IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

Revealed Comparative Advantage & Competitiveness in India and European Union (EU) -27: An Empirical Analysis

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Abstract: India has developed many international trade relations with major world economies over the last 15 years. The European Union is a major trading partner of India. India is about to enter into an agreement for free trade (FTA) with the European Union(EU), It is necessary to examine the sectoral competitiveness of India in relation to its trade partner EU- 27. This paper examines the revealed comparative advantage (RCA) in the EU-27 as a sectoral comparative analysis for the study period 1994 to 2020. This analysis has used Balassa's index of RCA. According to this empirical analysis, the study found that India has revealed comparative advantages in 22 products and revealed comparative disadvantages in 43 products out of 65 products with EU-27.

Keywords: Comparative advantage, Competitiveness, FTA, and EU-27.

Introduction:

India has been known as the globe's highest-evolving economy representing several substantial and dynamic marketplaces, containing an annual GDP expansion rate of around7%. India has been essential commerce as well as investment collaborator for countries like the European Union. The EU has been the biggest trading bloc in the world as well as it established trade relations with a variety of emerging countries via trading and collaboration contracts.

The India and EU Strategic Partnership was formed in 2004, but the India-EU diplomatic relationship began in 1962. The 1994 India-EU partnership, which served as the legislative structure for India-EU ties, promoted political, economic and regional cooperation. India-EU relations have developed regularly, through meetings of ministries and experts. In addition, there have been regular parliamentary exchanges. To underline that strategic partnership, the 2005 summit adopted the India-EU Joint Action Plan (AP JAP), which was updated in 2008. The leaders of India and the European Union agreed in 2016 to deepen collaboration on the execution of Agenda 2030 for Sustainable Economic Development. ICTs are being developed under the Partnership tool to aid in the execution of the India-EU Action-2020 vision in sectors such as energy, water, climate change, urban development, and resource efficiency. On July 15, 2020, India and the European Union held their 15th summit. They supported the "India-EU Strategic Alliance: A Strategy to 2025" for the next five years as a common plan to guide cooperative action and further develop the India-EU strategic partnership.

The European Union is India's most important trading partner, accounting for 16.6% of Indian exports and 10.4% of imports in 2020. In the previous thirty years, trade between the European Union and India has increased steadily. In the 1990s, India's exports to Europe were around $10 billion, which increased from $21.2 billion in the early 2000s to $83.9 billion in 2010. This climbed to US$109.7 billion in 2011, surpassing the US$100 billion mark for the first time. As a result, it is important to evaluate India's relative competitiveness and compare the framework of trade specialisation with that of the European Union. The current study's empirical analysis is based on revealed comparative advantage (RCA).

Objective of the Study:

- To analyse the competitiveness of India's exports to EU.

Methodology:

Balassa constructed an index that measures a country's revealed comparative advantage (RCA). Balassa (1965) developed the most widely used approach to analysing revealed comparative advantage known as the Balassa Index. The proposed simple measure of RCA by Leisner is the following:

RCA1 = Xij / Xnj

Where X represents exports, i is a country, j is a commodity (or industry), and n is a set of countries (e.g. the EU).A comprehensive / advanced measure of RCA was later on presented by Balassa (1965). This is a widely accepted and afterwards modified measure of RCA in the literature. It is expressed as follows:

RCA2 = (Xij / Xit) / (Xnj / Xnt) = (Xij / Xnj) / (Xit / Xnt)

Where X represents exports, i is a country, j is a commodity (or industry), t is a set of commodities (or industries) and n is a set of countries.

RCA2 measures a country's exports of a commodity (or industry) relative to its total exports and to the corresponding exports of a set of countries, e.g. the EU. A comparative advantage is "revealed", if RCA2 >1. If RCA2 is less than unity, the country is said to have a comparative disadvantage in the commodity / industry.

Data Sources and Description:

The country's exports and imports are classified by commodity and detailed by SITC (United Nations Standard International Trade Classification) from the UN COMTRADE database. There are several different categories inside each major SITC heading, therefore these more in-depth analyses are important. The study used the two digits SITC- Revision 3 (65 products) for 1994 to 2020. It is possible to do this through the use of this classification for a range of commodity types to examine the trade patterns of India and the European Union.

The study based on the 2 digit-level data of SITC-3[1], which consists of a total of 65 items, divided into 9 groups in 0 to 9 coding and sub 67 items also have specific codes for the period 1994 to 2020, whose names with codes are provided in annexure1.

