

India's Trade Intensity with ASEAN Countries

AUTHORS

Dr. Rekha Acharya

Reader
School of Economics,
Devi Ahilya University,
Indore, MP.

Dr. Haldhar Sharma

Lecturer
Medi-caps Institute of Techno-
Management,
Devi Ahilya University,
Indore, MP.

Abstract

India is a growing economy and ASEAN is a fastest developing trade block. India's trade relations with ASEAN substantially have been changed after the "Look-East" policy of India in 1991. To strengthen the economic relation with ASEAN; India became full dialogue partner of ASEAN in December 1995 at Bangkok. More recently a Free Trade Agreement in goods was signed between India and ASEAN, in Bangkok on August 13th 2009. In this context, this paper is an attempt to measure the India's trade intensity indices of export and import with ASEAN. For calculation of these indices few economic variables have been considered such as export, import, world export and world import. Trend analysis and dummy variable have been used to measure the trend and impact of India's full dialogue partnership with ASEAN. Study indicates that India's trade is increasing with ASEAN countries, while India's trade intensity of export and import is not up to the desired level with Philippines and Thailand countries of ASEAN. India's full dialogue partnership is not able to influence India's trade intensity of export, while it is significantly affecting India's trade intensity of import with Indonesia, Malaysia, Singapore and Thailand except Philippines.

1. INTRODUCTION

India is a huge economy and growing rapidly. India has an experience of economic crisis of 1991. Crisis has affected credibility of India in the world. The major reason behind it was problem of balance of payment; economic inefficiency and limited integration with the world economy. Due to this crisis India had to rethink about his economic philosophy, strategy and tactics. Hence India has been started wider range of economic reforms in 1991. Since then India has started vigorously to integration with the world economy. To achieve this goal, in 1992, India became a sectoral dialogue partner of ASEAN on trade, investment, tourism, and science and technology. At the fifth ASEAN summit in Bangkok in December 1995, India was invited to be a full dialogue partner. This was followed by India becoming a member of the ASEAN Regional Forum (ARF) where regional security issues are discussed. In Bali on 8th October, 2003 India-ASEAN signed an Agreement on Comprehensive Economic Cooperation (CEPA). More recently a Free Trade Agreement in goods was signed between India and ASEAN, in Bangkok on August 13th 2009. Its implementation is to start from January 2010. Beside this India and ASEAN countries also have opportunities for cooperation and discussion in other such fora as G-15; Indian Ocean Rim Association for Regional Cooperation (IOR-ARC), Mekong-Ganga Cooperation

(MGC) and BIMSTEC. India's present economic relations with ASEAN cover a wide-range, which includes merchandise trade, trade in service transactions, investments, tourism, and manpower flows.

To strengthen the relationship, there is need to willingness and increasing capacity to purposefully explore emerging economic opportunities in ASEAN and in India. ASEAN's population is 56.40 million (2006) that are half of India's population of over one billion persons. ASEAN as a group growing fast since 2000, but still its average growth has remained lower than that of India (Asher Mukul, Sen Rahul, 2001). ASEAN countries are more integrated with the world economy as compare to India. India's merchandise exports to ASEAN are about US\$ 1020.07 million in 1991-92 (5.64 per cent of its world export) which increased to US\$ 12590.81 million in 2006-2007 (10.18 per cent of its world export). From 1991-92 to 2006-07 trade has increased more then twelve times (12.34 times). On the other hand India's imports from ASEAN are also increased nineteen times (19.23 times), from US\$ 939.44 million in 1991-92 to about US\$ 18069.88 million in 2006-07. Hence ASEAN countries are more important for India in terms of import as compared to export. Our sustained efforts to engage with ASEAN in the last one decade have shown commensurate results. ASEAN-India trade in 2006-2007 was about US\$ 30660.69 million, an increase of approximately 15.647 percent over the 1993-1994 (US \$ 1959.51 million) trade figures. India is gradually integrating with the world economy. ASEAN and India is cooperating to each other in various functional areas: science & technology, health care, trade & investment, and transport & infrastructure.

