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Sectoral Diversification of India's Foreign Trade Portfolio: Exploring the Commodity Composition of India's Trade-Basket

Khushbu Singla Goyal and Arti Gaur

Abstract

The growth trajectory of the economic development of a country depends to a large extent upon the success of its foreign trade policy. Having a favorable or minimize the unfavorable trade balance is a daunting task for the Indian economy which at present is suffering from negative trade balance. However, this objective of a country's foreign trade policy can be achieved only by undertaking suitable efforts to accelerate the volume of exports while shrinking the unnecessary imports to the maximum possible extent. This study is of immense use for policy planners to get a trade snapshot of India for identifying the role of export and import growth in generating the favorable status of India's trade balance. The common financial theory of portfolio diversification for reducing risk also holds true in context of foreign trade portfolio and this study will prove extremely valuable for economists to examine whether or not the structure of India's foreign trade portfolio is diversified enough to minimize the associated risk.

Keywords: *CAGR, Exports, Imports, LPG reforms, Trade balance, New economic policy*

1. Introduction

The structure of India's foreign trade portfolio has undergone significant transformations during last few decades reflecting the changing composition and direction of India's trade-basket. The policy towards integration of Indian economy with the world economy was initiated since late seventies which remained mild in the beginning but gained momentum in second half of eighties. The large population of India provides market to many countries of the world and simultaneously India's foreign trade provides opportunities to India for extracting the potentials of its manpower and other resources to emerge as real super power.

Considerable acceleration in export growth rate was observed in mid-1980s. But exports grew relatively slower than imports and consequently the balance of payments crisis existed with a different magnitude. The modernization of industrial technology was becoming crucial and the obligation for economic reform initiated from this backdrop.

Khushbu Singla Goyal, Research Scholar, Department of Business Administration, Chaudhary Devi Lal University, Sirsa (Haryana). E-mail: goyal.khushbu88@gmail.com (Corresponding Author)

Arti Gaur, Assistant Professor, Department of Business Administration, Chaudhary Devi Lal University, Sirsa (Haryana). E-mail: artigaur2009@gmail.com

The stringent import control during the late seventies and early eighties had stiffened the manufacturing sector as the trade regime during that period was based on a complex system of licensing. Capital goods were divided into restricted category and the open general license (OGL) category. While on the one hand, import licenses were required for restricted capital goods, on the other hand, those in the OGL could be imported without a license subject to some conditions. Intermediate goods were also classified into the banned, restricted and limited permitted categories besides the OGL category in the order of import control stringency. The import of consumer goods was banned, except those that were assumed to be essential and could only be imported by the nominated government canalizing agencies.

The recent India's foreign trade policy modifications highlight the importance of increasing exports and facilitating those imports which are required to stimulate the economy and modernization of domestic industries by undertaking many strategies like neutralizing the incidence of all levies and duties on inputs used in export of products; simplifying the procedures and bringing down transaction costs; facilitating technological and infrastructure upgradation of all sectors; promoting the brand-India goods and emphasizing on focused market and product scheme. The trade reforms instigated through the foreign trade policies of India since the introduction of New Economic Policy in 1991 significantly focused on the diversification of the India's foreign trade portfolio structure to a large extent and hence now, it's the time to undertake a comprehensive assessment of what has worked for India and what has not, by looking at the strengths and weaknesses of India's foreign trade portfolio.

2. Literature review

This section will summarize the literature consisting of some previous studies undertaken in the same context of foreign trade which has been reviewed before conducting this research study.

Balassa (1980) in the study "Trade between developed and developing countries: The decade ahead", defined the interests of the developed and developing countries in the liberalization of their mutual trade. Possible approaches to harnessing these interests for promoting North-South trade in the decade ahead had also been analysed in this paper. The context for the discussion in the paper was the trade policies of developed and developing countries in the postwar period. The paper concluded that while their national interest, as well as the interests of the world economy, demands that the NICs reduce their trade barriers, they would have to be provided with security of market access in the developed countries which puts a particular responsibility on the developed countries to take adjustment measures that would permit liberalizing their trade. Pursell (1996) in the study "Indian trade policies since 1991 reforms" observed that during the 1980s, the import licensing of capital goods in the restricted list was administered with less stringency and as a result, the import penetration ratio in the capital goods sector escalated from 11 percent to 18 percent in 1985-86.