Results and Empirical Findings

The study examined that there are 22 products have revealed comparative advantages in out of 65 products in the study period 1994 to 2020 in Table 1. India has a relatively high comparative advantage on the export of Food and live animal products. Out of 10 products, 3 products have comparative advantage over the period. According to SITC Revision 3 India has Revealed comparative advantages with EU in Fish, crustaceans, molluscs and preparations thereof (03) , Cereals and cereal preparations (04), Coffee, tea, cocoa, spices, and manufactures thereof (07). In 1st classification Tobacco and tobacco manufactures (12), and Oil seeds and oleaginous fruits (22) have RCA>1 in EU market. These products are highly revealed comparative advantages with EU. In 2 classification crude materials, inedible, except fuels (2), India has revealed comparative advantages in export of Textiles fibres and their wastes (26) and Crude fertilizers other than division 56, and crude minerals (27) for 1994-2020 years. India has interestingly highly revealed comparative advantage in the petroleum, petroleum products and related materials (33). In the 4th classification, India has RCA>1 for Fixed vegetables oils and Fats, crude, refined or fractionated (42) and Processed Animal and vegetable oils and fats (43). It presents that these products have trade potential in EU markets. Further, 5th classification is of chemical and related products, n.e.s., India has RCA>1 in 2 products out of 9 products. Dyeing, tanning and colouring materials (53) have revealed comparative advantages for all the years. India has most highly revealed comparative advantage in manufactured goods (6). This category has total 9 two digit products and 6 products have highly revealed comparative advantage and trade potential in EU market.

In 7th classification Machinery and transport equipment (7) only one product has RCA>1 that is power generating machinery and equipment (71). Miscellaneous manufactured articles are in 8th category of SITC one digit data and in this category Travel goods, handbags, etc. (83), Articles of apparel & clothing accessories (84) and Footwear (85) have highly revealed comparative advantage

[1] STANDARD INTERNATIONAL TRADE CLASSIFICATION (SITC) REVISION 3, https://unctadstat.unctad.org/en/Classifications/DimSitcRev3Products_Official_Hierarchy.pdf

with EU. 9th category products Coin (other than gold coin), not being legal tender (96) and Gold, non – monetary (excluding gold ores and concentrates) (97) have revealed comparative disadvantage for all the years in EU market.

India has revealed comparative advantage in each category of products which shows that India has trade diversion with EU after the strategic partnership. RCA and Trade value has improved over the years, it explains that India and EU has trade creation effect in these products. The competitiveness and trade potential of Indian exports in selected commodities with respect to EU have improved. The detailed data of RCA index of India with respect to EU – 27 for 1994 to 2020 which calculated by researcher has given in annexure 2.

