

## **India's International Trade of Four Specific commodities in the Recent Past Some Insights Preface**

The study uses trade indicators to analyse merchandise export and import data in a way that should be useful for the purpose of policy. The indicators provide a glimpse of the trade patterns of the world and the performance of India in comparison to various other countries. They have been used in the case of India's exports of **Shawls, Scarves, Mufflers etc. & Wire of Iron or non Alloy Steel** and imports of **Wool, not carded or combed and Printed Circuits** to indicate the possible directions policy may take.

The data used in this study has been sourced from the Export Import Data Bank of the DGCI&S, Department of Commerce, and Government of India and from the United Nations Comtrade Database. Introduction notes of each commodities has been sourced from the various sights –viz Wikipedia, Britannica, The Economic Times etc.

Computations are based on data at ITC-HS four-digit level ( ITC-HS Code-6214 & 7217 for export and 5101 & 8534 for import ) and the latest finalized data available on the UN Comtrade Database up to year 2022 and on the DGCI&S Database up to July 2023. So, trends from 2019 to 2022 have been shown when we extract the data from UN Comtrade and from 2019 to 2022 have been shown when we extract the data from DGCIS Data base.

In this report, we will see various analysis and aspects of India's Precious as well as International export trade of Shawls, Scarves, Mufflers etc. & Wire of Iron or non Alloy Steel and imports of Wool, not carded or combed and Printed Circuits. We will use both the 4 digit Commodity codes, for our analysis, as appropriate.

Trends in India's as well as International Trade i.e. Exports and Imports of above four Commodities are given below in different tables :

- Table 1 : India's top 10 Export destination of Shawls, Scarves, Mufflers etc. with their shares in percentage.
- Table 2 : World's top 10 Exporters of Shawls, Scarves, Mufflers etc. with their shares in percentage.
- Table 3 : World's top 10 Importers of Shawls, Scarves, Mufflers etc. with their shares in percentage.
- Annex- I : Top 3 sources of Shawls, Scarves, Mufflers etc. of World's top 3 Importers.
- Table 4 : India's top 10 Export destination of Wire of Iron or non Alloy Steel with their shares in percentage.
- Table 5 : World's top 10 Exporters of Wire of Iron or non Alloy Steel with their shares in percentage.
- Table 6 : World's top 10 Importers of Wire of Iron or non Alloy Steel with their shares in percentage.
- Annex-II : Top 3 sources of Wire of Iron or non Alloy Steel of World's top 3 Importers.
- Table 7 : India's top10 Sources of Wool, not carded or combed with their shares in percentage.
- Table 8 : World's top 10 Importers Wool, not carded or combed with their shares in percentage.
- Table 9 : India's top 10 Sources of Printed Circuits with their shares in percentage.
- Table 10 : World's top 10 Importers of Printed Circuits with their shares in percentage.

## EXPORT

### Shawls, Scarves, Mufflers, Mantillas, Veils & the like

A **shawl** is an Indian simple item of clothing, loosely worn over the shoulders, upper body and arms, and sometimes also over the head. It is usually a rectangular or square piece of cloth, which is often folded to make a triangle, but can also be triangular in shape. Other shapes include oblong shawls.

The words "shawl" and "pashmina" come from Kashmir, the northern region of the Indian subcontinent. Sources report cashmere crafts were introduced by Sayeed Ali Hamadani who was an Iranian scholar when he came to Kashmir in the 14th century. He found that the Ladakhi Kashmiri goats produced soft wool. He took some of this goat wool and made socks which he gave as a gift to the king of Kashmir, Sultan Qutbuddin. Afterwards, Hamadani suggested to the king that they start a shawl weaving industry in Kashmir using this wool. That is how pashmina shawls began. The United Nations agency UNESCO reported in 2014 that Ali Hamadani was one of the principal historical figures who shaped the culture of Kashmir, both architecturally and through the flourishing of arts and crafts, and hence economy, in Kashmir. The skills and knowledge that he brought to Kashmir gave rise to an entire industry.

Shawls were also part of the traditional male costume in Kashmir. They were woven in extremely fine woollen twill, some such as the Orenburg shawl, were even said to be as fine as the Shatoosh. They could be in one colour only, woven in different colours, ornately woven or embroidered. Kashmiri shawls were high-fashion garments in Western Europe in the early- to mid-19th century. Paisley shawls, imitation Kashmiri shawls woven in Paisley, Renfrewshire, are the origin of the name of the traditional paisley pattern. Shawls were also manufactured in the city of Norwich, Norfolk from the late 18th century (and some two decades before Paisley) until about the 1870s.

Silk shawls with fringes, made in China, were available by the first decade of the 19th century. Ones with embroidery and fringes were available in Europe and the Americas by 1820. These were called China crêpe shawls or China shawls, and in Spain *mantones de Manila* because they were shipped to Spain from China via the port of Manila. The importance of these shawls in fashionable women's wardrobes declined between 1865 and 1870 in Western culture. However, they became part of folk dress in a number of places including Germany, the Near East, various parts of Latin America, and Spain where they became a part of Romani dress especially in Andalusia and Madrid. These embroidered items were revived in the 1920s under the name of Spanish shawls. Their use as part of the costume of the lead in the opera *Carmen* contributed to the association of the shawls with Spain rather than China. Some cultures incorporate shawls of various types into their national folk dress, mainly because the relatively unstructured shawls were much more commonly used in earlier times.

Shawls are used in order to keep warm, to complement a costume, and for symbolic reasons. One famous type of shawl is the tallit, worn by Jewish men during prayers and ceremonies. In Christianity, women have used shawls as a headcovering. In addition to these aforementioned religious uses of shawls, they are worn for added warmth (and fashion) at outdoor or indoor evening affairs, where the temperature is warm enough for men in suits, but not for women in dresses and where a jacket might be inappropriate.