Bilal (2001) concluded that the interface between trade and competition is a complex one. While trade liberalisation, by fostering competition, can sometimes act as a substitute to a precompetitive regime, in most cases a high degree of complementarities between trade and competition policies can be identified. It is therefore natural that competition be discussed within the WTO framework. The possibility of a WTO competition agreement is a likely option that should be seriously considered by developing countries. Rey (2001) in the study "International trade and currency exchange source" had looked at inertia in the use of a specific international currency. Part of this inertia is linked to the fact that if multiple currencies are being used, higher transaction costs would pass through to export prices. Hence, there is an incentive to use only one invoicing currency to maintain lower international prices and competitiveness. The currency of reference is chosen according to the "thick market externality" principle, whereby the transaction costs of using a particular currency in the market are reduced with market size. Therefore, the currencies of countries with large trading power, high levels of openness and substantial bilateral trade flows are more likely to be chosen.

Parikh and Stirbu (2004) in the discussion paper "Relationship between trade liberalisation, economic growth and trade balance: An econometric investigation" had undertaken a study of 42 developing countries of Asia, Africa and Latin America in which they first examine the impact of trade liberalisation on economic growth, investment share of GDP, openness, trade balance and current accounts (as percentages of GDP). Both panel data and country by country data are used to measure the impact of liberalisation on domestic economic growth measured in PPP terms. Domestic economic growth is often positively related to liberalisation for many countries of the sample. Next they analysed the impact of growth on trade balance and current account to examine whether higher economic growth due to liberalisation leads to adverse effect on balance of trade. Trade balance is normalised by GDP to take into consideration different sizes of countries.

Rangarajan (2004) in the study "Rules of origin under Generalised System of Preferences as a market access barrier to Indian textiles and clothing exports- With special reference to US and EU Markets" explained the type and nature of the GSP rules of origin and its escalation as provided by the principal donors such as the EU and USA to the Indian textiles and also determined the extent to which the donor countries' domestic interests have shaped the rules of origin. The study has dwelt upon the existent state of the local textiles and clothing sector in India and analyzed the implications of the EU and US GSP rules of origin on the nature and competitiveness of textiles and clothing sector in India. The extent to which the rules of origin have constrained the input-output mix of the Indian textiles and clothing sector has been looked into and the study has also considered whether the rules of origin under MFA would affect the ability of India's garment exporters to compete in the global market once the MFA has been phased out.

Goldberg and Tille (2005) in the seminar paper "Vehicle currency use in international trade" showed that exporters are eager to limit the fluctuations of their prices relative to that of the goods of its competitors, when the goods are substitutes, and hence for this reason would opt for the invoicing currency of their competitors (the so-called

"coalescing" effect). Since the lack of disaggregated data may miss the potentially strong heterogeneity in invoicing practices across industries, the authors conducted transaction-based analyses of invoicing practices by US and Canadian firms, industry-by-industry. They found that exporters in industries where goods are close substitutes make little use of their own currency unless they are from the US, and that exporters from a country with a volatile exchange rate also hardly use their own currency. Model calculations are pretty robust in demonstrating that this "coalescing effect", whereby exporters minimize price differences relative to their competitors by reducing the volatility and transaction costs inherent to using different currencies, goes a long way to explaining the well-known dominance of the US dollar. The use of the US dollar in trade flows that do not involve the United States reflects trade in homogeneous products.

Shridhar (2013) in the study "TRIPS, public health and CBD: Issues and concerns" reviewed that the issue of TRIPs and public health is gaining momentum in current Doha Round of negotiations. Various concerns of the developing and LDCs have been highlighted in several multilateral meetings. Developing countries argue current regime of product patent regime would vigorously affect their accessibility and affordability to medicine and affect the capability of their domestic pharmaceutical industry. The article made an attempt to analyze the issue in detail in the context of the developments taken place in the areas of TRIPS, CBD and public health sharing. It also suggested certain measures keeping in view the prospect and debate surrounding the issue of TRIPS.

Pal (2013) in the study "Multilateralism: Current state of play" outlined that the global financial crisis and subsequent protectionist policies imposed by the US and other developed countries during the then last five years on world economy had affected the growth of world trade. While most of the countries were engaged in various efforts to revive their economies, world economy still experienced a downturn. Rise in protectionism and failure of WTO negotiations were hampering the forward movement of multilateralism. Doha Round of negotiations which promised to provide real gains to many developing and other countries stood at the crossroads. In spite of several rounds of negotiations, Doha has not delivered developmental gains to the developing countries. This paper made an attempt to analyze the issues in detail; highlight the promises and pitfalls of WTO negotiations; and suggest the impact on India.