Figure: 1 RCA Index for India with respect to EU for 1994 to 2020

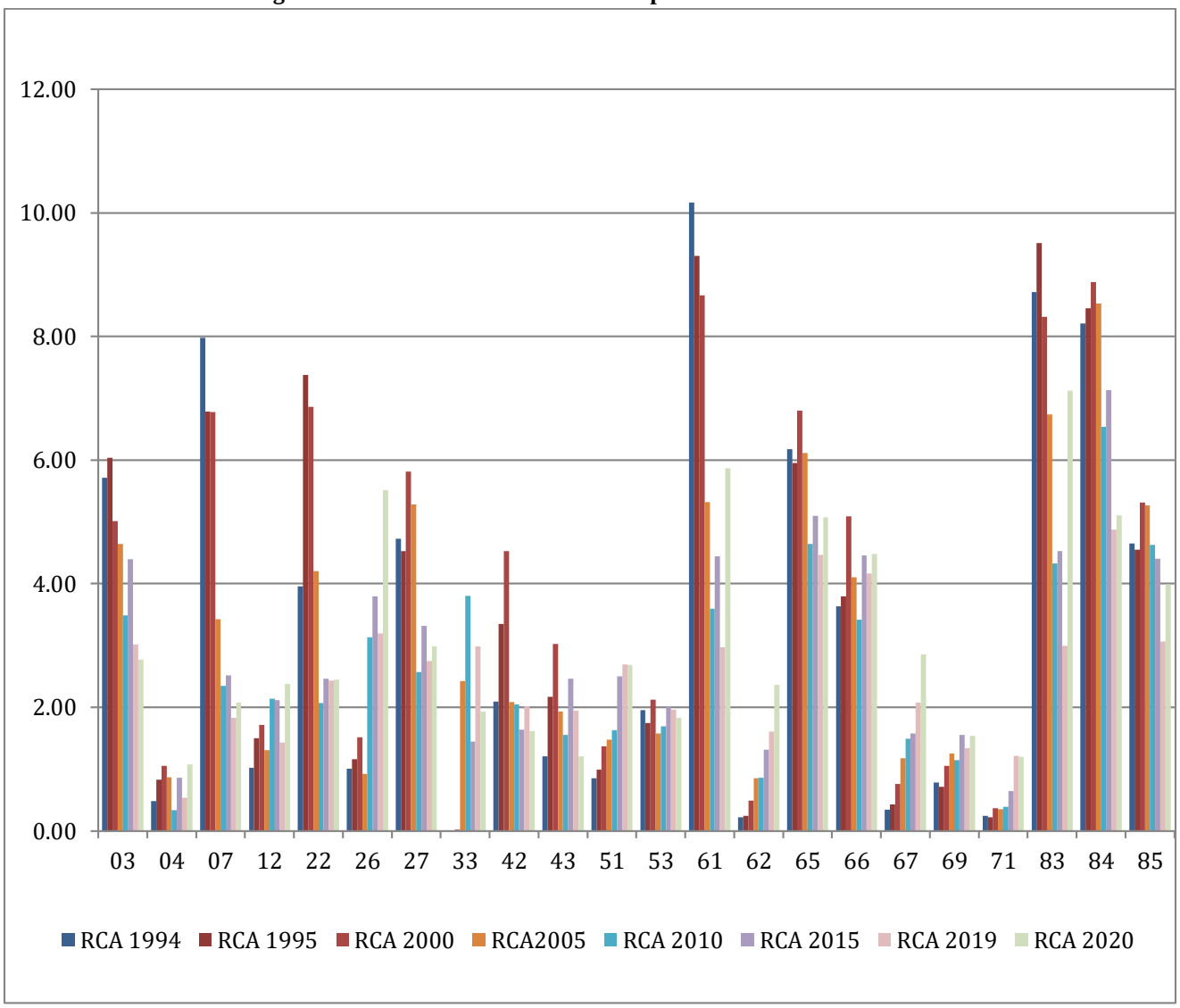

Table: 1 Sectors which have revealed comparative advantages (RCA) for the year 1994-2020 are

Product Code	Product Description
03	Fish, crustaceans, molluscs and preparations thereof
04	Cereals and cereal preparations
07	Coffee, tea, cocoa, spices, and manufactures thereof
12	Tobacco and tobacco manufactures
22	Oil seeds and oleaginous fruits
26	Textiles fibres and their wastes

27	Crude fertilizers other than division 56, and crude minerals
33	Petroleum, petroleum products and related materials
42	Fixed vegetable oils and fats, crude, refined or fractionated
43	Processed Animal and vegetable oils and fats
51	Organic chemicals
53	Dyeing, tanning and colouring materials
61	Leather, leather manufactures and dressed furskins
62	Rubber manufactures, n.e.s.
65	Textile yarn and related products
66	Non metallic mineral manufactures, n.e.s.
67	Iron and steel
69	Manufactures of metal, n.e.s.
71	Power generating machinery and equipment
83	Travel goods, handbags, etc.
84	Articles of apparel & clothing accessories
85	Footwear

Table: 2 Sectors that have revealed comparative disadvantages (RCD) for the year 1994-2020 are

SITC Product Code	Description
00	Live animals other than animals of division 03
01	Meat and meat preparations
02	Dairy Products and birds eggs
05	Vegetables and fruits
06	Sugar, sugar preparations and honey
08	Feedstuff for animals (excluding unmilled cereals)
09	Miscellaneous edible products and preparations
11	Beverages
21	Hides, skins and furskins, raw
23	Crude rubber (including synthetic and reclaimed)
24	Cork and wood
25	Pulp and waste paper
28	Metalliferous ores and metal scrap
29	Crude animal and vegetable materials, n.e.s.
32	Coal, coke and briquettes
34	Gas, natural and manufactured
41	Animal oils and fats
52	Inorganic chemicals
54	Medicinal and pharmaceutical products
55	Essential oils for perfume materials and cleaning preparations
56	Fertilizers other than group 272
57	Plastics in primary forms
58	Plastics in non-primary forms
59	Chemical materials and products, n.e.s.

63	Cork and wood manufactures (excluding furniture)
64	Paper and paper manufactures
68	Non-ferrous metals
72	Specialised machinery
73	Metal working machinery
74	Other industrial machinery and parts
75	Office machines and automatic data processing machines
76	Telecommunication and sound recording apparatus
77	Electrical machinery, apparatus and appliances, n.e.s.
78	Road vehicles
79	Other transport equipment
81	Prefabricated buildings, sanitary, heating and lighting fixtures, n.e.s.
82	Furniture and parts thereof
87	Professional and scientific instruments, n.e.s.
88	Photo apparatus, optical goods, watches and clocks
89	Miscellaneous manufactured articles, n.e.s.
96	Coin (other than gold coin), not being legal tender
97	Gold, non-monetary (excluding gold ores and concentrates)

Table: 3 Sectors which have revealed comparative advantages at present and has revealed comparative disadvantages at past (RCD⇒RCA) (1994-2020) and (year-by-year observation)

Product Code	Product Description
26	Textiles fibres and their wastes
33	Petroleum, petroleum products and related materials
51	Organic chemicals
62	Rubber manufactures, n.e.s.
67	Iron and steel
69	Power generating machinery and equipment
71	Manufactures of metal, n.e.s.

