### ISSN No: 2249-894X

# Monthly Multidisciplinary Research Journal

# Review Of Research Journal

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#### RNI MAHMUL/2011/38595

#### ISSN No.2249-894X

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## REVIEW OF RESEARCH



ISSN: 2249-894X IMPACT FACTOR: 5.2331(UIF) VOLUME - 7 | ISSUE - 2 | NOVEMBER - 2017



# GROWTH AND PATTERN OF INTRA INDUSTRY TRADE BETWEEN INDIA AND SELECTED ASEAN COUNTRIES: 1996 – 2015



#### **ABSTRACT: -**

he Association of South-East Asian Nations (ASEAN) was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration) by the Founding Fathers of ASEAN, namely Indonesia, Malaysia, Philippines, Singapore and Thailand. Brunei Darussalam then joined on 7 January 1984, Viet Nam on 28 July 1995, Lao PDR and Myanmar on 23 July 1997, and Cambodia on 30 April 1999, making up what is today the ten Member States of ASEAN. This paper extends the existing studies in two important ways. First, to the best of our knowledge this is the first study that analyses the Intra Industry trade for the period of 1996 to 2015. Second, it will also help us to understand the potential of commodities value chain between India and ASEAN and possible trade cooperation. The rest of the paper addresses the following aspects of India -ASEAN trade relations with special reference to following countriesnamely-Indonesia, Malaysia, Singapore and Thailand. The data on the above aspect has been collected from secondary sources. This paper also studies the 2-digit HS code classification by using Grubell Lloyd index. The most often used method for determining the extent trade was proposed by Grubell Lloyd to calculate intra industry trade.

KEY NOTES: Grubell Lloyd index, ASEAN Countries,

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Harmonized System code and Intra industry trade.

#### 1.INTRODUCTION

The Association of South-East Asian Nations (ASEAN) was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration) by the Founding Fathers of ASEAN, namely Indonesia, Malaysia, Philippines, Singapore and Thailand. Brunei Darussalam then joined on 7 January 1984, Viet Nam on 28 July 1995, Lao PDR and Myanmar on 23 July 1997, and Cambodia on 30 April 1999, making up what is today the ten Member States of ASEAN. The aims and purposes of ASEAN are to accelerate the economic growth, social progress and cultural development in the region through joint endeavours in the spirit of equality and partnership in order to strengthen the foundation for a prosperous and peaceful community of Southeast Asian Nations.In this paper, we have discussed India's trade with ASEAN countries with special reference to emerging countries including Indonesia, Malaysia, Singapore and Thailand.

The ASEAN–India Free Trade Area (AIFTA) is a free trade area among the ten member states of the Association of South East Asian Nations (ASEAN) and India. The initial framework agreement was signed on 8 October 2003 in Bali, Indonesia. The final agreement was on 13 August 2009. The free trade area came into effect on 1 January 2010. India hosted the latest ASEAN-India Commemorative Summit in New Delhi on 20–21 December 2012. In 2011-12, the two-way trade between India & ASEAN stood at US\$79.86 billion

surpassing the US\$70 billion target. The ASEAN—India Free Area emerged from a mutual interest of both parties to expand their economic ties in the Asia-Pacific region. India's Look East policy was reciprocated by similar interests of many ASEAN countries to expand their interactions westward.

This paper extends the existing studies in two important ways. First, to the best of our knowledge, this is the one of first study that analyses the Intra Industry trade for the period of 1996 to 2015. Second, it will also help us to understand the potential of commodities value chain between India and ASEAN and possible trade cooperation. The rest of the paper addresses the following aspects of India – ASEAN trade relations with special reference to following countries. The data on the above aspect has been collected from secondary sources.

#### 2. THEORITICAL REVIEW OF INTRA INDUSTRY TRADE

Interest in the intra-industry phenomenon largely emerged from the works done by researchers in 1960s on the impact of formation of the EEC (European Economic Community) on trade flows within the member countries. The original study was that of Verdoorn on the changes in the pattern of trade of the Benelux's countries following their union<sup>2</sup>. He found that specialization and trade between the member countries had taken place within the similar product categories rather than between different product categories.

(Balassa, 1996)<sup>3</sup>, measured intra trade and defines the two ways exchange of goods occurs within industry rather than industries. (Veeramani, 2003) 4, explains that with liberalization of Indian Economy, the intra industry trade likely to expand. (Lancaster, 1980)<sup>5</sup> Pointed, but that even in the case of intra industry trade, "comparative advantage is somewhere in the background". One could say that inter industry trade reflects natural comparative advantage while intra industry trade reflects acquired comparative advantage. (Balassa, Economies of scale, Imperfect competition and International trade)<sup>6</sup>, found that the volume of trade surged but most of the increase involved the exchange of differentiated products within each broad industrial classification. Several others intra industry trade developed krugman, Lancaster and (Helpman, 1979)<sup>7</sup>, firstly H-O model based on comparative advantage or differences in factor endowments (land, labour, natural resources and technology), among nations, intra industry trade is based on product differentiation and economies of scale. Thus, trade based on comparative advantage is likely to be larger when the differences in factor endowments among nations are greater; intra industry trade is likely to be largely among industrial economies of similar size and factor proportions. Secondly, with differentiated products produce economies of scale, where a large country may produce a commodity at lower cost than smaller country in the absence of trade, because of larger economies of scale. However, all countries can take advantage of economies of scale to the same extent and the smaller country could conceivably undersell the larger nation in the same commodity.