Nicita (2013) in the research work "Exchange rates, International trade & Trade policies" mentioned that the exchange rate plays an important role in a country's trade performance. Whether determined by exogenous shocks or by policy, the relative valuations of currencies and their volatility often have important repercussions on international trade, the balance of payments and overall economic performance. This paper investigated the importance of exchange rates on international trade by analysing the impact that exchange rate volatility and misalignment have on trade and then by exploring whether exchange rate misalignments affect governments' decisions regarding trade policies. The methodology consisted of estimating fixed effects models on a detailed panel dataset comprising about 100 countries and covering 10 years (2000-2009).

Sinha and Nataraj (2013) in the paper "Agriculture negotiations in WTO: Critical issues and concerns" observed that the Doha Development Round has engaged in a series of negotiations to rationalize the agricultural farm sector by undertaking substantial tariff reduction programme. There had been some movement towards rationalization. However, developing countries argued that in the event of whole hearted liberalization, most of the developing countries were going to experience significant losses in world trade as they were not able to compete in world economy due to domestic subsidy and export competition measures provided by developed countries. The paper made an attempt to suggest how measures like SSM and SP can be effective for developing countries in the wake of agricultural trade liberalization. It analyzed and informed that developing countries as an effective group have the ability and capacity to argue out their case in the coming Ministerial conference which can deliver some concrete results.

Chowdhury and Neogi (2014), in the paper "Determinants of India's export to small and large economies:-An analysis with some select parameters" made an attempt to examine India's exports to both small and large countries using a simple linear regression model. Exchange rate also played an important role in influencing export between the countries. The paper also aimed to find whether the impact of change in exchange rate is same for India's exports to both small and large economies. If the exchange rate is low, then in accordance with the economic theory India reduces exports to these large countries. However, the same is not true for the small countries. The possible reason behind such different outcomes of the same action is studied in the paper. The paper has also tried to find whether geographical distance between the countries is effective or not in determining India's exports to both small and large countries. The paper has used a select number of small and large countries as destinations of India's exports to analyse this issue. The study has found that when the exchange rate falls India's exports to small countries increase and that to the large countries decrease. The influence of geographical distance is statistically insignificant for India's export to Bhutan, Nepal, Bangladesh, and Srilanka, Thailand. On the other hand, for those selected large countries (U.S.A, U.K, France, Germany and China), located at far off places, exports depend on the distance as exporting goods involve huge cost.

3. Research methodology

3.1 Research objectives

- To study the overall trend of India's foreign trade statistics subsequent to the introduction of New Economic Policy in 1991.
- To analyze the sectoral diversification of India's foreign trade portfolio by exploring the commodity composition of India's trade-basket.

3.2 Research hypotheses

H_{01}: There is no significant difference between India's exports growth rate and imports growth rate.

H_{02}: There is no significant difference among the contribution of various commodities in India's export composition.

H_{03}: There is no significant difference among the proportion of various commodities in India's import basket.

3.3 Research design and sources of data collection

The research design followed in this research study is descriptive-cum-exploratory. For undertaking this research study, the secondary data about the Foreign Trade statistics has been collected through various sources like data released by the Directorate General of Commercial Intelligence and Statistics (DGCIS), Kolkata; Economic Survey Reports of various years issued by the Ministry of Finance, Government of India; data as per the Estimates Committee of the Ministry of Foreign Trade; Database on Indian Economy released by the Reserve Bank of India (RBI); various issues of RBI Monthly Bulletin; United Nations' COMTRADE database maintained by the United Nations Conference on Trade and Development (UNCTAD); various editions of International Financial Statistics (IFS), Balance of Payments Statistics Yearbook (BOPSY), Direction of Trade Statistics (DOTS) published by the International Monetary Fund (IMF) among others, using print media as well as internet as an electronic media.

3.4 Techniques of data analysis

The relevant data for this research study has been processed and analyzed through SPSS package using various statistical tools including Descriptive statistics (Arithmetic Mean and Standard Deviation), Simple Arithmetic Annual Growth Rate, Compounded Annual Growth Rate (CAGR), One-sample t-test and Friedman Test.

- **Formula of simple arithmetic annual growth rate**

$$AGR(\%) = [\{V(t_n) - V(t_0)\} / V(t_0)] * 100$$

where,

$V(t_n)$: Value in current year.

$V(t_0)$: Value in previous year.

- **Formula of compounded annual growth rate (CAGR)**

$$CAGR\ (t_0, t_n) = [V(t_n) / V(t_0)]^{\frac{1}{t_n - t_0}} - 1$$

where,

$V(t_0)$: Initial Value.

$V(t_n)$: Finish Value.

$t_n - t_0$: Number of years.

Verification: $V(t_n) = V(t_0) * (1 + CAGR)^{t_n - t_0}$

4. Data analysis and interpretation

H_{01}: There is no significant difference between India's exports growth rate and imports growth rate.