Table: 4 Sectors which "losing" their revealed comparative advantages in time period and has revealed comparative disadvantage at present (RCA⇒RCD) (1994-2020) and (year-by-year observation)

Product Code	Product Description
05	Vegetables and fruits
06	Sugar, sugar preparations and honey
08	Feedstuff for animals (excluding unmilled cereals)
28	Metalliferous ores and metal scrap
29	Crude animal and vegetable materials, n.e.s.

Table 2 is shown that India has revealed comparative disadvantage in 43 products out of 65 products for the study period 1994 to 2020. In Table 4, Vegetables and fruits(08), Sugar, sugar preparations and honey (06), Feedstuff for animals (excluding unmilled cereals) (08), Metalliferous ores and metal scrap (28) and Crude animal and vegetable materials, n.e.s. (29) have loosed their RCA and converted in revealed comparative disadvantage over the years.

Conclusion:

India has most highly revealed comparative advantage in manufactured goods (6). This category has total 9 two digit products and 6 products with code 61, 62, 65, 66, 67, and 69 have highly revealed comparative advantage and trade potential in EU market. The results found that India has revealed comparative disadvantage in agricultural products 43 products out of 65 products for the study period 1994 to 2020. Vegetables and fruits (08), Sugar, sugar preparations and honey (06), Feedstuff for animals (excluding unmilled cereals) (08), Metalliferous ores and metal scrap (28) and Crude animal and vegetable materials, n.e.s. (29) have loosed their RCA and converted in revealed comparative disadvantage over the years. The study observed that the main reason of the above that the incidence of NTMs is decisively higher for Primary Sector.

It is recommended that the Indian farmers and firms should prepare themselves for export of more quality goods which are competitive in nature. The advantages of integration should bring in agriculture and agricultural products also. India has more profit in

export of garments or clothing to EU, so it is necessary to improve the quality of production of clothing fabrics and give some intensive to increase the production of textile industry. India should restart negotiations with the EU on a Free Trade Agreement (FTA) to eliminate or reduce non-tariff barriers on agricultural and non agricultural products.

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Annexure 1

Standard International Trade Classification (SITC) Revision 3

Code	Code Label
TOTAL	TOTAL Total all products
0	0 Food and live animals
00	00 Live animals other than animals of division 03
01	01 Meat and meat preparations
02	02 Dairy products and birds' eggs
03	03 Fish, crustaceans, molluscs and preparations thereof
04	04 Cereals and cereal preparations
04	05 Vegetables and Fruits
06	06 Sugar, sugar preparations and honey
07	07 Coffee, tea, cocoa, spices, and manufactures thereof
08	08 Feedstuff for animals (excluding unmilled cereals)
09	09 Miscellaneous edible products and preparations
1	1 Beverages and tobacco
11	11 Beverages
12	12 Tobacco and tobacco manufactures
2	2 Crude materials, inedible, except fuels
21	21 Hides, skins and furskins, raw
22	22 Oil seeds and oleaginous fruits
23	23 Crude rubber (including synthetic and reclaimed)
24	24 Cork and wood
25	25 Pulp and waste paper
26	26 Textiles fibres and their wastes
27	27 Crude fertilizers other than division 56 and crude minerals