A scarf, otherwise called a muffler, or neck-wrap is a bit of fabric worn around the neck, or close to the head or around the waist for warmth, cleanliness, style or for religious reasons. They can arrive in an assortment of diverse hues. Old Rome is one of the first sources of the mufflers, where it was utilized to keep clean instead of warm.

In India, pure wool mufflers with Bandhani work are turning out to be exceptionally well known. Bandhani or Bandhej is the name of the tie and color strategy utilized ordinarily as a part of Bhuj and Mandvi of the Kutch District of Gujarat State.

These are broadly classified under **H.S. Code-6214**.

**India’s Top 10 destination of Shawls, Scarves, Mufflers etc (H.S Code-6214)**

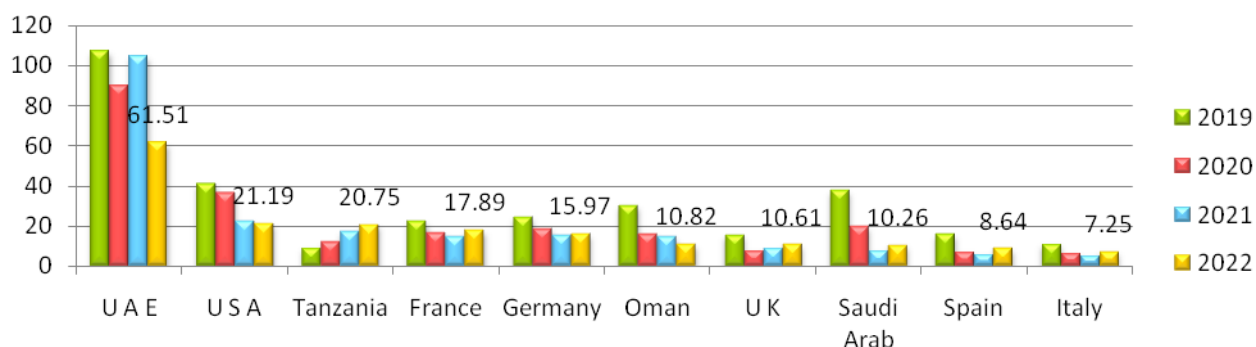
Rank	Countries	2019		2020		2021		2022	
		Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	U A E	107.33	23.24	89.51	28.42	104.72	33.82	61.51	22.93
2.	U S A	41.34	8.95	36.45	11.57	22.65	7.31	21.19	7.90
3.	Tanzania	9.23	2.00	11.96	3.80	17.26	5.58	20.75	7.73
4.	France	22.53	4.88	16.32	5.18	14.55	4.70	17.89	6.67
5.	Germany	24.45	5.29	18.74	5.95	15.37	4.96	15.97	5.95
6.	Oman	30.33	6.57	16.04	5.09	14.48	4.68	10.82	4.03
7.	U K	15.43	3.34	7.83	2.49	8.63	2.79	10.61	3.96
8.	Saudi Arab	37.55	8.13	19.59	6.22	7.52	2.43	10.26	3.82
9.	Spain	15.73	3.41	7.29	2.32	5.91	1.91	8.64	3.22
10.	Italy	11.08	2.40	6.41	2.04	5.14	1.66	7.25	2.70
	Others	146.80	31.79	84.79	26.92	93.39	30.16	83.37	31.08
	<b>Total</b>	461.81	100	314.94	100	309.60	100	268.25	100

Source: **DGCI&S**

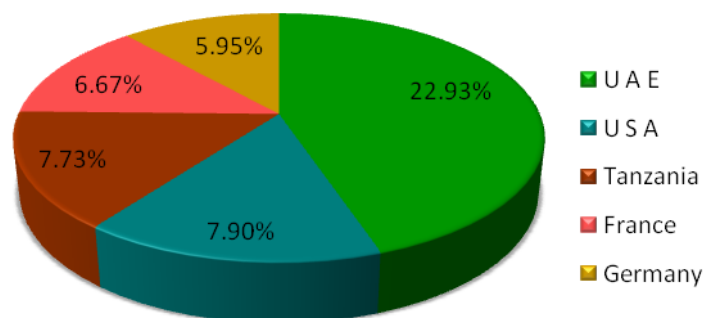
Note : India’s Export including re-export

India’s major destination Shawls, Scarves, Mufflers etc. from 2019-2022(Values in million USD)

Data label given on the basis of 2022



India’s top 5 destinations of Shawls, Scarves, Mufflers etc. by percentage in 2022:



India Exports Shawls, Scarves, Mufflers etc. was reported at US \$ 268.25 Million in 2022. This records a decrease by 13.36% from the previous year. Among the top importing countries, India exported the highest dollar worth of Shawls, Scarves, Mufflers etc. to UAE with shipments in 2022 valued at US \$ 61.51 Million, making up 22.93% share of India’s total . In second place was USA, who imported around US \$ 21.19 Million worth of Shawls, Scarves, Mufflers etc. or 7.90% share from India, which was followed by Tanzania, where India exported US \$ 20.75 million or 7.73% share of India’s total import of Shawls, Scarves, Mufflers etc. in 2022.