Table 1 reviews India's foreign trade performance in terms of exports and imports subsequent to the introduction of New Economic Policy in 1991. The mean values represent the domination of imports over exports during the aforesaid period. The table also analyses annual growth rates of the exports and imports of India during the period from 1991-92 to 2014-15 which shows an almost continuous positive growth in both exports and imports with highest export growth rate of around 30% in the year 1993-94 while highest import growth rate of 39.5% in 2004-05 which once again proves the same trend of domination of imports over exports.

Table 1: Annual growth rates (exports & imports)

Year	Exports (Rupees Billion)	Annual Growth Rate of Exports (%)	Imports (Rupees Billion)	Annual Growth Rate of Imports (%)
2014-15	18970.26	-0.42	27340.49	0.69
2013-14	19050.11	16.56	27154.34	1.73
2012-13	16343.19	11.49	26691.62	13.80
2011-12	14659.59	28.26	23454.63	39.32
2010-11	11429.22	35.17	16834.67	23.45
2009-10	8455.34	0.57	13637.36	-0.78
2008-09	8407.55	28.19	13744.36	35.77
2007-08	6558.64	14.71	10123.12	20.44
2006-07	5717.79	25.28	8405.06	27.27
2005-06	4564.18	21.60	6604.09	31.80
2004-05	3753.40	27.94	5010.65	39.53
2003-04	2933.67	14.98	3591.08	20.83
2002-03	2551.37	22.07	2972.06	21.21
2001-02	2090.18	2.68	2452.00	6.21
2000-01	2035.71	27.58	2308.73	7.27
1999-00	1595.61	14.17	2152.37	20.70
1998-99	1397.53	7.42	1783.32	15.67
1997-98	1301.01	9.50	1541.76	10.98
1996-97	1188.17	11.72	1389.20	13.24
1995-96	1063.53	28.64	1226.78	36.35
1994-95	826.74	18.53	899.71	23.08
1993-94	697.51	29.92	731.01	15.35
1992-93	536.88	21.90	633.75	32.44
1991-92	440.42	-	478.51	-
Mean	5690.32	18.19	8381.70	19.84
*Std.Deviation	6061.71	10.06	9348.71	12.32
**t	**df	**Sig. (2-tailed)	**Mean Difference	
0.643	22	0.527	1.651	

Source: Compiled from the data provided by Directorate General of Commercial Intelligence and Statistics.
** Std. Deviation refers to Standard Deviation.*
*** One-Sample t-test, where, Sample: Annual Growth Rate of Imports; Test Value: Mean of Annual Growth Rate of Exports.*

A one-sample t-test was run to determine whether the annual growth rates of Imports during the period under study was significantly different from the annual growth rates of Exports during the same period, calculated as the mean export growth rate of 18.19. It was found that the Mean import growth rate (19.84 ± 12.32) was slightly higher than the mean export growth rate of 18.19, a statistically insignificant difference of 1.651 (at 95% level of confidence), $t(22) = 0.643$, $p = 0.527$. There was a statistically insignificant difference between means ($p > 0.05$) and, therefore, we can accept the null hypothesis H_{01} by concluding that there is no significant difference between India's exports growth rate and imports growth rate.