#### 3. DATA COVERAGE AND METHODS

The present study covers the period of 1996-2015 and Indian foreign (merchandise) trade at the2-digit level of HS classification published by Directorate General of Commercial Intelligence and Statistics (DGCl&S). Items are classified in HS code by chapter wise (2-digit) developed by world custom organization and more than 5000+ commodities enter trade and it is classified in 21 sections and further divided in to 99 categories. However the last two chapter (C-98) project goods and (C-99) miscellaneous goods included in chapter -97. HS code divided in to two schedule- first schedule, describes the rules & regulations of import policies and second schedule, describe the rules and regulations of export policies<sup>8</sup>. Over 98% of the merchandise in international trade is classified in terms of harmonized system code. This paper studies the 2-digit HS code classification by using Grubell Lloyd index. The most often used method for determining the extent trade was proposed by Grubell Lloyd to calculate intra industry trade. The standard formula for calculating the importance of intra industry trade is-

$$G_I = 1 - \frac{|exports - imports|}{exports + imports}$$

Where the expression of |exports-imports| means "absolute value of trade balance". If the exports are \$100 million more than imports, the numerator of fraction is100, but if the exports are \$100 million less than

imports, it is also 100. In comparative advantage of international trade, we expect either country to export good or to import it; in that case one would always equal to zero. On the other hand, if country's export and import within an industry are equal, we find I=1.If the index number is zero indicates that trade flow in a particular industry for particular country are totally inter industry trade. If the index take value of one, than there is perfect intra industry trade.

INDIA BILATERAL TRADE WITH ASEAN COUNTRIES (Indonesia, Malaysia, Singapore and Thailand)

Table 1: list of Indian HS classification code

section	product	product categories description
	categories(2-	
	digit)	
1	01-05	live animal & animal products
2	6-14	vegetable products
3	15	animal & animal fats and oil & their cleavage
		products; prepared edible fats, animal & vegetable
		waxes
4	16-24	food stuffs ,beverages, spirits & vinegar,tobaco
		&manufactured tobacco substitute
5	25-27	mineral products
6	28-38	chemical & allied products
7	39-40	rubber & plastic products
8	41-43	raw hides & skins, leather, furskins & article there
		off, saddlery & harness and animal gut articles
9	44-46	wood products and there off
10	47-49	pulp of wood & paper
11	50-63	textile & textile articles
12	64-67	footwear, headgear, human hair n there off etc.
13	68-70	stone/mica/ceramic /glassware products
14	71	precious metal stones
15	72-83	base metal/article of base
16	84-85	machinery & machinery appliances, electrical
		equipments etc.
17	86-89	vehicles, aircraft vessel & transport
18	90-92	optical photographic parts, medical, surgical
		instruments & apparatus
19	93	arms & ammunition, parts & accessories
20	94-96	miscellaneous manufacture articles
21	97-99	works of arts, pieces & antiques

Source: www.DGFT.com

#### 5.AVERAGE INTRA-INDUSTRY TRADE BETWEEN INDIA AND INDONESIAFROM 1996 TO 2015 (2-DIGIT)

An India and Indonesia relation refer to the bilateral relations of India and Indonesia. India and Indonesia are neighbours. India's Andaman and Nicobar Islands share a maritime border with Indonesia along the Andaman Sea. Indonesia has emerged as the largest trading partner of India in the ASEAN region. Bilateral trade has increased from US\$ 4.3 billion in 2005-06 to US\$ 17 billion in 2016-17. India is the second largest buyer of coal and crude palm oil from Indonesia and imports minerals, rubber, pulp and paper and hydrocarbons reserves. India exports refined petroleum products, commercial vehicles, telecommunication equipment, agriculture commodities, bovine meat, steel products and plastics to Indonesia<sup>9</sup>. There is a high potential of intra-industry trade in Bangladesh-India trade relations, as there is a common border between the two countries on both sides of Bangladesh<sup>10</sup>. With a view to studying the Intra industry trade, the Grubel Lloyd indices at HS 2- digit level have been computed. The study shows the number of commodities of average GL- index during 1996 to 2015, indicates rising

opportunities for intra-industry trade. This can be shown in table 2.

