods	**54.89**	**52.52**	**61.02**	**74.27**	**96.45**	**122.07**	**143.22**	**161.99**
III. Petroleum Products	**845.20**	**1141.92**	**1233.98**	**1328.99**	**1887.79**	**2679.15**	**3307.90**	**3802.50**
IV. Others	**139.20**	**161.47**	**344.29**	**409.45**	**846.33**	**893.66**	**547.49**	**600.92**
Total Exports	**5717.79**	**6558.64**	**8407.55**	**8455.34**	**11429.22**	**14659.59**	**16343.19**	**18941.82**

Note: Data for 2013-14 are provisional and data for 2012-13 are revised.

Source: Directorate General of Commercial Intelligence and Statistics as cited in Handbook of Statistics on Indian Economy 2013-14, Reserve Bank of India