28	28 Metalliferous ores and metal scrap
29	29 Crude animal and vegetable materials, n.e.s.
3	3 Mineral fuels, lubricants and related materials
32	32 Coal, coke and briquettes
33	33 Petroleum, petroleum products and related materials
34	34 Gas, natural and manufactured
35	35 Electric current
4	4 Animal and vegetable oils, fats and waxes
41	41 Animal oils and fats
42	42 Fixed vegetable oils and fats, crude, refined or fractionated
43	43 Processed Animal and vegetable oils and fats
5	5 Chemicals and related products, n.e.s.
51	51 Organic chemicals
52	52 Inorganic chemicals
53	53 Dyeing, tanning and colouring materials
54	54 Medicinal and pharmaceutical products
55	55 Essential oils for perfume materials and cleaning preparations
56	56 Fertilizers other than group 272
57	57 Plastics in primary forms
58	58 Plastics in non-primary forms
59	59 Chemical materials and products, n.e.s.
6	6 Manufactured goods
61	61 Leather, leather manufactures and dressed furskins
62	62 Rubber manufactures, n.e.s.
63	63 Cork and wood manufactures (excluding furniture)
64	64 Paper and paper manufactures
65	65 Textile yarn and related products
66	66 Non metallic mineral manufactures, n.e.s.
67	67 Iron and steel
68	68 Non-ferrous metals
69	69 Manufactures of metal, n.e.s.
7	7 Machinery and transport equipment
71	71 Power generating machinery and equipment
72	72 Specialised machinery
73	73 Metal working machinery
74	74 Other industrial machinery and parts
75	75 Office machines and automatic data processing machines
76	76 Telecommunication and sound recording apparatus
77	77 Electrical machinery, apparatus and appliances, n.e.s.
78	78 Road vehicles
79	79 Other transport equipment
8	8 Miscellaneous manufactured articles
81	81 Prefabricated buildings, sanitary, heating and lighting fixtures, n.e.s.
82	82 Furniture and parts thereof
83	83 Travel goods, handbags, etc.
84	84 Articles of apparel & clothing accessories
85	85 Footwear
87	87 Professional and scientific instruments, n.e.s.
88	88 Photo apparatus, optical goods, watches and clocks
89	89 Miscellaneous manufactured articles, n.e.s.
9	9 Commodities and transactions, n.e.s.
96	96 Coin (other than gold coin), not being legal tender
97	97 Gold, non-monetary (excluding gold ores and concentrates)

Annexure 2

Revealed Comparative Advantage of India with respect to EU – 27 for 1994 to 2020 with RCAI

SITC Code	Years											
	RCA 1994	RCA 1995	RCA 1996	RCA 1997	RCA 1998	RCA 1999	RCA 2000	RCA 2001	RCA 2002	RCA 2003	RCA 2004	RCA 2005
00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
01	0.02	0.07	0.04	0.01	0.04	0.02	0.05	0.04	0.08	0.08	0.16	0.03
02	0.03	0.02	0.13	0.08	0.02	0.02	0.03	0.06	0.08	0.06	0.06	0.07
03	5.71	6.04	4.83	2.42	3.38	4.21	5.01	5.19	5.69	5.51	4.31	4.64
04	0.48	0.83	0.96	0.91	0.81	0.78	1.05	1.19	0.87	0.92	1.01	0.87
05	1.30	1.21	1.53	1.73	1.54	1.99	1.97	1.65	1.45	1.16	1.22	1.35
06	0.02	1.65	2.24	0.50	0.09	0.13	0.35	0.81	1.11	0.74	0.45	0.27
07	7.98	6.78	6.57	8.81	9.32	8.14	6.77	6.82	4.73	4.16	3.73	3.43
08	2.40	1.11	1.28	1.00	0.66	0.21	0.13	0.20	0.16	0.15	0.24	0.09
09	0.21	0.27	0.32	0.26	0.24	0.28	0.31	0.33	0.30	0.14	0.07	0.07
11	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01
12	1.02	1.50	2.43	2.98	1.86	2.37	1.72	1.73	1.63	1.68	1.71	1.31
21	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.04	0.09	0.14	0.21
22	3.96	7.38	7.51	9.52	4.29	4.97	6.86	7.08	3.73	4.92	6.12	4.20
23	0.23	0.21	0.20	0.10	0.18	0.19	0.21	0.32	0.42	0.68	0.75	0.90
24	0.00	0.00	0.01	0.01	0.01	0.02	0.04	0.05	0.05	0.04	0.04	0.04
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
26	1.01	1.16	2.40	1.95	1.49	1.58	1.52	0.68	0.68	0.73	1.20	0.92
27	4.73	4.53	4.15	2.21	2.86	4.95	5.81	6.03	5.97	5.13	5.60	5.28
28	0.93	0.85	1.05	0.76	1.21	0.81	0.44	0.38	1.07	0.54	0.90	0.98
29	1.57	1.98	2.30	3.06	3.20	2.76	2.62	2.80	2.23	1.90	2.02	1.87
32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
33	0.00	0.00	0.01	0.03	0.05	0.03	0.02	0.02	0.12	1.14	1.07	2.42
34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
41	0.01	0.01	0.03	0.00	0.02	0.03	0.19	0.22	0.22	0.08	0.22	0.22
42	2.09	3.35	2.92	1.71	2.76	3.80	4.53	3.66	1.93	1.75	2.89	2.08
43	1.20	2.17	2.81	1.57	1.82	2.65	3.02	2.83	3.30	4.80	5.44	1.93
51	0.85	0.99	1.18	1.42	1.18	1.26	1.37	1.34	1.40	1.56	1.55	1.48
52	0.34	0.38	0.51	0.43	0.42	0.45	0.66	0.61	0.59	0.61	0.55	0.59
53	1.95	1.74	2.02	2.14	1.60	1.84	2.12	1.91	1.83	1.81	1.53	1.58
54	0.93	0.89	0.91	0.92	0.65	0.56	0.59	0.48	0.51	0.50	0.50	0.46
55	0.29	0.28	0.26	0.29	0.28	0.31	0.29	0.27	0.27	0.28	0.24	0.24
56	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.03	0.03	0.01
57	0.05	0.05	0.09	0.11	0.17	0.18	0.24	0.26	0.22	0.24	0.49	0.32
58	0.41	0.71	0.42	0.40	0.33	0.37	0.28	0.33	0.40	0.38	0.40	0.43
59	0.46	0.66	0.78	0.96	0.69	0.79	0.78	0.96	0.83	0.71	0.79	0.74
61	10.17	9.30	7.00	8.02	8.76	7.28	8.66	9.40	8.84	5.79	5.67	5.32
62	0.22	0.25	0.26	0.35	0.41	0.45	0.49	0.57	0.72	0.76	0.79	0.85
63	0.13	0.10	0.11	0.13	0.10	0.10	0.09	0.11	0.13	0.12	0.16	0.12
64	0.02	0.03	0.05	0.04	0.05	0.04	0.04	0.05	0.07	0.10	0.10	0.12
65	6.17	5.95	6.31	6.14	5.80	6.18	6.80	6.71	6.17	6.05	6.23	6.11
66	3.63	3.80	3.61	3.96	4.80	4.68	5.09	5.13	4.98	4.96	4.40	4.10
67	0.35	0.43	0.38	0.72	0.58	0.64	0.76	0.62	0.60	0.78	1.74	1.18
68	0.11	0.08	0.10	0.12	0.14	0.19	0.23	0.19	0.21	0.26	0.25	0.22
69	0.79	0.72	0.69	0.79	0.78	0.88	1.05	1.19	1.12	1.22	1.27	1.26
71	0.25	0.22	0.25	0.25	0.22	0.32	0.37	0.23	0.21	0.27	0.34	0.35
72	0.06	0.06	0.08	0.10	0.11	0.12	0.16	0.20	0.17	0.18	0.18	0.19
73	0.10	0.09	0.11	0.20	0.25	0.25	0.32	0.39	0.31	0.37	0.45	0.44