Table 2: India's foreign trade - annual statistics

Year	Exports (Rupees Billion)			Imports (Rupees Billion)			Trade balance (Rupees Billion)		
	Oil	Non-Oil	Total	Oil	Non-Oil	Total	Oil	Non-Oil	Total
2014-15	3412.94	15557.32	18970.26	8424.44	18916.06	27340.49	-5011.49	-3358.74	-8370.23
2013-14	3832.48	15217.63	19050.11	9978.85	17175.48	27154.34	-6146.38	-1957.85	-8104.23
2012-13	3307.90	13035.29	16343.19	8918.71	17772.91	26691.62	-5610.81	-4737.62	-10348.43
2011-12	2679.15	11980.45	14659.59	7430.75	16023.88	23454.63	-4751.60	-4043.44	-8795.04
2010-11	1887.79	9541.43	11429.22	4822.82	12011.85	16834.67	-2935.03	-2470.42	-5405.45
2009-10	1328.99	7126.35	8455.34	4116.49	9520.86	13637.36	-2787.50	-2394.52	-5182.02
2008-09	1233.98	7173.57	8407.55	4199.68	9544.68	13744.36	-2965.70	-2371.11	-5336.80
2007-08	1141.92	5416.72	6558.64	3206.55	6916.57	10123.12	-2064.63	-1499.85	-3564.48
2006-07	845.20	4872.59	5717.79	2585.72	5819.35	8405.06	-1740.52	-946.75	-2687.27
2005-06	515.33	4048.85	4564.18	1946.40	4657.69	6604.09	-1431.07	-608.84	-2039.91
2004-05	314.04	3439.35	3753.40	1340.94	3669.71	5010.65	-1026.90	-230.35	-1257.25
2003-04	163.97	2769.69	2933.67	945.20	2645.88	3591.08	-781.23	123.82	-657.41
2002-03	124.69	2426.68	2551.37	853.67	2118.39	2972.06	-728.98	308.29	-420.69
2001-02	101.07	1989.11	2090.18	667.70	1784.30	2452.00	-566.63	204.82	-361.82
2000-01	85.42	1950.29	2035.71	714.97	1593.76	2308.73	-629.55	356.53	-273.02
1999-00	1.69	1593.93	1595.61	546.49	1605.88	2152.37	-544.80	-11.95	-556.75
1998-99	3.76	1393.77	1397.53	269.19	1514.13	1783.32	-265.43	-120.36	-385.79
1997-98	13.11	1287.90	1301.01	303.41	1238.35	1541.76	-290.30	49.55	-240.76
1996-97	17.10	1171.07	1188.17	356.29	1032.91	1389.20	-339.18	138.16	-201.03
1995-96	15.18	1048.36	1063.53	251.74	975.05	1226.78	-236.56	73.31	-163.25
1994-95	13.09	813.65	826.74	186.13	713.58	899.71	-173.04	100.07	-72.97
1993-94	12.48	685.04	697.51	180.46	550.55	731.01	-167.98	134.49	-33.50
1992-93	13.79	523.09	536.88	171.42	462.33	633.75	-157.63	60.76	-96.86
1991-92	10.22	430.20	440.42	131.27	347.24	478.51	-121.05	82.95	-38.09
Mean	878.14	4812.18	5690.32	2606.22	5775.48	8381.70	-1728.08	-963.29	-2691.38
*Std.Deviation	1237.91	4833.75	6061.71	3134.90	6236.59	9348.71	1904.63	1518.39	3349.08
**CAGR (%)	28.74	16.88	17.78	19.83	18.98	19.23	-217.32	-217.46	-226.37

Source : Compiled from the data provided by Directorate General of Commercial Intelligence and Statistics.
**Std.Deviation refers to Standard Deviation.*
***CAGR refers to Compounded Annual Growth Rate.*

Table 2 highlights the annual statistics of India's Foreign Trade in terms of Oil and Non-oil trade during the period from 1991-92 to 2014-15. The mean values outline the domination of non-oil exports as well as non-oil imports in total exports and imports respectively during the aforesaid period. The table also depicts a continuous negative trade balance on account of oil trade in India while on contrary the trade balance from non-oil trade figured positive values for almost one decade after the introduction of LPG reforms in 1991. But the total trade balance in India also showed a continuous negative trend since 1991 which suggests that the NEP, 1991 succeeded in increasing India's non-oil exports over non-oil imports for at least a decade but its failure to overcome the huge excess of oil imports over oil exports resulted in the same negative overall trade balance even after the LPG reforms in 1991. It means the huge excess of oil imports over oil exports can be treated as the major culprit for the continuous negative trade balance of India. The crux is that though the volume

of oil trade in India is much less than the non-oil trade but even in that whatsoever small volume, the huge excess of oil imports over oil exports is playing a major role in turning the overall trade balance of India throughout negative even after a positive non-oil trade balance for many years on account of LPG reforms introduced in 1991. Even in the past one decade, when the LPG results were mitigated and the non-oil trade balance also started turning negative, yet the negative oil trade balance is much larger as compared to the non-oil trade balance, thus contributing on a higher side to the negative overall trade balance of India. The compounded annual growth rates also bring out some facts like both exports and imports are growing positively but simultaneously, the trade balance has a negative growth rate indicating a decline over years as imports are growing at a higher rate than exports as is evident from CAGR values. Though the oil trade in India has shown some improvement over the years as oil exports has grown at a higher rate than oil imports contrary to the non-oil and overall trade. But simultaneously, the decline in oil trade balance is almost equal to the decline in non-oil trade balance.

H_{02}: There is no significant difference among the contribution of various commodities in India's export composition.