Table 2: overall average GL index of India and Indonesia intra trade

HS CODE	PRODUCT NAME	GL
		index
	HIGH INTRA TRADE	
41 - 43	Raw hides & skins, leather, furskins & article there off,	0.79
	saddler & harness and animal gut articles	
68 - 70	Stone/mica/ceramic /glassware products	0.79
84 - 85	Machinery & machinery appliances, electrical equipments etc	0.78
28 - 38	Chemical & allied production	0.74
50 - 63	Textile & textile articles	0.72
86 - 89	Vehicles, aircraft vessel & transport	0.63
6 - 14	Vegetable products	0.60
	AVERAGE INTRA TRADE	
64 - 67	Footwear, headgear, human hair and there off etc	059
90 - 92	Optical photographic parts ,medical ,surgical instruments &	0.59
	apparatus	
39 - 40	Rubber & plastic products	0.58
94 - 96	Miscellaneous manufacture articles	0.54
97 - 99	Works of arts pieces & antiques	0.52
25 - 27	Mineral products	0.50
72 - 83	Base metal/article of base	0.48
	LOW INTRA TRADE	
16 - 24	Food stuffs ,beverages, tobacco	0.23
71	Precious metal stones	0.20
1 - 5	Live animal & animal products	0.11
47 - 49	Pulp of wood & paper	0.08
44 - 46	Wood products and there off	0.04
15	Animal & animal fats and oil & their cleavage products;	INTER
	prepared edible fats, animal & vegetable waxes	
93	Arms and ammunition	INTER

According to Grubell Lloyd index, India and Indonesia have maintained high intra trade in seven commodities by 2- digit HS code which are -raw hides & skins, leather, furskins & article there off, saddler & harness and animal gut articles; Stone, mica, ceramic & glassware products; Machinery & machinery appliances, electrical equipments etc; Chemical & allied production; textile & textile articles; Vehicles, aircraft vessel & transport; and vegetable products. While other seven commodities occur average intra trade which are -footwear, headgear, human hair and there off etc; optical photographic parts, medical, surgical instruments & apparatus; rubber & plastic products; miscellaneous manufacture articles; works of arts pieces & antiques; mineral products; and base metal & article of base. Thus it may be concluded that India and Indonesia have high and average intra trade with fourteen commodities in which both countries have maintained economies of scale and product differentiation. The other commodities occur in inter trade due to low intra trade or GL index

#### 6. AVERAGE INTRA-INDUSTRY TRADE BETWEEN INDIA AND MALAYSIA FROM 1996 TO 2015 (2-DIGIT)

India and Malaysia have a long history of trade and cultural relations. Diplomatic relations between India and Malaysia were established in 1957 and the two countries in 2016 have completed the 59th anniversary of the foundation of their diplomatic engagement. Bilateral relations between India and Malaysia are cordial and both the countries have interactions in various domains of economic, political, strategic, and cultural activities; and have cooperated on a sustained basis at various international fora<sup>11</sup>. India is Malaysia's largest trading partner among countries of the South, excluding ASEAN and China. Similarly, Malaysia has emerged as India's second largest trading partner in the ASEAN after Singapore. There is a high potential of intra-industry trade in Malaysia-India trade relations, the Grubel Lloyd indices at HS 2- digit level have been computed. The study shows the number of commodities of average GL- index during 1996 to 2015, indicates rising opportunities for intra-industry

trade. This can be shown in table 3.

Table 3: overall average GL index of India and Malaysia intra trade

		1
HS CODE	PRODUCT NAME	GL
		index
	HIGH INTRA TRADE	
72 - 83	Base metal/article of base	0.75
68 - 70	Stone/mica/ceramic /glassware products	0.73
28 - 38	Chemical & allied production	0.68
47 - 49	Pulp of wood & paper	0.61
	AVERAGE INTRA TRADE	
90 - 92	Optical photographic parts ,medical, surgical instruments &	0.53
	apparatus	
97 - 99	Works of arts pieces & antiques	0.50
86 - 89	Vehicles, aircraft vessel & transport	0.47
39 - 40	Rubber & plastic products	0.45
50 - 63	Textile & textile articles	0.45
64 - 67	Footwear,headgear,human hair and there off etc	0.42
84 - 85	Machinery & machinery appliances, electrical equipments etc	0.42
16 - 24	Food stuffs ,beverages, tobacco	0.39
25 - 27	Mineral products	0.36
71	Precious metal stones	0.33
94 - 96	Miscellaneous manufacture articles	0.33
	LOW INTRA TRADE	'
41 - 43	Raw hides & skins, leather, furskins & article there off,	0.08
	saddler & harness and animal gut articles	
15	Animal & animal fats and oil & their cleavage products;	0.03
	prepared edible fats, animal & vegetable waxes	
6 - 14	Vegetable products	0.01
1 - 5	Live animal & animal products	INTER
44 - 46	Wood products and there off	INTER
93	Arms and ammunition	INTER

According to Grubell Lloyd index, India and Malaysia have maintained high intra trade in only four commodities by 2- digit HS codes which are -base metal & article of base; Stone, mica, ceramic & glassware products; chemical & allied production; and Pulp of wood &paper. While other eleven commodities occur in average trade which are -optical photographic parts, medical, surgical instruments & apparatus; Works of arts pieces & antiques; vehicles, aircraft vessel & transport; rubber & plastic products; Textile & textile articles; footwear, headgear, human hair and there off etc; machinery & machinery appliances, electrical equipments etc; Food stuffs, beverages, tobacco; mineral products; Precious metal stones; and miscellaneous manufacture articles. Low intra trade with three commodities which are -raw hides & skins, leather, furskins & article there off, saddler & harness and animal gut articles; animal & animal fats and oil & their cleavage products; and vegetable products. The other three commodities have no intra trade, it shows that all commodities directly reflect inter trade which are live animal & animal products; wood products and there off; and arms and ammunition. Thus it may conclude that India and Malaysia have high and average intra trade in fifteen commodities. This shows that both the countries have been maintained economies of scale and product differentiation in fifteen commodities. The other six commodities occur inter trade and reflected comparative advantage.