74	0.09	0.11	0.11	0.17	0.21	0.20	0.23	0.28	0.29	0.33	0.34	0.37
75	0.05	0.15	0.19	0.16	0.06	0.06	0.08	0.13	0.16	0.16	0.16	0.13
76	0.14	0.14	0.09	0.11	0.06	0.06	0.05	0.07	0.10	0.12	0.11	0.09
77	0.12	0.21	0.25	0.15	0.17	0.22	0.25	0.35	0.39	0.43	0.41	0.44
78	0.23	0.24	0.26	0.23	0.21	0.18	0.20	0.16	0.16	0.26	0.34	0.28
79	0.07	0.02	0.03	0.06	0.20	0.27	0.19	0.17	0.20	0.21	0.35	0.63
81	0.02	0.03	0.04	0.02	0.04	0.06	0.11	0.12	0.11	0.07	0.07	0.11
82	0.02	0.02	0.02	0.05	0.06	0.10	0.14	0.16	0.19	0.30	0.46	0.46
83	8.72	9.51	6.78	9.80	11.33	8.41	8.32	8.03	8.11	7.70	8.14	6.74
84	8.21	8.46	8.02	6.86	7.79	7.72	8.88	8.25	8.68	8.02	7.83	8.54
85	4.65	4.55	4.19	3.99	4.96	5.05	5.31	5.53	5.08	5.06	5.55	5.27
87	0.08	0.08	0.12	0.13	0.15	0.13	0.15	0.15	0.14	0.17	0.19	0.17
88	0.09	0.14	0.16	0.19	0.18	0.24	0.28	0.23	0.18	0.22	0.27	0.28
89	0.74	0.95	0.73	0.67	0.85	0.77	0.87	1.07	1.07	1.41	1.21	1.04
93	0.94	0.64	0.75	1.03	1.56	1.39	0.50	0.54	0.75	0.34	0.17	0.16
96	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.20

Continue….