Table 3 illustrates the exports of principal commodities from India during the period from 1991-92 to 2014-15. A statistical analysis of the export values of three major sectors (i.e. Primary products, Manufactured goods and Petroleum products) in the commodity composition of India's export-basket has been undertaken in terms of three major descriptive statistics, viz. arithmetic mean, standard deviation and compounded annual growth rate. Arithmetic mean shows the average export value while standard deviation shows the level of variations and diversity in the export values of each commodity sector calculated on the basis of export value figures from 1991-92 to 2014-15. An interpretation of above table pointed out that the export of Agriculture and Allied products has dominated over the export of Ores and Minerals in the sector of Primary products. The maximum average export value as well as the maximum growth in the export value among Primary products has been credited to Agriculture and Allied products but with very large variations as is evident from the mean and standard deviation value of Rs.(678.87 ± 724.67) billion with a CAGR of 14.96% while the same from Ores and Minerals came out to be just Rs.(178.67 ± 152.08) billion with a CAGR of 11.33%.

Another point highlighted is that the export values of Manufactured Goods (including Leather & Manufactures, Chemicals & Related Products, Engineering Goods, Textile Products, Gems & Jewellery, Handicrafts etc.) has outweighed the export values of other two sectors of primary and petroleum products. The export of manufactured goods has accrued the highest mean value of Rs.(3711.64 ± 3685.21) billion among all the three commodity sectors while that of primary products has accrued the lowest. The mean export value of the Primary sector is Rs.(857.54 ± 839.06) billion. The mean export values of both primary products and petroleum products are almost on similar lines with the petroleum products being on slightly higher side with a mean value of Rs.(879.52 ± 1240.50).

Table 3: Exports of principal commodities

Year	Primary Products (Rupees Billion)			Manufactured Goods (Rupees Billion)	Petroleum Products (Rupees Billion)
	Agriculture & Allied products	Ores & Minerals	All Primary Products		
2014-15	1950.03	270.67	2220.70	12100.85	3476.1
2013-14	2575.59	338.98	2914.56	11623.83	3802.50
2012-13	2227.42	305.97	2533.39	9954.41	3307.90
2011-12	1795.83	404.97	2200.79	8885.99	2679.15
2010-11	1102.96	393.51	1496.47	7198.63	1887.79
2009-10	841.36	410.98	1252.34	5464.56	1328.99
2008-09	806.49	358.77	1165.26	5664.02	1233.98
2007-08	742.09	367.17	1109.26	4145.99	1141.92
2006-07	573.92	316.86	890.78	3842.61	845.20
2005-06	452.20	272.88	725.08	3212.61	515.33
2004-05	380.78	228.19	608.97	2728.72	314.04
2003-04	346.16	108.85	455.00	2228.29	163.97
2002-03	324.73	96.60	421.33	1947.65	124.69
2001-02	281.44	60.21	341.65	1591.46	101.07
2000-01	272.88	52.67	325.56	1568.58	85.42
1999-00	243.01	39.70	282.71	1287.61	1.69
1998-99	253.87	37.59	291.46	1085.06	3.76
1997-98	246.26	39.43	285.70	986.60	13.11
1996-97	243.63	41.62	285.25	873.77	17.10
1995-96	203.44	39.30	242.74	794.33	15.18
1994-95	132.69	31.03	163.73	640.67	13.09
1993-94	126.33	27.86	154.18	522.45	12.48
1992-93	90.82	21.37	112.19	406.60	13.79
1991-92	78.95	22.92	101.87	324.13	10.22
*CAGR (%)	14.96	11.33	14.34	17.05	28.85
Mean	678.87	178.67	857.54	3711.64	879.52
**Std.Deviation	724.67	152.08	839.06	3685.21	1240.50
Friedman Test	Chi-Square(χ^2)		Df	Sig. (2-tailed)	
	73.433		4	.000	

Source : Compiled from the data provided by Directorate General of Commercial Intelligence and Statistics.
**CAGR refers to Compounded Annual Growth Rate.*
***Std.Deviation refers to Standard Deviation.*

But as is evident from the standard deviation values, the export values of petroleum products are much more inconsistent and variable as compared to the export values of primary products as we may notice that in the initial decade of the New Economic Policy, the export values of petroleum products were very low which eventually increased by the end of first decade and since then it is continuously growing at a very high rate. The major shift in the export value of petroleum products can be highlighted in the years 1999-2000 when it was just Rs.1.69 billion which suddenly grew up to Rs.85.42 billion in 2000-2001. The same fact is being highlighted by the CAGR figures witnessing the highest growth rate of 28.85 % in the export of petroleum products as compared to the other two sectors.

Contrarily, the export of primary products has observed the lowest growth rate of 14.34% while the export of manufactured goods has came up with a growth of 17.05% over the years since 1991.

Friedman test was run to determine whether there is significant difference among the contribution of various commodities in India's export composition during the period under study and it was found (at 99% level of confidence) that there was a statistically significant difference, χ^2 (4) = 73.433, p = 0.000 (p < 0.01), and therefore, we reject the null hypothesis H_{02} by concluding that there is significant difference among the contribution of principal commodities in India's export composition.