#### 7. AVERAGE INTRA-INDUSTRY TRADE BETWEEN INDIA AND SINGAPORE FROM 1996 TO 2015 (2-DIGIT)

India and Singapore share long-standing cultural, commercial and strategic relations, with Singapore being a part of the "Greater India" cultural and commercial region. More than 300,000 people of Indian origin live in Singapore. Following its independence in 1965, Singapore was concerned with China-backed communist threats as well as domination from Malaysia and Indonesia and sought a close strategic relationship with India, which it

saw as a counterbalance to Chinese influence and a partner in achieving regional security. Singapore had always been an important strategic trading post, giving India trade access to the Far East<sup>12</sup>. It is the 8th largest source of investment in India and the largest amongst ASEAN member nations. It is also India's 9th biggest trading partner as of 2005-06. Its cumulative investment in India totals USD 3 billion as of 2006 and is expected to rise to US 5 billion by 2010 and US 10 billion by 2015. India's economic liberalisation and its "Look East" policy have led to a major expansion in bilateral trade, which grew from USD 2.2 billion in 2001 to US 9-10 billion in 2006 – a 400% growth in the span of five years – and to USD 50 billion by 2010. It accounts for 38% of India's trade with ASEAN member nations and 3.4% of its total foreign trade. India's main exports to Singapore in 2005 included petroleum, gemstones, jewellery, machinery and its imports from Singapore included electronic goods, organic chemicals, and metals. More than half of Singapore's exports to India are "re-exports" – items that had been imported from India. The table 4, shows the number of commodities of average GL- index during 1996 to 2015, indicates rising opportunities for intra-industry trade.

Table 4: overall average GL index of India and Singapore intra trade

*** ***		
HS CODE	PRODUCT NAME	GL
		index
	HIGH INTRA TRADE	
72 - 83	Base metal/article of base	0.78
28 - 38	Chemical & allied products	0.65
15	Animal & animal fats and oil & their cleavage products;	0.62
	prepared edible fats, animal & vegetable waxes	
	AVERAGE INTRA TRADE	
68 - 70	Stone/mica/ceramic /glassware products	0.58
86 - 89	Vehicles, aircraft vessel & transport	0.58
44 - 46	Wood products and there off	0.55
90 - 92	Optical photographic parts, medical, surgical instruments &	0.55
	apparatus	
94 - 96	Miscellaneous manufacture articles	0.49
41 - 43	Raw hides &skins,leather, furskins & article there	0.42
	off,saddler& harness and animal gut articles	
97 - 99 39 - 40	Works of arts pieces & antiques	0.42
39 - 40	Rubber & plastic products	0.41
84 - 85	Machinery & machinery appliances, electrical equipments etc	0.41
71	Precious metal stones	0.35
16 - 24	Food stuffs, beverages, tobacco	0.34
25 - 27	Mineral products	0.33
	LOW INTRA TRADE	•
47 - 49	Pulp of wood & paper	0.26
64 - 67	Footwear,headgear,human hair and there off etc	0.25
50 - 63	Textile & textile articles	0.23
6 - 14	Vegetable products	0.17
1 - 5	Live animal & animal products	0.03
93	Arms and ammunition	INTER

#### 8. AVERAGE INTRA-INDUSTRY TRADE BETWEEN INDIA AND THAILAND FROM 1996 TO 2015 (2-DIGIT)

India is considered as a Thailand's prominent partner in South Asia in many aspects. Since both countries have established diplomatic relations for over 70 years, the relationship grew from strength to strength especially in terms of bilateral trade which continuously increased <sup>13</sup>. In the ASEAN region, Thailand ranks as India's 4th largest trading partner after Singapore, Indonesia and Malaysia. Bilateral trade of Thai-India has grown significantly and is growing at a "tremendous" rate and stood at USD 8,815 million in 2015-16 and is expected that it will continue to grow as our free trade agreements which provide us lower tariffs and trade barriers. A target of increasing bilateral trade from \$ 8.8 billion in 2015-16 to \$ 16 billion by 2021 has been set by businesses from both countries <sup>14</sup>. The table 5, shows the number of commodities of average GL- index during 1996 to 2015, indicates rising opportunities for intra-industry trade.