Table - 2

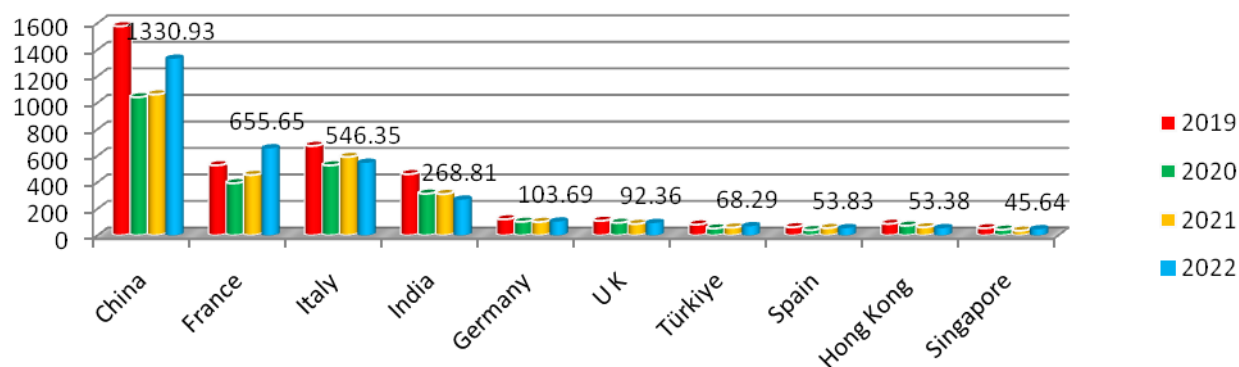
**World's Top 10 exporter of Shawls, Scarves, Mufflers etc(H.S Code-6214)**

Rank	Countries	2019		2020		2021		2022	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	China	1576.79	37.64	1041.56	33.92	1062.52	32.87	1330.93	37.56
2.	France	528.45	12.61	393.32	12.81	454.98	14.08	655.65	18.50
3.	Italy	674.82	16.11	527.56	17.18	591.26	18.29	546.35	15.42
4.	<b>India</b>	<b>461.54</b>	<b>11.02</b>	<b>313.82</b>	<b>10.22</b>	<b>311.42</b>	<b>9.63</b>	<b>268.81</b>	<b>7.59</b>
5.	Germany	121.24	2.89	102.18	3.33	101.04	3.13	103.69	2.93
6.	U K	109.39	2.61	94.41	3.07	85.92	2.66	92.36	2.61
7.	Türkiye	81.34	1.94	51.84	1.69	58.54	1.81	68.29	1.93
8.	Spain	61.46	1.47	39.51	1.29	55.18	1.71	53.83	1.52
9.	Hong Kong	86.68	2.07	72.62	2.37	60.49	1.87	53.38	1.51
10.	Singapore	53.73	1.28	42.44	1.38	35.06	1.08	45.64	1.29
	Others	433.91	10.36	391.20	12.74	416.02	12.87	324.28	9.15
	<b>Total</b>	4189.35	100	3070.45	100	3232.43	100	3543.20	100

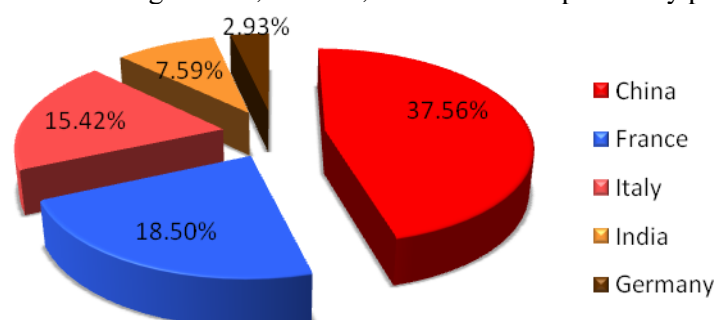
Source: UN Comtrade

Top world exporters of Shawls, Scarves, Mufflers etc. from 2019 to 2022 (Values in million USD)

Data label given on the basis of 2022



Export trends in world's leading Shawls, Scarves, Mufflers etc. exporters by percentage in 2022:



Shawls, Scarves, Mufflers etc. exports totaled US \$ 3.54 Billion in 2022. In that year the total export value increased at an rate of 9.63% from 2021. China ( US \$1.33 B), France ( US \$ 655.65 M), Italy (US \$ 546.35 M), and **India** (US \$ 268.81 M) were the key exporters of shawls, scarves, mufflers. China represented the major exporter of Shawls, Scarves, Mufflers etc. in the world, exported ,37.56% share of world export. Followed by France and Italy, exported 18.50% and 15.42% of Shawls, Scarves, Mufflers etc. respectively in 2022. In the same year **India** occupied a 7.59% share of world export, which put it in 4<sup>th</sup> place in the world.

Table - 3

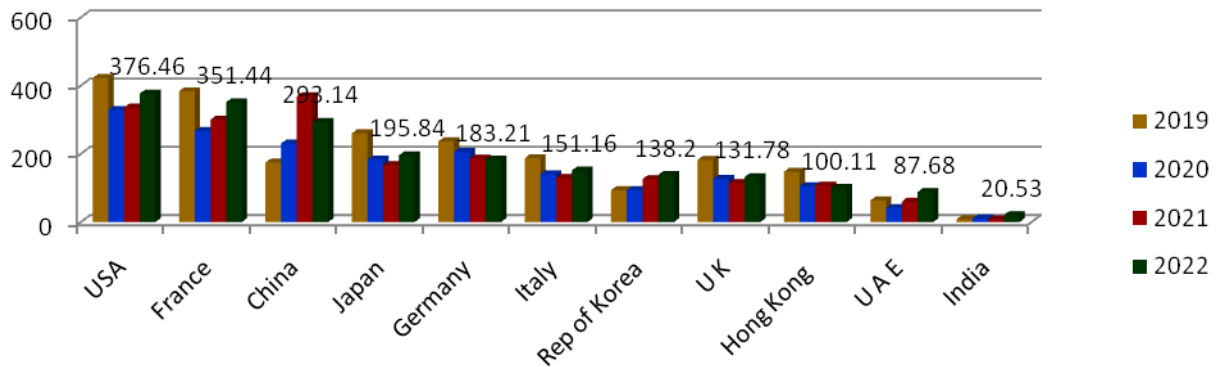
**World's top 10 Importers of Shawls, Scarves, Mufflers etc..(H.S Code-6214)**