H_{03}: There is no significant difference among the proportion of various commodities in India's import basket.

Table 4 outlined the imports of principal commodities to India during the period from 1991-92 to 2014-15. A statistical analysis of the import values of the two major sectors (i.e. Bulk Imports and Non-Bulk Imports) in the commodity composition of India's import-basket has been undertaken in terms of three major descriptive statistics, viz. arithmetic mean, standard deviation and compounded annual growth rate. Arithmetic mean shows the average import value while standard deviation shows the level of variations and diversity in the import values of both commodity sectors calculated on the basis of import value figures from 1991-92 to 2014-15. An interpretation of above table pointed out that the import of Petroleum, crude and products has overtopped the import of other commodities in both the sectors of Bulk as well as Non-bulk imports. The highest average import value among both Bulk and Non-bulk imports has been credited to Petroleum, crude and products but with very large variations as is evident from the mean and standard deviation value of Rs.(2607.31 ± 3137.47) billion. On contrary, the import of Bulk-consumption goods has observed the least average value among both the sectors of Bulk as well as Non-bulk imports, i.e. Rs.(228.52 ± 261.81) billion. Overall figure points out that Non-bulk imports has dominated over the imports in Bulk sector with a higher mean import value of Rs.(4697.31 ± 5067.87) billion. But as we may notice from the very high standard deviation figures that large variations and inconsistency in the import values exists here as well. As far as the Non-bulk imports are concerned, the mean import values justify that the least and second-lowest shares in non-bulk imports has been captured by export-related items (Rs.977.85 ± 995.59 billion) and capital goods (Rs.1802.10 ± 1871.74 billion) respectively which can be attributed as a major weakness in India's import structure as the main motive behind the relaxation of various quantitative and qualitative import controls as a part of LPG reforms in the New Economic Policy, 1991 was to boost the export performance of the country by facilitating the import of modern and upgraded capital intensive production technologies and export related items to magnify the production of export oriented goods in the country. But contrary to the expectations, the relaxed import controls resulted in the increased

imports of other bulk and non-bulk items instead of the export-oriented or production-oriented capital goods which questioned the very meaning of the introduction of LPG reforms in 1991 and consequently, we can say that the New Economic Policy could not succeeded in achieving its intended objectives upto a considerable extent.

As far as CAGR is concerned, the results stipulate that the growth rate of both bulk as well as the non-bulk imports is almost on similar lines with the growth rate of bulk imports being 19.28% while that of non-bulk imports being 19.19%. The lowest growth rate is 16.84% being witnessed in the imports of export-related items, while the highest growth is observed in the imports of bulk consumption goods depicting a growth rate of 23.82% which suggests that though the average imports of bulk consumption goods is least in the present import structure of the country, but it is growing at a very rapid rate signaling the inclination of Indian consumers towards imported goods which is not a good trend in the trade portfolio of India. Friedman test was run to determine whether there is significant difference among the proportion of various commodities in India's import basket during the period under study and it was found (at 99% level of confidence) that there was a statistically significant difference, χ^2 (7) = 158.931, p = 0.000 (p < 0.01), and therefore, we reject the null hypothesis H_{03} by concluding that there is significant difference among the proportion of various commodities in India's import basket.

5. Results and discussion

The essence of this study lies in the dominance of imports over exports in the foreign trade structure of India highlighting the higher mean and growth rate of imports as compared to exports which can be considered as the major flaw in India's trade portfolio responsible for the failure of Indian economic policies on the trade front.

Besides, the exports of Agriculture & allied products can be considered as the most profitable opportunity for India with a very high present value and growth potential while the Oil exports of India constitute the doubtful opportunities displaying very weak current trend but a very high growth potential.

The Non-oil exports implicate the cash cow of India's foreign trade for which the high mean export value can be cashed in the present but with very limited expectation of future potential due to its very small rate of growth. The exports of Ores & Minerals and the Overall Primary Products (among the segment of Primary Products/Manufactured Goods/Petroleum Products) represent the weakest present value as well as potential growth opportunities for Indian exports.

As far as the import portfolio of India is concerned, the imports of Other Non-Bulk Items (except Capital Goods & Export related Items) need strict control due to the huge present volume as well as growth potential of such imports. Importing Bulk Consumption goods as well as the oil imports of India can be considered as unwarranted threats as the current import values of these commodities is not considerable enough but their import is growing at a very high rate implying a high import potential for future.