Table 5: overall average GL index of India and Thailand intra trade

HS CODE	PRODUCT NAME	GL
		index
	HIGH INTRA TRADE	
50 - 63	Textile & textile articles	0.84
6 - 14	Vegetable products	0.72
72 - 83	Base metal/article of base	0.72
86 - 89	Vehicles, aircraft vessel & transport	0.70
28 - 38	Chemical & allied products	0.68
94 - 96	Miscellaneous manufacture articles	0.64
	AVERAGE INTRA TRADE	
68 - 70	Stone/mica/ceramic /glassware products	0.57
25 - 27	Mineral products	0.56
90 - 92	Optical photographic parts ,medical ,surgical instruments &	0.56
	apparatus	
64 - 67	Footwear, headgear, human hair and there off etc	0.54
15	Animal & animal fats and oil & their cleavage products;	0.50
	prepared edible fats, animal & vegetable waxes	
97 - 99	Works of arts pieces & antiques	0.49
41 - 43	Raw hides &skins,leather, furskins & article there	0.48
	off,saddler& harness and animal gut articles	
47 - 49	Pulp of wood & paper	0.45
16 - 24	Food stuffs, beverages, tobacco	0.43
84 - 85	Machinery & machinery appliances, electrical equipments etc	0.38
	LOW INTRA TRADE	
71	Precious metal stones	0.29
44 - 46	Wood products and there off	0.15
39 - 40	Rubber & plastic products	0.13
1 - 5	Live animal & animal products	0.02
93	Arms and ammunition	INTER

According to Grubell Lloyd index, India and Thailand have maintained high intra trade in only six commodities by 2- digit HS code which are -textile & textile articles; Vegetable products; base metal & article of base; vehicles, aircraft vessel & transport; chemical & allied products; and miscellaneous manufacture articles. While other ten commodities occur in average intra trade, which are -stone, mica, ceramic & glassware products; mineral products; optical photographic parts, medical, surgical instruments & apparatus; footwear, headgear, human hair and there off etc; animal & animal fats and oil & their cleavage products; Works of arts pieces & antiques; raw hides & skins, leather, furskins & article there off, saddler & harness and animal gut articles; Pulp of wood & paper; food stuffs ,beverages, tobacco; and machinery & machinery appliances, electrical equipments etc. Low intra trade with four commodities which are -precious metal stones; wood products and there off; rubber & plastic products; and live animal & animal products. The one commodity reflects inter trade which is - arms and ammunition.

#### 9. CONCLUSION

While there are many benefits to the ASEAN-India FTA, there is aconcern in India that the agreement will have several negative impacts on the economy. As previously stated, the two regions aim to reduce their tariffs on a majority of their traded goods. This will allow them to increase the market access to their products. It is criticised, however, that India will not experience as great an increase in market access to ASEAN countries as ASEAN will in India. The economies of the ASEAN countries are largely export-driven, maintaining high export-to-GDP ratios (in 2007, Malaysia had a ratio of over 100%. Considering this, as well as the global financial crisis and India's expansive domestic market, the ASEAN countries will look eagerly towards India as a home for its exports <sup>15</sup>.

#### **APPENDIX**

#### INTRA TRADE OF INDIA AND SELECTED ASIAN COUNTRIES (INDONESIA, MALAYSIA, SINGAPORE AND **THAILAND)**

#### **INDIA AND SINGAPORE GRUBEL LLOYD INDEX**

Product 2 digit	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1-5	NA	0.04	NA	0.03	0.03	0.01	NA	NA	0.02	0.01	0.04	0.14	0.02	0.03	0.10	0.12	0.05	0.04	0.09	0.03
6-14	0.98	0.43	0.23	0.26	0.45	0.27	0.10	0.11	0.05	0.04	0.10	0.05	0.07	0.07	0.06	0.06	0.03	0.11	0.08	0.04
15	0.08	0.60	0.14	0.30	0.80	0.47	0.98	0.41	0.58	0.71	0.92	0.66	0.58	0.67	0.99	0.48	0.95	0.62	0.94	0.62
16-24	0.01	0.07	0.17	0.19	0.09	0.10	0.15	0.16	0.20	0.13	0.24	0.37	0.24	0.56	0.61	0.89	0.61	0.78	0.83	0.63
25-27	0.35	0.23	0.03	0.17	0.77	0.40	0.09	0.01	0.01	0.01	0.48	0.79	0.73	0.68	0.61	0.40	0.21	0.13	0.22	0.41
28-38	0.89	0.75	0.78	0.74	0.72	0.63	0.79	0.65	0.66	0.78	0.59	0.58	0.53	0.56	0.59	0.64	0.72	0.49	0.47	0.52
39-40	0.96	0.92	0.44	0.48	0.64	0.35	0.44	0.54	0.42	0.40	0.38	0.33	0.39	0.32	0.27	0.49	0.23	0.18	0.10	0.10
41-43	0.28	0.21	0.43	0.56	0.54	0.38	0.43	0.43	0.38	0.17	0.32	0.49	0.49	0.39	0.64	0.62	0.37	0.32	0.47	0.63
44-46	0.13	0.03	0.49	0.23	0.21	0.15	0.70	0.64	0.78	0.47	0.54	0.94	0.73	0.60	0.48	0.92	0.47	0.95	0.98	0.81
47-49	0.25	0.16	0.13	0.07	0.06	0.08	0.12	0.08	0.05	0.05	0.04	0.06	0.23	0.58	0.46	0.17	0.23	0.77	0.98	0.87
50-63	0.21	0.22	0.35	0.27	0.20	0.23	0.13	0.14	0.15	0.19	0.24	0.22	0.25	0.19	0.22	0.22	0.20	0.28	0.36	0.39
64-67	0.21	0.17	0.22	0.13	0.17	0.13	0.13	0.30	0.11	0.38	0.22	0.48	0.50	0.22	0.20	0.46	0.33	0.27	0.15	0.32
68-70	0.41	0.38	0.57	0.37	0.46	0.36	0.38	0.64	0.64	0.53	0.98	0.91	0.85	0.63	0.88	0.69	0.56	0.58	0.48	0.43
71	0.16	0.35	0.70	0.21	0.51	0.19	0.15	0.22	0.12	0.03	0.20	0.28	0.30	0.30	0.31	0.41	0.94	0.53	0.77	0.59
72-83	0.99	0.98	0.66	0.88	0.77	0.75	0.67	0.83	0.73	0.71	0.60	0.67	0.63	0.70	0.95	0.98	0.72	0.68	0.98	0.93
84-85	0.56	0.45	0.35	0.28	0.32	0.43	0.42	0.33	0.39	0.31	0.33	0.32	0.55	0.54	0.47	0.51	0.43	0.47	0.49	0.40
86-89	0.37	0.94	0.25	0.73	0.55	0.53	0.11	0.16	0.79	0.84	0.95	0.92	0.76	0.82	0.39	0.29	0.63	0.54	0.37	0.79
90-92	0.50	0.30	0.31	0.44	0.33	0.45	0.43	0.56	0.63	0.56	0.55	0.55	0.56	0.55	0.85	0.82	0.87	0.71	0.67	0.70
93	NA																			
94-96	0.74	0.59	0.51	0.69	0.63	0.65	0.67	0.39	0.35	0.45	0.34	0.36	0.45	0.44	0.38	0.33	0.43	0.56	0.57	0.49
97-99	0.28	0.95	0.79	0.93	0.79	0.10	0.17	0.08	0.14	0.16	0.63	0.23	0.41	0.13	0.24	0.67	0.50	0.95	0.43	0.03
total	0.92	0.87	0.54	0.73	0.74	0.85	0.99	0.99	0.79	0.76	0.95	0.95	0.95	0.91	0.84	0.66	0.70	0.70	0.84	0.97