2. OBJECTIVES OF THE STUDY

- To analyze India's Trade Intensity of export and import with ASEAN countries.
- To study the shift in India's Trade Intensity of export and import with ASEAN countries.

3. RESEARCH METHODOLOGY

A measure of trade relationship among partners is trade (both exports and imports) intensity.

Hence trade intensity indices on both exports and imports sides are computed for India vis-à-vis founder member countries of ASEAN. These indices have been calculated for the two periods of time one is before the full dialogue partnership (1983, 1990 and 1994) and after full dialogue partnership (2000 and 2006).

a) India's Trade Intensity of Export: The India's trade intensity of export is calculated as the intensity of country j's trade with another country i, which is equal to the ratio of i's share in j's global exports to its share in total global imports, less j's global imports. Economic complementarity, geographical proximity and political-historical ties affect the intensity of trade. Export intensity index of India's trade with individual country of ASEAN is computed as follows:

$$IX_{ij} = [(X_{ij}/X_i) / (M_j/M_w - M_i)] * 100$$

Here,

X_{ij} = The exports of country i to trading partner j,

X_i = Total exports of country i

M_j = Total imports of country j

M_w = Total world imports

M_i = Total imports of country i

b) India's Trade Intensity of Import: Similarly, the India's trade intensity of import indices are calculated as the intensity of j's import trade with another country i, which is equal to the ratio of j's share in i's global imports to j's share in total global exports less j's global exports. India's trade intensity of import with individual country of ASEAN is measured by the following formula:

$$IM_{ij} = [(M_{ij}/M_i) / X_j / (X_w - X_i)] * 100$$

Here,

M_{ij} = Imports of country i from trading partner country j,

M_i = Total imports of country i

X_j = Total exports of country j

X_w = Total world exports

X_i = Total export of country i

The value of indices as zero implies that there is no trade relationship between the two partner countries. An export intensity of more (or less) than 100 indicates that country j is exporting more (or less) to country i than might be expected from that

country's share in total global trade. Similarly, import intensity of more (of less) than 100 indicates that country j is importing more (or less) than might be expected from that country's share in total global trade.

Trend analysis and Impact of India's full dialogue partnership with ASEAN on India's Trade Intensity of Export and Import indices:

The linear regression equation with dummy variable is used to find out trend and the period of change in India's trade intensity of export and import indices with selected ASEAN countries. The year of shift is taken as 1997. Following equation is used to study the impact of India's full dialogue partnership with ASEAN on India's export and import intensity indices with ASEAN country.

$$Y_t = \hat{a} + \hat{a}_1 T + \hat{a}_2 D + U_t$$

Here,

Y_t = Dependent variable (India's Trade intensity of export and import with ASEAN)

T = Time period

\hat{a} and \hat{a}_1 = Regression coefficients

\hat{a}_2 = Coefficient of dummy variable

D = Dummy variable which is zero for the period prior to the shift and one otherwise

Thus, the model before and after the shift will be as follows:

$$(D=0) Y_t = \hat{a} + \hat{a}_1 T + U_t \quad (\text{Before shift 1997})$$

$$(D=1) Y_t = \hat{a} + \hat{a}_1 T + \hat{a}_2 + U_t \quad (\text{After shift 1997})$$

a) India's Trade Intensity of Export with ASEAN Countries:

In view of increasing India's export to ASEAN it becomes relevant to know India's trade intensity of exports with ASEAN countries. Hence trade intensity indices on export side have been computed for India vis-à-vis ASEAN countries. Table 1.1 shows that among the ASEAN countries before the full dialogue partnership period average of India's trade intensity of exports with Thailand was fairly high (126.41), followed by Singapore (114.01) Malaysia (90.70), Indonesia (89.51), and Philippines (44.99). Study indicates that India's trade intensity of export to Thailand and Singapore was more than the desired level (i.e. more

than 100). On the other hand India's trade intensity of export index for Malaysia, Indonesia and Philippines are below the desired level (i.e. less than 100). It means that India is not exporting up to the desired level to the Malaysia, Indonesia and Philippines. After the full dialogue partnership India's average trade intensity of export index were fairly high for Indonesia (210.98), followed by Singapore (176.04), Thailand (134.02), Malaysia (111.28), and Philippines (89.20) over the study period. India's trade intensity of export index for Indonesia, Singapore, Thailand and Malaysia were more than the desired level (i.e. more than 100), except Philippines. Before the full dialogue partnership average of India's trade intensity of export indices were up to the desired level only for two countries of ASEAN (Thailand and Singapore) and after the 1996 it is up to the desired level for four countries of ASEAN (Indonesia, Singapore, Thailand and Malaysia). Hence we can conclude that over the time India's trade intensity of export is increasing.

b) Linear Trend Equation Estimate of India's Trade Intensity of Exports with Selected ASEAN Countries:

India's trade intensity of exports has been increasing over the study period that's why we have calculated the trends of India's trade intensity of export indices with ASEAN. Table 1.2 indicates that time coefficient is positive and significant for the Indonesia, Philippines and Singapore. Time coefficient is positive and insignificant for Malaysia and Thailand. Linear regression analysis is showing very good explanatory power for Indonesia and Philippines and poor fit for Malaysia, Singapore and Thailand. Thus it is clear that India's trade intensity of exports is increasing significantly to Indonesia, Philippines and Singapore and not for Malaysia and Thailand. Regarding the coefficient of dummy variable for the full dialogue partnership of India with ASEAN countries shows that the partnership is not able to affect the India's trade intensity of export with ASEAN countries.

c) India's Trade Intensity of Imports with Selected ASEAN Countries:

India's new economic policy, look East policy and maintaining the relationship between East-Asian countries has

pushed up the trade between India and ASEAN countries. Therefore, it is relevant to know the trade intensity of India's imports with ASEAN countries. Hence trade intensity indices on import side have been estimated for India vis-à-vis ASEAN countries. It is clear from the table 1.3 that India's trade intensity of imports has been increasing over the study period. Among the ASEAN countries average of India's trade intensity of imports is fairly high for Malaysia (230.42), followed by Singapore (147.48), Thailand (90.58), Indonesia (55.52) and Philippines (10.33). Study indicates that India's trade intensity of import from Malaysia and Singapore was more than the desired level (i. e. more than 100). After the full dialogue partnership India's trade intensity of import index were fairly high for Indonesia (204.44), followed by Malaysia (189.83), Singapore (128.85), Thailand (78.81) and Philippines (23.02). India's trade intensity of import index for Indonesia, Malaysia and Singapore were more than the desired level (i.e. more than 100), while it is less than the desired level for (i.e. less than 100) Thailand and Philippines. Before the full dialogue partnership India's trade intensity of import index were up to the desired level only for two countries (Malaysia and Singapore) and after the 1996 it were up to the desired level for three countries of ASEAN (Indonesia, Malaysia and Singapore). Therefore we can say that India's trade intensity of import with ASEAN is increasing over the time.

d) Linear Trend Equation Estimate of India's Trade Intensity of Imports with Selected

ASEAN Countries: India's Trade intensity of imports has been increasing over the study period. That's why it is worthwhile to calculate the trends of the India's trade intensity of import indices with ASEAN countries. Table 1.4 shows the regression estimation of India's trade intensity of import with ASEAN countries. Regression results indicate that time coefficient is positive and significant only for Indonesia where as it is negative and significant only for Malaysia. Time coefficient is negative & insignificant for Singapore and Thailand, while it is positive & insignificant for Philippines. Thus it is clear that India's trade intensity of imports with Indonesia is increasing and for Malaysia it is decreasing.