Rank	Countries	2019		2020		2021		2022	
		Value ( million \$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)
1.	USA	422.26	12.63	328.62	12.78	335.88	11.63	376.46	13.46
2.	France	383.43	11.47	266.92	10.38	300.24	10.40	351.44	12.57
3.	China	174.37	5.22	230.52	8.97	369.13	12.79	293.14	10.48
4.	Japan	260.28	7.79	183.16	7.12	166.95	5.78	195.84	7.00
5.	Germany	236.58	7.08	205.77	8.00	185.93	6.44	183.21	6.55
6.	Italy	187.38	5.61	140.26	5.46	129.70	4.49	151.16	5.41
7.	Rep of Korea	93.52	2.80	93.58	3.64	126.19	4.37	138.20	4.94
8.	U K	182.02	5.45	126.64	4.93	114.57	3.97	131.78	4.71
9.	Hong Kong	147.56	4.42	105.13	4.09	107.36	3.72	100.11	3.58
10.	U A E	63.39	1.90	40.85	1.59	59.87	2.07	87.68	3.14
<b>21.</b>	<b>India</b>	<b>8.65</b>	<b>0.26</b>	<b>10.48</b>	<b>0.41</b>	<b>7.80</b>	<b>0.27</b>	<b>20.53</b>	<b>0.73</b>
	Others	1182.68	35.39	838.79	32.63	983.53	34.07	766.66	27.42
	<b>Total</b>	<b>3342.11</b>	<b>100</b>	<b>2570.73</b>	<b>100</b>	<b>2887.14</b>	<b>100</b>	<b>2796.21</b>	<b>100</b>

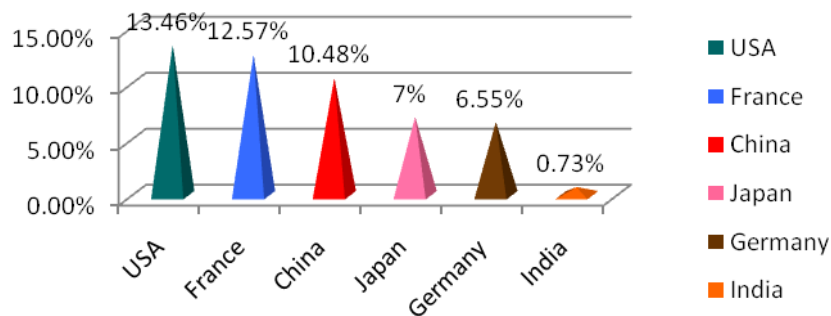
Source :UNComtrade

Top world importers of Shawls, Scarves, Mufflers etc. from 2019 to 2022 (Values in million USD)

Data label given on the basis of 2022



Country wise leading global Importer of Shawls, Scarves, Mufflers etc. by percentage in 2022

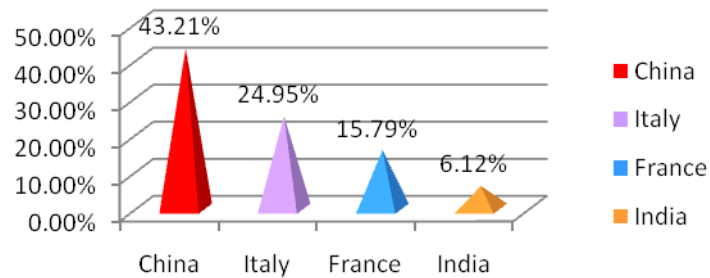


In value terms, shawls, scarves, mufflers etc. imports stood at US \$ 2.80 Billion in 2022. Overall, it indicated a prominent negative growth from 2021. the total imports value decreased at 3.15% over the previous year. The USA imported around US \$ 376.46 million worth of Shawls, Scarves, Mufflers etc.in 2022, making it the leading importer of Shawls, Scarves, Mufflers etc. world wide that year. France (US \$ 351.44 M) followed in second place, importing 12.57% share of world import. It was followed by China (US \$ 293.14 M), imported 10.48% share. **India's** contribution was only 0.73% share of world import in that year.

## Annexure-II

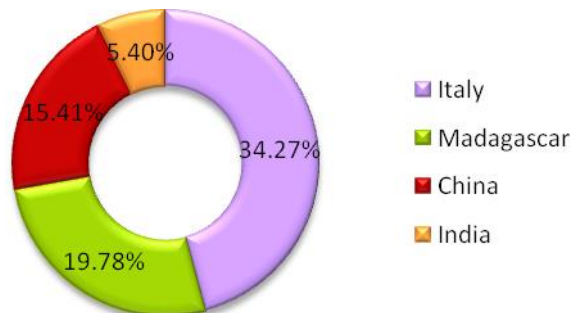
**Sources of world's top three importers of Shawls, Scarves, Mufflers etc. ( H.S Code-6214)**

i) Top 3 Sources of Shawls, Scarves, Mufflers etc..to USA in 2022 by percentage:



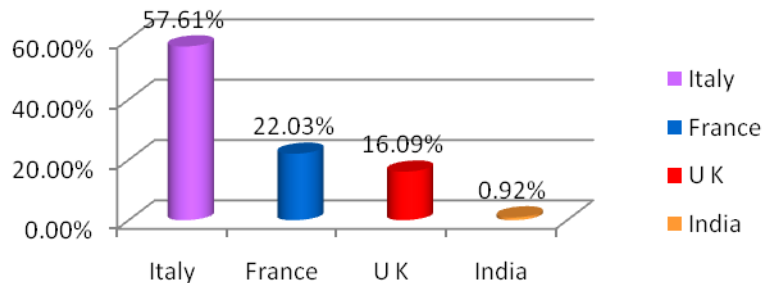
USA, being the largest importer of Shawls, Scarves, Mufflers etc., imports from China 43.21% share of total Shawls, Scarves, Mufflers etc.. imports of USA, followed by Italy (24.95%) and France (15.79%) in 2022. In the same year **India** has exported 6.12% of Shawls, Scarves, Mufflers etc..to USA in 2022. (Source: UN Comtrade)

ii) Top 3 Sources of Shawls, Scarves, Mufflers etc. To France in 2022 by percentage:



Italy is the number one source of Shawls, Scarves, Mufflers etc..to France, France imports 34.27% share of Shawls, Scarves, Mufflers etc..from Italy, 19.78% from Madagascar and 15.41% share from China in 2022. In the same year 5.40% share of Shawls, Scarves, Mufflers etc..imported by France from **India**. (Source: UN Comtrade)

iii) Top 3 Sources of Shawls, Scarves, Mufflers etc..to China in 2022 by percentage:



Italy was the primary source country of Shawls, Scarves, Mufflers etc. to China. In 2022 China has imported 57.61% share of Shawls, Scarves, Mufflers etc. from Italy, 22.03% from France and 16.09% share of Shawls, Scarves, Mufflers etc..came from U. K.. In that year **India's** share was only 0.92% share of China's total import. (Source : UN Comtrade)

## Wire of Iron or Non Alloy Steel

A **wire** is a flexible strand of Iron or non alloy steel. Wire is commonly formed by drawing the metal through a hole in a die or draw plate. Wire gauges come in various standard sizes, as expressed in terms of a gauge number or cross-sectional area.

Wires are used to bear mechanical loads, often in the form of wire rope. In electricity and telecommunications signals, a "wire" can refer to an electrical cable, which can contain a "solid core" of a single wire or separate strands in stranded or braided forms.

Usually cylindrical in geometry, wire can also be made in square, hexagonal, flattened rectangular, or other cross-sections, either for decorative purposes, or for technical purposes such as high-efficiency voice coils in loudspeakers. Edge-wound coil springs, such as the Slinky toy, are made of special flattened wire.

In antiquity, jewelry often contains large amounts of wire in the form of chains and applied decoration that is accurately made and which must have been produced by some efficient, if not technically advanced, means. In some cases, strips cut from metal sheet were made into wire by pulling them through perforations in stone beads. This causes the strips to fold round on themselves to form thin tubes. This strip drawing technique was in use in Egypt by the 2nd Dynasty (c. 2890 – c. 2686 BCE). From the middle of the 2nd millennium BCE most of the gold wires in jewellery are characterised by seam lines that follow a spiral path along the wire. Such twisted strips can be converted into solid round wires by rolling them between flat surfaces or the strip wire drawing method. The strip twist wire manufacturing method was superseded by drawing in the ancient Old World sometime between about the 8th and 10th centuries AD. There is some evidence for the use of drawing further East prior to this period.

Wire is often reduced to the desired diameter and properties by repeated drawing through progressively smaller dies, or traditionally holes in draw plates. After a number of passes the wire may be annealed to facilitate more drawing or, if it is a finished product, to maximise ductility and conductivity.

Electrical wires are usually covered with insulating materials, such as plastic, rubber-like polymers, or varnish. Insulating and jacketing of wires and cables is nowadays done by passing them through an extruder. Formerly, materials used for insulation included treated cloth or paper and various oil-based products. Since the mid-1960s, plastic and polymers exhibiting properties similar to rubber have predominated.

Solid wire, also called solid-core or single-strand wire, consists of one piece of metal wire. Solid wire is useful for wiring breadboards. Solid wire is cheaper to manufacture than stranded wire and is used where there is little need for flexibility in the wire. Solid wire also provides mechanical ruggedness; and, because it has relatively less surface area which is exposed to attack by corrosives, protection against the environment. Stranded wire is composed of a number of small wires bundled or wrapped together to form a larger conductor. Stranded wire is more flexible than solid wire of the same total cross-sectional area. Stranded wire is used when higher resistance to metal fatigue is required.

Wire has many uses. It forms the raw material of many important manufacturers, such as the wire netting industry, engineered springs, wire-cloth making and wire rope spinning, in which it occupies a place analogous to a textile fiber. Wire-cloth of all degrees of strength and fineness of mesh is used for sifting and screening machinery, for draining paper pulp, for window screens, and for many other purposes. Vast quantities of aluminium, copper, nickel and steel wire are employed for telephone and data cables, and as conductors in electric power transmission, and heating. It is in no less demand for fencing, and much is consumed in the construction of suspension bridges, and cages, etc. In the manufacture of stringed musical instruments and scientific instruments, wire is again largely used. Carbon and stainless spring steel wire have significant applications in engineered springs for critical automotive or industrial manufactured parts/components. Pin and hairpin making; the needle and fish-hook industries; nail, peg, and rivet making; and carding machinery consume large amounts of wire as feedstock