SITC Product Codes	Years														
	RCA 2006	RCA 2007	RCA 2008	RCA 2009	RCA 2010	RCA 2011	RCA 2012	RCA 2013	RCA 2014	RCA 2015	RCA 2016	RCA 2017	RCA 2018	RCA 2019	RCA 2020
00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.09	0.06	0.08	0.03	0.04	0.03	0.04	0.03	0.04	0.04	0.01	0.01	0.01	0.01	0.00
03	5.03	4.82	3.58	3.15	3.48	3.23	3.64	3.52	4.64	4.39	4.06	4.12	3.07	3.02	2.77
04	0.72	0.69	0.53	0.37	0.34	0.60	0.93	0.79	0.92	0.86	0.74	1.04	0.56	0.54	1.07
05	1.28	1.06	0.99	0.78	0.83	0.80	0.86	0.89	1.01	1.01	1.01	1.19	1.09	1.10	0.98
06	0.69	1.14	0.54	0.09	0.32	0.47	0.54	0.29	0.43	0.28	0.33	0.20	0.49	0.69	0.51
07	3.90	3.19	3.06	1.93	2.34	2.89	2.68	2.30	2.25	2.52	2.40	2.29	1.91	1.83	2.08
08	0.12	0.23	0.65	0.18	0.39	0.53	1.30	1.55	0.83	0.30	0.42	1.22	0.92	0.49	0.80
09	0.09	0.11	0.07	0.08	0.07	0.08	0.09	0.07	0.08	0.09	0.08	0.09	0.10	0.11	0.16
11	0.02	0.02	0.04	0.03	0.03	0.02	0.03	0.03	0.02	0.03	0.04	0.05	0.03	0.04	0.05
12	1.50	1.58	1.84	2.53	2.14	1.41	1.81	2.12	1.72	2.11	1.88	1.74	1.51	1.43	2.38
21	0.18	0.27	0.39	0.14	0.02	0.02	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.00
22	3.58	3.21	3.04	1.93	2.07	1.86	1.67	2.10	2.90	2.46	1.89	2.16	2.07	2.43	2.45
23	0.92	0.69	0.75	0.38	0.45	0.50	0.37	0.32	0.29	0.41	0.37	0.38	0.25	0.26	0.38
24	0.04	0.04	0.08	0.06	0.05	0.05	0.06	0.06	0.07	0.08	0.03	0.02	0.02	0.01	0.02
25	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	1.18	2.37	2.61	2.57	3.14	3.55	3.34	3.48	3.55	3.80	4.22	4.38	3.98	3.20	5.52
27	5.10	5.95	3.12	3.22	2.57	2.51	2.61	2.64	3.00	3.32	3.27	3.22	2.95	2.75	2.99
28	0.67	0.38	0.15	0.38	0.67	1.04	0.75	0.13	0.16	0.26	0.21	0.27	0.32	0.30	0.18
29	1.63	1.41	1.28	0.97	1.25	1.54	2.21	1.50	1.46	1.50	1.34	0.92	0.98	0.92	0.67
32	0.00	0.00	0.33	0.00	0.32	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33	1.99	2.43	2.33	3.84	3.80	3.21	2.58	2.68	1.84	1.44	1.52	1.30	2.44	2.98	1.93
34	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41	0.13	0.12	0.03	0.05	0.07	0.03	0.03	0.03	0.01	0.15	0.06	0.18	0.09	0.01	0.01
42	1.45	1.96	1.85	1.50	2.05	1.96	1.45	1.31	1.49	1.64	1.35	1.75	1.55	2.01	1.62
43	2.02	2.02	2.13	1.39	1.55	1.96	1.55	2.16	2.06	2.46	1.80	1.74	1.84	1.94	1.20
51	1.80	1.72	1.92	1.65	1.63	1.80	1.99	2.06	2.32	2.50	2.45	2.44	2.44	2.69	2.68
52	0.61	0.44	0.39	0.41	0.57	0.62	0.93	0.65	0.63	0.64	0.73	0.75	0.77	0.64	0.67
53	1.69	1.80	1.80	1.27	1.69	1.53	1.64	1.83	2.14	2.01	1.87	1.82	1.84	1.96	1.83
54	0.40	0.46	0.61	0.39	0.46	0.52	0.60	0.64	0.61	0.67	0.66	0.61	0.63	0.63	0.71
55	0.32	0.34	0.29	0.26	0.31	0.36	0.38	0.34	0.31	0.35	0.34	0.35	0.32	0.32	0.44
56	0.01	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.07	0.05	0.05	0.05	0.04
57	0.35	0.39	0.29	0.18	0.41	0.41	0.31	0.51	0.33	0.42	0.47	0.49	0.57	0.54	0.53
58	0.46	0.47	0.42	0.32	0.40	0.40	0.56	0.54	0.56	0.61	0.52	0.57	0.65	0.65	0.73
59	0.61	0.75	0.82	0.65	0.57	0.51	0.68	0.73	0.77	0.74	0.61	0.62	0.67	0.81	0.71