<sup>\*</sup>Source: Commerce & Industry Govt. of India

#### INDIA AND MALAYSIA GRUBEL LLOYD INDEX

Product 2 digit	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1-5	NA																			
6-14	0.02	0.02	NA	0.08	0.07	0.04	0.02	0.02	0.01	0.02	0.01	NA	NA	NA	NA	0.01	NA	NA	NA	NA
15	NA	NA	NA	NA	NA	0.01	NA	NA	0.02	0.09	0.09	0.23	0.13	0.05	0.04	0.02	0.01	0.01	0.05	0.02
16-24	0.28	0.09	0.12	0.15	0.41	0.19	0.12	0.18	0.52	0.55	0.56	0.26	0.32	0.58	0.52	0.50	0.62	0.68	0.69	0.56
25-27	0.11	0.07	0.03	0.02	0.99	0.51	0.69	0.73	0.47	0.22	0.06	0.28	0.09	0.38	0.32	0.40	0.54	0.47	0.62	0.41
28-38	0.59	0.63	0.62	0.60	0.68	0.66	0.62	0.56	0.67	0.63	0.61	0.62	0.65	0.84	0.68	0.79	0.82	0.97	0.85	0.75
39-40	0.30	0.21	0.29	0.57	0.44	0.46	0.66	0.63	0.39	0.66	0.71	0.67	0.59	0.47	0.38	0.42	0.45	0.29	0.21	0.24
41-43	0.31	0.14	0.17	0.08	0.06	0.14	0.15	0.07	0.08	0.10	0.05	0.03	0.06	0.04	0.06	0.09	0.05	0.02	0.05	0.07
44-46	NA																			
47-49	0.58	0.80	0.95	0.99	0.35	0.70	0.43	0.54	0.59	0.85	0.90	0.94	0.60	0.69	0.87	0.87	0.05	0.04	0.34	0.33
50-63	0.10	0.08	0.14	0.62	0.51	0.57	0.64	0.52	0.48	0.59	0.52	0.37	0.42	0.38	0.27	0.29	0.36	0.44	0.41	0.47
64-67	0.11	0.04	NA	NA	0.06	0.22	0.45	0.89	0.88	0.75	0.84	0.91	0.85	0.83	0.51	0.30	NA	NA	0.27	0.59
68-70	0.56	0.84	0.60	0.46	0.91	0.72	0.71	0.73	0.64	0.77	0.98	0.80	0.98	0.85	0.69	0.81	0.46	0.58	0.95	0.62
71	0.06	0.99	0.55	NA	0.14	0.01	NA	0.01	0.01	0.04	NA	0.38	0.24	0.02	0.81	0.89	0.82	0.59	0.44	0.66
72-83	0.84	0.79	0.61	0.74	0.71	0.83	0.80	0.65	0.87	0.94	0.93	0.80	0.92	0.83	0.97	0.82	0.32	0.23	0.70	0.85
84-85	0.94	0.90	0.44	0.54	0.65	0.78	0.25	0.34	0.28	0.23	0.20	0.26	0.37	0.39	0.32	0.26	0.41	0.33	0.39	0.33
86-89	0.78	0.53	0.17	0.13	0.23	0.19	0.38	0.47	0.45	0.37	0.70	0.60	0.23	0.35	0.24	0.92	0.72	0.89	0.29	0.93
90-92	0.39	0.54	0.37	0.55	0.60	0.64	0.48	0.49	0.58	0.55	0.38	0.48	0.52	0.46	0.44	0.71	0.94	0.56	0.54	0.61
93	NA																			
94-96	0.44	0.33	0.83	0.64	0.35	0.70	0.29	0.34	0.27	0.34	0.15	0.12	0.17	0.30	0.28	0.21	0.20	0.34	0.22	0.18
97-99	0.72	0.21	0.74	0.94	0.78	0.08	0.22	0.59	0.90	0.81	0.80	0.45	0.16	0.84	0.45	0.77	0.65	0.96	0.73	0.88
total	0.64	0.58	0.33	0.37	0.68	0.81	0.67	0.60	0.64	0.64	0.39	0.59	0.64	0.70	0.74	0.59	0.61	0.62	0.68	0.57