These are broadly classified under **H.S. Code-7217**

Table - 4

**India's Top 10 destination of Wire of Iron or Non Alloy Steel (HS Code -7217)**

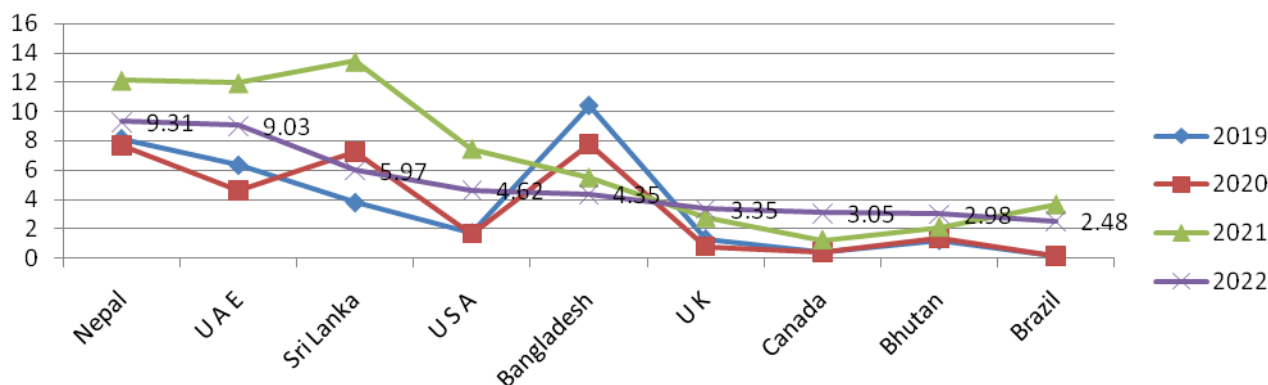
Rank	Countries	2019		2020		2021		2022	
		Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Nepal	8.11	20.10	7.65	19.75	12.13	12.99	9.31	14.06
2.	U A E	6.31	15.64	4.58	11.83	11.94	12.79	9.03	13.64
3.	Sri Lanka	3.77	9.34	7.24	18.70	13.43	14.39	5.97	9.01
4.	U S A	1.72	4.26	1.63	4.22	7.44	7.97	4.62	6.99
5.	Bangladesh	10.37	25.72	7.76	20.03	5.49	5.88	4.35	6.57
6.	U K	1.31	3.25	0.75	1.93	2.75	2.94	3.35	5.07
7.	Canada	0.42	1.05	0.38	0.99	1.22	1.30	3.05	4.61
8.	Bhutan	1.21	3.00	1.35	3.49	2.10	2.25	2.98	4.50
9.	Brazil	0.13	0.33	0.09	0.24	3.64	3.90	2.48	3.75
10.	Germany	0.16	0.40	0.02	0.04	0.42	0.45	2.02	3.06
	Others	6.81	16.90	7.28	18.78	32.78	35.12	19.03	28.75
	<b>Total</b>	40.33	100	38.74	100	93.32	100	66.20	100

Source: **DGCI&S**

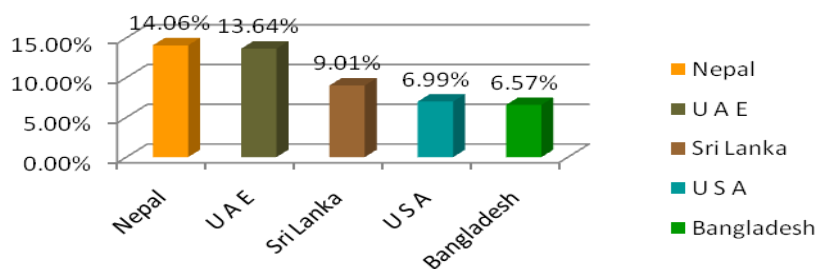
Note : India's Export including re-export

Major destinations of Indian Wire of Iron or Non Alloy Steel from 2019 to 2022 (in million USD)

Data label given on the basis of 2022



India's top 5 major destinations of Wire of Iron or Non Alloy Steel by percentage in 2022:



In the year 2022, India has exported Wire of Iron or Non Alloy Steel worth of US \$ 66.20 million, which was down by 29.07% from 2021. Nepal was the largest market for Wire of Iron or Non Alloy Steel export from India. In 2022, Nepal imported US \$ 9.31 million worth of Wire of Iron or Non Alloy Steel from India, or 14.06% of India's total export of Wire of Iron or Non Alloy Steel, which was followed by UAE and Sri Lanka with 13.64% and 9.01% share of India's total export in 2022 respectively. The top 10 countries in total shared the share of 71.25% of the Wire of Iron or Non Alloy Steel export value from India.



Table - 5

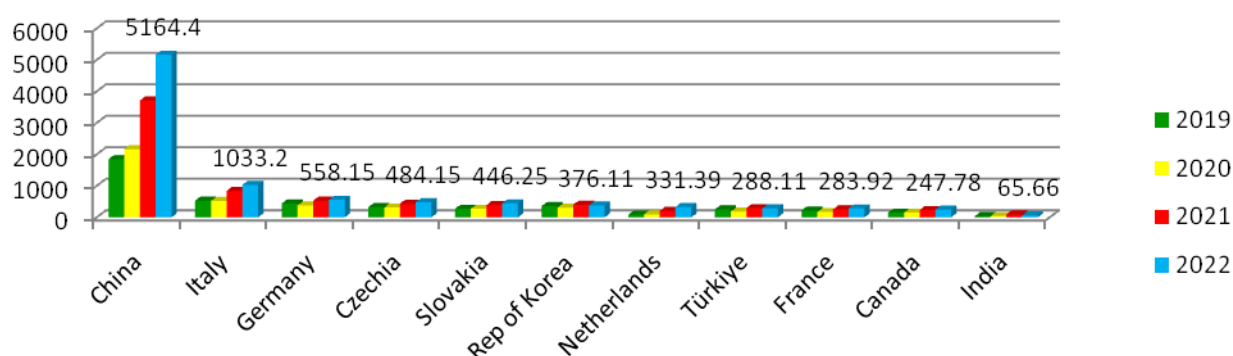
**World's Top 10 exporters of Wire of Iron or Non Alloy Steel (HS Code -7217)**