Therefore we can say that India's trade intensity of import with Malaysia, Philippines, Singapore and Thailand are not increasing significantly over the study period. Coefficient of dummy variable for the full dialogue partnership is positive and significant for Indonesia Malaysia, Singapore and Thailand, where as it is positive and insignificant for Philippines. The analysis thus indicates that after the full dialogue partnership India's trade intensity of imports with Indonesia, Malaysia Singapore and Thailand is increasing significantly over the study period.

5. CONCLUSION

India's trade is increasing with ASEAN countries over the study period. India's trade intensity of export indices were more than the desired level for Indonesia, Singapore, Thailand and Malaysia. India's Trade intensity of export indices are increasing significantly for Indonesia, Philippines and Singapore. India's full dialogue partnership with ASEAN is not able to influence these indices. On the other hand India's trade intensity of imports indices were more than the desire level for Indonesia, Malaysia and Singapore except Thailand and Philippines. Trade intensity of import indices is increasing significantly only for Indonesia. India's full dialogue partnership with ASEAN is significantly affecting India's trade intensity of import with Indonesia, Malaysia, Singapore and Thailand except Philippines. Thus we can conclude that India's trade is increasing with ASEAN countries, while India's trade intensity of export and import is not up to the desired level with Philippines and Thailand countries of ASEAN. India's full dialogue partnership is not able to influence India's trade intensity of export, while it is significantly affecting India's trade intensity of import with Indonesia, Malaysia, Singapore and Thailand. India's trade intensity index of export and import with ASEAN countries is more than the desired level for Indonesia, Myanmar, Singapore and Thailand. But there is still much room for further trade in the relatively untapped markets. Due to globalization there are no of areas where mutual cooperation is lies; just there is a need of positive will for the integration. India should also positively engage herself with these economies of ASEAN.

Table 1.1
India's Trade Intensity of Exports with ASEAN Countries

Year	Indonesia	Malaysia	Philippines	Singapore	Thailand
1983	33.25	80.98	15.41	86.66	86.43
1990	93.94	105.91	42.8	124.16	154.03
1994	141.32	85.2	76.75	131.21	138.74
AVG	89.50	90.70	44.99	114.01	126.41
2000	153.9	119.98	71.6	96.51	144.43
2006	268.06	102.58	106.8	255.57	123.61
AVG	210.98	111.28	89.2	176.04	134.02

Table 1.2
Linear Trend Equation Estimate of India's Trade Intensity of Export with ASEAN Countries

Dependent Variable	Intercept	Time	Dummy	R2
India's Trade Intensity of exports with Indonesia	-31.0339 (22.37713) (-1.38686)	16.80962 (2.527354) (6.651076)	-76.4759 (35.48596) (-2.1551)	0.811564
India's Trade Intensity of exports with Malaysia	101.3139 (8.47283) (11.9575)	0.281917 (0.956952) (0.294598)	12.60077 (13.43633) (0.937813)	0.202627
India's Trade Intensity of exports with Philippines	12.43597 (9.943419) (1.250674)	5.617758 (1.123046) (5.002252)	-26.5675 (15.76841) (-1.68486)	0.703867
India's Trade Intensity of exports with Singapore	56.40514 (23.22365) (2.428781)	8.926275 (2.622963) (3.403126)	-67.1743 (36.82839) (-1.82398)	0.43158
India's Trade Intensity of exports with Thailand	94.60544 (15.19506) (6.226066)	3.108997 (1.716185) (1.811575)	-17.4666 (24.09654) (-0.72486)	0.21633

- Values in parenthesis are standard error and t-statistics respectively.
- t-statistics is significant at 5 percent level of significance.