61	5.17	5.06	4.66	3.43	3.59	3.85	3.82	4.37	4.79	4.44	3.91	3.17	3.05	2.97	5.87
62	0.98	0.94	1.02	0.63	0.86	0.91	1.11	1.17	1.31	1.32	1.43	1.56	1.60	1.61	2.36
63	0.15	0.16	0.16	0.18	0.17	0.17	0.24	0.29	0.31	0.35	0.38	0.27	0.25	0.30	0.42
64	0.12	0.12	0.11	0.11	0.11	0.12	0.13	0.14	0.16	0.17	0.17	0.17	0.20	0.29	0.29
65	6.07	5.42	4.68	4.07	4.64	4.59	4.55	4.69	4.87	5.10	5.02	4.94	4.56	4.47	5.07
66	3.97	4.14	4.00	3.27	3.41	4.42	4.06	3.78	4.55	4.46	4.42	4.26	4.06	4.17	4.48
67	1.69	1.89	1.86	0.98	1.49	1.24	1.28	1.67	1.63	1.58	1.96	2.71	1.99	2.07	2.85
68	0.91	0.60	0.29	0.77	0.18	0.19	0.12	0.17	0.25	0.18	0.33	0.42	0.76	0.43	0.49
69	1.24	1.20	1.17	0.92	1.15	1.28	1.45	1.36	1.46	1.55	1.40	1.34	1.31	1.34	1.53
71	0.34	0.42	0.62	0.39	0.39	0.42	0.42	0.44	0.56	0.65	0.66	1.08	1.36	1.21	1.20
72	0.20	0.20	0.21	0.22	0.20	0.23	0.25	0.29	0.29	0.35	0.34	0.36	0.43	0.45	0.43
73	0.42	0.48	0.48	0.37	0.33	0.35	0.36	0.35	0.35	0.43	0.42	0.37	0.42	0.41	0.46
74	0.43	0.48	0.47	0.36	0.41	0.45	0.45	0.46	0.48	0.56	0.54	0.58	0.59	0.59	0.70
75	0.15	0.17	0.18	0.18	0.13	0.12	0.14	0.09	0.11	0.14	0.13	0.23	0.20	0.19	0.15
76	0.10	0.13	0.13	0.66	0.36	0.86	0.87	0.55	0.29	0.19	0.21	0.10	0.15	0.38	1.12
77	0.51	0.52	0.65	0.58	0.88	0.51	0.47	0.50	0.53	0.57	0.52	0.50	0.54	0.53	0.52
78	0.26	0.29	0.41	0.69	0.55	0.37	0.43	0.44	0.39	0.40	0.50	0.42	0.34	0.30	0.29
79	0.21	0.32	1.17	1.16	0.56	0.67	0.79	0.64	0.81	0.60	0.67	0.66	0.59	0.56	0.97
81	0.08	0.10	0.10	0.26	0.25	0.32	0.44	0.29	0.31	0.40	0.45	0.38	0.33	0.34	0.41
82	0.60	0.73	0.59	0.52	0.65	0.57	0.60	0.60	0.63	0.68	0.69	0.68	0.73	0.80	1.38
83	6.26	5.79	5.33	4.56	4.33	3.88	3.92	3.99	4.45	4.53	4.08	3.77	3.34	3.00	7.12
84	8.53	7.73	6.93	7.83	6.53	6.60	6.45	6.45	6.83	7.13	6.54	5.90	5.15	4.87	5.11
85	5.54	5.67	5.04	4.52	4.63	4.31	4.15	4.20	4.64	4.40	3.96	3.66	3.35	3.06	3.99
87	0.17	0.20	0.19	0.22	0.19	0.19	0.21	0.25	0.31	0.33	0.41	0.48	0.39	0.34	0.30
88	0.21	0.24	0.26	0.33	0.40	0.47	0.59	0.50	0.58	0.65	0.66	0.90	1.01	0.97	0.92
89	1.07	1.00	0.82	1.04	0.81	0.78	0.83	0.80	0.80	0.87	0.85	0.75	0.83	0.74	0.80
93	0.22	0.12	0.22	0.17	0.15	0.08	0.07	0.11	0.05	0.22	0.09	0.06	0.01	0.00	0.00
96	0.00	0.00	0.02	4.04	0.11	0.00	0.02	0.00	0.00	0.00	0.01	0.04	0.03	0.02	0.03
97	0.01	0.00	0.01	0.05	0.03	0.47	0.08	0.01	0.01	0.01	0.00	0.01	0.02	0.02	0.06

Sources: Calculated by Author