Rank	Countries	2019		2020		2021		2022	
		Value ( million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	China	1848.53	25.55	2164.41	31.54	3716.25	35.14	5164.40	44.89
2.	Italy	532.94	7.37	522.35	7.61	839.94	7.94	1033.20	8.98
3.	Germany	442.72	6.12	382.20	5.57	530.37	5.01	558.15	4.85
4.	Czechia	325.98	4.51	313.98	4.58	432.73	4.09	484.15	4.21
5.	Slovakia	271.68	3.75	272.43	3.97	390.60	3.69	446.25	3.88
6.	Rep of Korea	359.85	4.97	307.90	4.49	399.49	3.78	376.11	3.27
7.	Netherlands	83.80	1.16	95.97	1.40	205.65	1.94	331.39	2.88
8.	Türkiye	254.99	3.52	185.65	2.71	292.15	2.76	288.11	2.50
9.	France	219.29	3.03	170.26	2.48	254.37	2.41	283.92	2.47
10.	Canada	150.92	2.09	149.75	2.18	232.68	2.20	247.78	2.15
<b>25.</b>	<b>India</b>	<b>40.35</b>	<b>0.56</b>	<b>38.40</b>	<b>0.56</b>	<b>92.76</b>	<b>0.88</b>	<b>65.66</b>	<b>0.57</b>
	Others	2704.43	37.38	2258.68	32.92	3188.67	30.15	2224.24	19.34
	<b>Total</b>	<b>7235.48</b>	<b>100</b>	<b>6861.97</b>	<b>100</b>	<b>10575.66</b>	<b>100</b>	<b>11503.37</b>	<b>100</b>

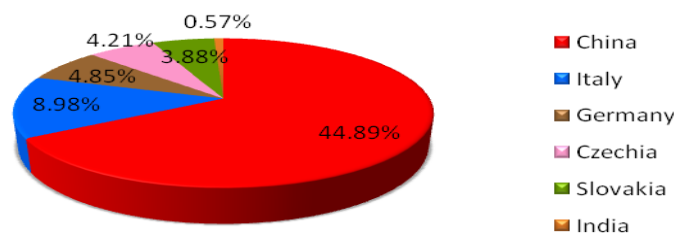
Source :UN Comtrade

Leading Wire of Iron or Non Alloy Steel exporters of world from 2019 to 2022 (Values in million \$)

Data label given on the basis of 2022



Country wise export trends of Wire of Iron or Non Alloy Steel by percentage in 2022:



The total global export value of Wire of Iron or Non Alloy Steel was US \$ 11.50 Billion in 2022 which was briefly rise by 8.80% from the year 2021. China was the largest exporter of Wire of Iron or Non Alloy Steel in the world in 2021, exported US \$ 5.16 Billion or 44.89% share of World export of the commodity in that year. Italy became the 2<sup>nd</sup> largest exporter of it with export worth value of US \$ 1.03 Billion or 8.98% of world export in the same year. Which was followed by Germany with the value US \$ 558.15 Million or 4.85% share. In the year 2022 **India** became the 25<sup>th</sup> largest exporter in the world with US \$ 65.66 Million or 0.57% share of world export of Wire of Iron or Non Alloy Steel