<sup>\*</sup>Source: Commerce & Industry Govt. of India

#### INDIA AND INDONESIA GRUBEL LLOYD INDEX

Product 2 digit	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1-5	0.14	0.01	0.07	0.03	NA	NA	0.46	0.14	0.07	0.16	0.29	0.10	0.15	0.14	0.03	0.03	0.03	0.09	0.21	0.23
6-14	0.37	0.85	0.49	0.77	0.74	0.54	0.45	0.65	0.92	0.78	0.89	0.81	0.74	0.88	0.32	0.29	0.30	0.25	0.32	0.78
15	NA	NA	NA	NA	NA	0.02	NA													
16-24	0.14	0.02	0.09	0.12	0.12	0.10	0.33	0.16	0.33	0.18	0.07	0.06	0.08	0.35	0.18	0.47	0.36	0.45	0.81	0.27
25-27	0.15	0.04	0.02	0.10	0.08	0.09	0.99	0.88	0.72	0.24	0.44	0.23	0.31	0.34	0.83	0.52	0.36	0.33	0.17	0.12
28-38	0.69	0.63	0.40	0.67	0.60	0.49	0.71	0.96	0.72	0.54	0.74	0.88	0.90	0.92	0.79	0.72	0.73	0.90	0.95	0.96
39-40	0.24	0.22	0.12	0.75	0.79	0.84	0.86	0.84	0.86	0.53	0.55	0.43	0.65	0.63	0.53	0.64	0.63	0.51	0.58	0.54
41-43	0.69	0.94	0.42	0.99	0.86	0.88	0.69	0.73	0.89	0.98	0.76	0.93	0.96	0.82	0.61	0.72	0.76	0.73	0.93	0.69
44-46	0.01	NA	NA	NA	NA	NA	0.02	0.19	0.26	0.02	0.05	0.05	0.03	0.02	NA	0.02	0.01	0.01	0.01	NA
47-49	NA	NA	NA	0.04	0.08	0.11	0.10	0.06	0.14	0.07	0.12	0.04	0.08	0.11	0.09	0.15	0.14	0.11	0.15	0.17
50-63	0.59	0.87	0.79	0.87	0.93	0.93	0.77	0.67	0.84	0.93	0.57	0.52	0.79	0.62	0.56	0.69	0.53	0.52	0.78	0.83
64-67	0.22	0.35	0.45	0.25	0.42	0.66	0.47	0.78	0.82	0.73	0.63	0.45	0.56	0.49	0.64	0.85	0.87	0.83	0.83	0.63
68-70	0.66	0.68	0.46	0.64	0.84	0.70	0.81	0.75	0.83	0.99	0.73	0.98	0.93	0.97	0.90	0.79	0.85	0.86	0.76	0.77
71	0.13	0.05	0.06	0.03	0.98	0.47	0.41	0.73	0.62	0.10	0.01	0.01	0.21	0.04	0.04	0.01	NA	0.28	NA	NA
72-83	0.14	0.20	0.75	0.69	0.35	0.27	0.16	0.23	0.34	0.42	0.60	0.45	0.49	0.43	0.98	0.50	0.45	0.60	0.91	0.69
84-85	0.24	0.56	0.86	0.73	0.76	0.92	0.97	0.84	0.97	0.56	0.68	0.88	0.70	0.68	0.83	0.97	0.91	0.88	0.91	0.85
86-89	0.11	0.14	0.46	0.67	0.12	0.53	0.72	0.76	0.84	0.98	0.84	0.94	0.42	0.67	0.83	0.35	0.76	0.94	0.87	0.71
90-92	NA	0.90	NA	0.70	0.36	0.54	0.76	0.51	0.39	0.24	0.43	0.57	0.83	0.75	0.55	0.91	0.89	0.78	0.91	0.92
93	NA																			
94-96	0.07	0.43	0.41	0.35	0.36	0.99	0.62	0.96	0.49	0.35	0.34	0.64	0.62	0.75	0.56	0.43	0.44	0.61	0.74	0.75
97-99	0.78	0.71	0.18	0.26	0.64	0.69	0.50	0.97	0.82	0.56	0.37	0.41	0.82	0.02	0.50	0.51	0.08	0.79	0.85	0.20
total	0.99	0.74	0.36	0.50	0.61	0.67	0.74	0.69	0.67	0.62	0.65	0.61	0.55	0.52	0.72	0.62	0.52	0.49	0.42	0.35