Table 4: Imports of principal commodities

Year	Bulk Imports (Rupees Billion)				Non-Bulk Imports (Rupees Billion)			
	Petroleum, Crude & Products	Bulk Consumption Goods	Other Bulk Items	All Bulk Imports	Capital Goods	Export Related Items	Other Non-Bulk Items	All Non-Bulk Imports
2014-15	8428.70	921.36	2834.02	12184.08	5506.01	3162.99	6487.41	15156.41
2013-14	10000.64	698.65	2376.71	13076.00	5153.43	2960.24	5952.15	14065.81
2012-13	8918.71	774.02	2504.59	12197.32	5161.02	2552.48	6780.80	14494.30
2011-12	7430.75	558.53	2315.19	10304.47	4755.07	2486.86	5908.23	13150.16
2010-11	4822.82	403.45	1656.10	6882.37	3578.76	2442.53	3931.00	9952.30
2009-10	4116.49	427.59	1383.76	5927.84	3124.85	1483.55	3101.11	7709.51
2008-09	4199.68	228.83	1846.36	6274.86	3303.84	1468.60	2697.05	7469.49
2007-08	3206.55	185.21	1147.43	4539.18	2822.69	836.15	1925.10	5583.94
2006-07	2585.72	194.31	1040.58	3820.60	2129.86	808.69	1645.91	4584.46
2005-06	1946.40	122.49	635.61	2704.50	1667.62	825.30	1406.68	3899.59
2004-05	1340.94	139.50	424.69	1905.13	1129.36	768.13	1208.04	3105.52
2003-04	945.20	141.20	267.40	1353.80	839.94	584.36	812.97	2237.27
2002-03	853.67	116.68	205.63	1175.98	653.25	499.14	643.69	1796.08
2001-02	667.70	97.45	201.24	966.38	471.30	393.94	620.37	1485.61
2000-01	714.97	65.93	170.05	950.95	408.47	368.15	581.16	1357.78
1999-00	546.49	104.73	200.10	851.32	388.50	395.08	517.47	1301.05
1998-99	269.19	106.19	181.21	556.60	423.41	300.01	503.30	1226.72
1997-98	303.41	55.13	191.13	549.67	364.07	256.93	371.09	992.09
1996-97	356.29	43.10	181.58	580.96	352.23	217.90	238.11	808.24
1995-96	251.74	32.44	194.64	478.81	345.54	175.86	226.57	747.97
1994-95	186.13	35.92	133.40	355.45	239.82	135.54	168.90	544.26
1993-94	180.46	10.25	95.10	285.81	195.81	137.62	111.78	445.20
1992-93	171.42	14.68	93.35	279.44	131.25	120.14	102.91	354.30
1991-92	131.27	6.77	73.05	211.09	104.34	88.28	74.80	267.42
*CAGR (%)	19.84	23.82	17.24	19.28	18.82	16.84	21.41	19.19
Mean	2607.31	228.52	848.04	3683.86	1802.10	977.85	1917.36	4697.31
**Std.Deviation	3137.47	261.81	920.97	4293.59	1871.74	995.59	2235.97	5067.87
Friedman Test	Chi-Square(χ^2)			df		Sig. (2-tailed)		
	158.931			7		.000		

Source : Compiled from the data provided by Directorate General of Commercial Intelligence and Statistics.
**CAGR refers to Compounded Annual Growth Rate.*
***Std.Deviation refers to Standard Deviation.*

The Non-Oil Imports is the only cash cow in the compositional portfolio of India's imports which can be considered as constituting well-established imports in present but with no growth potential resulting in limited future threat. The import of 'Export related Items' falls in the category of the most important imports for any economy due to their potential for export enhancement. As far as India's foreign trade is concerned, these commodities can be considered as contributing very weak import opportunities in present with no growth potential as well resulting in very limited likelihood of future import enhancements which can be adjudged as a major flaw in Indian import structure.

Thus, the study concluded that the LPG Reforms under New Economic Policy did not accelerate the process rather there is some indication of its failure on the balance of trade front. Contrary to the claim made in the New Economic Policy of 1991, exports did not pick up

at the required level, while imports accelerated substantially. It indicates that economic and trade liberalization has not yet succeeded in bringing far-reaching changes in India's foreign trade which reflects pre-reform strategy to a large extent. Changes did occur after 1992 with liberalization of trade. Trade liberalization had a stimulating effect mainly in the immediate post-reform period. However, the export sector is not sufficiently diversified and still dominated by simple and undifferentiated products with low levels of skill and simple technologies, and for which India's comparative advantage lies in cheap labour. Due to this specialization India exports mainly those products for which international demand is growing slowly. India's exports were thus concentrated in low technology products and slow growing markets which is the main reason of unsatisfactory export performance of the country even after the introduction of LPG reforms initiated in 1991.

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