Table 1.3
India's Trade Intensity of Imports with ASEAN Countries

Year	Indonesia	Malaysia	Philippines	Singapore	Thailand
1983	15.15	312.85	11.13	215.39	178.78
1990	42.26	259.31	7.76	126.82	39.48
1994	109.15	119.1	12.11	100.22	53.48
AVG	55.52	230.42	10.33	147.48	90.58
2000	166.24	142.81	20.16	114.22	59.45
2006	242.64	236.84	25.88	143.47	98.17
AVG	204.44	189.83	23.02	128.85	78.81

Table 1.4**Linear Trend Equation Estimate of India's Trade Intensity of Import with each ASEAN Countries**

Dependent Variable	Intercept	Time	Dummy	R2
India's Trade Intensity of exports with Indonesia	-6.64832 (19.63720933) (-0.33855713)	8.391174 (2.217897764) (3.783390914)	80.35928 (31.14096356) (2.580500735)	0.86933
India's Trade Intensity of exports with Malaysia	377.097 (36.64902377) (10.28941399)	-16.7648 (4.13927389) (-4.05017068)	147.315 (58.11853885) (2.534733637)	0.482632
India's Trade Intensity of exports with Philippines	9.645762 (6.626303365) (1.455677702)	0.816138 (0.748398775) (1.090511884)	4.165376 (10.50808535) (0.396397195)	0.269198
India's Trade Intensity of exports with Singapore	173.7985 (15.47162872) (11.23336782)	-6.84534 (1.747421956) (-3.91739455)	83.33805 (24.53512706) (3.396683043)	0.422359
India's Trade Intensity of exports with Thailand	113.5885 (17.71816965) (6.410849762)	-5.55934 (2.00115445) (-2.77806828)	68.70713 (28.09772335) (2.445291797)	0.269219

- Values in parenthesis are standard error and t-statistics respectively.
- t-statistics is significant at 5 percent level of significance.

REFERENCES

1. Agrawal Raj, (1999), "Indian Foreign Trade", Excel Books, New Delhi.
2. Agarwala Ramgopal, (2002), "Towards an Asian Economic Community: Monetary and Financial Cooperation", RIS DP#33/2002.
3. Ahmad Syed Noman (2004): "Asian integration: Prospects for India's merchandise trade". THE INDIAN ECONOMIC JOURNAL.
4. Albertin Giorgia, (March 2008), "Regionalism or Multilateralism? A political Economy choice" IMF working paper March 2008.
5. Alatas Ali (August 2002), "International Relations in the Era of Globalization: Challenges and Opportunities for India-ASEAN Cooperation", Fourteenth India-ASEAN Eminent Persons Lecture RIS, New Delhi August 7, 2002.
6. Ambatker Sanjay (Book, First Edition 2002): "India and ASEAN in the 21st Century: Economic Linkages" 8
7. Asher Mukul, Sen Rahul and Srivastava Sadhna (2001): "ASEAN-India: Emerging Economic Opportunity" <http://www.spp.nus.edu.sg/docs/wp/wp06.pdf>
8. Asher Mukul Gand Srivastava Sadhna (May 2003), "India and the Asian Economic Community". RIS#DP 51/2003.
9. Baru Sanjay (February 2001), "India and ASEAN: The emerging Economic relationship towards a Bay of Bengal community". ICRIER working paper No.1.
10. Batra Amita (December 2004), "India's global trade potential: The growing model approach", ICRIER working paper No. 151.
11. Bhattacharya, B. and M. Ariff (2000): "Study of AFTA-India Linkages for the enhancement of Trade and Investment", a report submitted to the Government of India and the ASEAN Secretariat, May.
12. Gaur Seema (8th October 2003): "ASEAN-India Ties entering a new phase" <http://www.iseas.edu.sg>
13. International Monetary Fund (IMF), 2009. International Financial Statistics Yearbook.
14. Joseph K. J. and Parayil Govind (April 2004): "India-ASEAN Cooperation in Information and Communication Technologies: Issues and Prospects". RIS, New Delhi. DP # 70/2004.
15. Karmakar Suparna (November, 2005): "India-ASEAN cooperation in services-An overview" ICRIER. Working paper no. 176.