<sup>\*</sup>Source: Commerce & Industry Govt. of India

#### INDIA AND THAILAND GRUBEL LLOYD INDEX

Product 2 digit	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1-5	0.01	NA	0.01	0.07	0.16	0.01	0.07	0.11	0.09	0.06	0.01	0.04	0.03	0.03	0.04	0.01	0.01	NA	NA	0.01
6-14	0.42	0.70	0.97	0.81	0.98	0.90	0.88	0.88	0.92	0.95	0.97	0.90	0.83	0.95	0.77	0.32	0.37	0.34	0.38	0.32
15	0.46	NA	0.07	0.14	0.95	0.76	0.02	0.51	0.37	0.12	0.53	0.78	0.68	0.92	0.96	0.78	0.96	0.32	0.53	0.35
16-24	0.06	0.31	0.68	0.75	0.12	0.08	0.98	0.13	0.40	0.13	0.34	0.16	0.14	0.98	0.78	0.40	0.25	0.43	0.73	0.84
25-27	0.38	0.84	0.09	0.91	0.26	0.59	0.10	0.33	0.91	0.87	0.55	0.43	0.39	0.59	0.50	0.63	0.55	0.82	0.75	0.80
28-38	0.96	0.87	0.56	0.35	0.28	0.37	0.43	0.48	0.62	0.62	0.84	0.78	0.83	0.92	0.71	0.77	0.79	0.78	0.78	0.95
39-40	0.17	0.21	0.09	0.09	0.26	0.26	0.19	0.18	0.14	0.19	0.21	0.16	0.15	0.15	0.13	0.13	0.16	0.14	0.15	0.17
41-43	0.08	0.40	0.45	0.25	0.12	0.11	0.18	0.08	0.32	0.47	0.45	0.48	0.70	0.84	0.86	0.92	0.91	0.78	0.94	0.47
44-46	0.83	NA	0.03	0.05	0.15	0.13	0.56	0.14	0.12	0.10	0.06	0.07	0.10	0.10	0.08	0.06	0.10	0.09	0.12	0.15
47-49	0.09	0.05	0.04	0.20	0.38	0.64	0.44	0.69	0.61	0.25	0.31	0.27	0.46	0.81	0.70	0.57	0.50	0.84	0.81	0.54
50-63	0.88	0.76	0.83	0.93	0.97	0.76	0.61	0.79	0.62	0.74	0.93	0.94	0.95	0.92	0.91	0.93	0.83	0.76	0.99	0.97
64-67	0.93	0.95	0.81	0.22	0.82	0.17	0.07	0.24	0.12	0.26	0.69	0.69	0.89	0.73	0.90	0.76	0.22	0.33	0.65	0.47
68-70	0.31	0.54	0.76	0.95	0.96	0.94	0.60	0.70	0.52	0.53	0.47	0.36	0.56	0.51	0.37	0.38	0.55	0.60	0.48	0.45
71	0.13	0.21	0.10	0.17	0.18	0.11	0.10	0.17	0.19	0.18	0.30	0.25	0.50	0.46	0.61	0.66	0.59	0.45	0.26	0.28
72-83	0.25	0.37	0.98	0.51	0.56	0.54	0.37	0.51	0.67	0.88	0.98	0.91	0.99	0.99	0.99	0.74	0.90	0.95	0.79	0.64
84-85	0.84	0.80	0.61	0.32	0.27	0.21	0.45	0.51	0.35	0.24	0.22	0.27	0.48	0.34	0.36	0.28	0.36	0.35	0.28	0.27
86-89	0.18	0.43	0.24	0.62	0.25	0.51	0.97	0.70	0.49	0.90	0.94	0.96	0.91	0.93	0.99	0.94	0.96	0.86	0.78	0.68
90-92	0.33	0.31	0.23	0.35	0.46	0.59	0.83	0.79	0.70	0.79	0.53	0.71	0.78	0.58	0.44	0.60	0.51	0.66	0.59	0.56
93	NA																			
94-96	0.96	0.89	0.65	0.87	0.94	0.76	0.75	0.50	0.42	0.41	0.36	0.28	0.42	0.59	0.51	0.67	0.89	0.86	0.63	0.67
97-99	0.96	NA	0.91	0.70	0.41	0.44	0.41	0.58	0.92	0.57	0.54	0.68	0.85	0.54	0.35	0.16	0.10	0.05	0.25	0.50
total	0.61	0.79	0.91	0.84	0.77	0.80	0.69	0.84	0.97	0.94	0.90	0.79	0.83	0.74	0.69	0.71	0.82	0.81	0.74	0.70

<sup>\*</sup>Source: Commerce & Industry Govt. of India

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