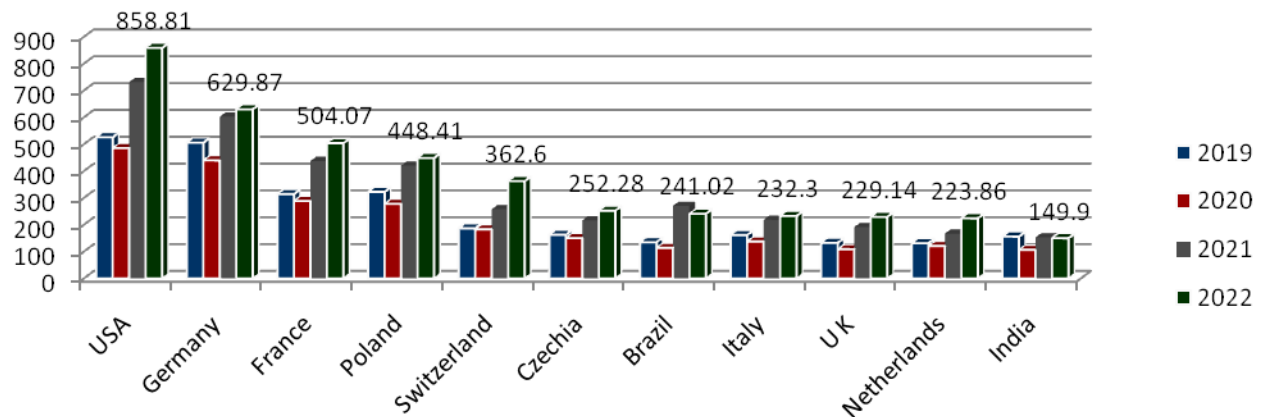
Table - 6

**World's Top 10 Importers of Wire of Iron or Non Alloy Steel (HS Code –7217)**

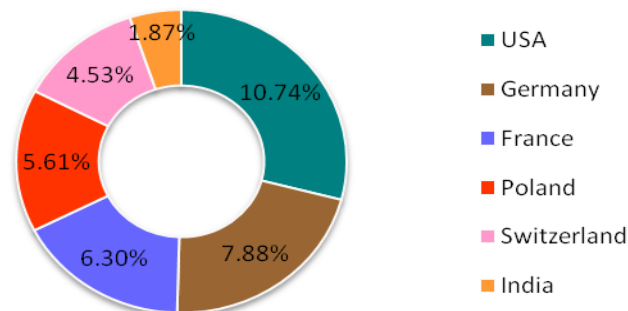
Rank	Countries	2019		2020		2021		2022	
		Value ( million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	USA	525.93	7.86	485.27	8.21	731.52	8.53	858.81	10.74
2.	Germany	505.55	7.56	439.82	7.44	602.44	7.02	629.87	7.88
3.	France	314.27	4.70	288.58	4.88	437.38	5.10	504.07	6.30
4.	Poland	322.30	4.82	278.00	4.70	419.90	4.90	448.41	5.61
5.	Switzerland	186.41	2.79	183.17	3.10	257.70	3.00	362.60	4.53
6.	Czechia	162.60	2.43	150.34	2.54	216.48	2.52	252.28	3.15
7.	Brazil	134.82	2.02	114.03	1.93	270.27	3.15	241.02	3.01
8.	Italy	161.32	2.41	137.44	2.33	218.15	2.54	232.30	2.91
9.	U K	132.38	1.98	108.68	1.84	191.24	2.23	229.14	2.87
10.	Netherlands	131.21	1.96	120.64	2.04	166.67	1.94	223.86	2.80
18.	<b>India</b>	<b>155.86</b>	<b>2.33</b>	<b>106.43</b>	<b>1.80</b>	<b>152.61</b>	<b>1.78</b>	<b>149.90</b>	<b>1.87</b>
	Others	3957.51	59.15	3497.36	59.18	4913.67	57.28	3864.13	48.32
	<b>Total</b>	6690.17	100	5909.77	100	8578.05	100	7996.38	100

Source :UN Comtrade

Wire of Iron or Non Alloy Steel importers of world from 2019 to 2022 (in million USD)  
Data label given on the basis of 2022



Country wise import trends of Wire of Iron or Non Alloy Steel by percentage in 2022

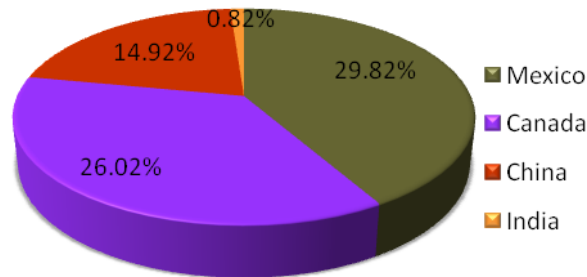


World Import of Wire of Iron or Non Alloy Steel amounted to US \$ 8 Billion in 2022. In 2022 the total imports value decreased at 6.79% over the year 2021. Wire of Iron or Non Alloy Steel imports attained its maximum level of US \$ 8.58 Billion in 2021. USA (US \$ 858.81 M), or 10.74% share Germany (US \$ 629.87 M) and France (US \$ 504.07 M) appeared as the countries with the highest levels of imports in 2022. **India's** import of the commodity was US \$ 149.90 million or 1.87% share of world's import in that year.

## Annexure-II

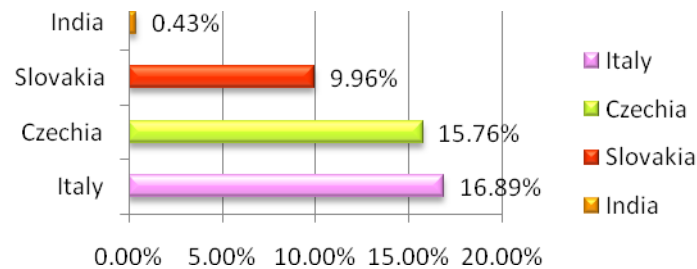
**Top sources of world's top 3 importers of Wire of Iron or Non Alloy Steel (HS Code –7217)**

(i) Top 3 Sources of Wire of Iron or Non Alloy Steel to USA in 2022 by percentage:



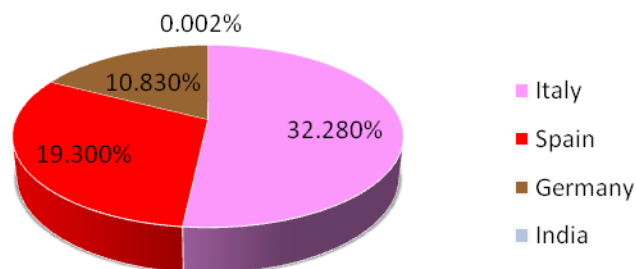
Mexico was the principle source country of Wire of Iron or Non Alloy Steel to USA in 2022. USA imported over 29.82% of the commodity from Mexico, in the same year. Canada (26.02%) & China (14.92%) were 2<sup>nd</sup> and 3<sup>rd</sup> major source countries of Wire of Iron or Non Alloy Steel to USA. In that year **India's** share was only 0.82% share of USA's total import (**Source: UN Comtrade**)

(ii) Top 3 Sources of Wire of Iron or Non Alloy Steel to Germany in 2022 by percentage:



Germany's 3 major source countries of Wire of Iron or Non Alloy Steel in 2022 were Italy (16.89%), Czechia (15.76%) and Slovakia (9.96%). In 2022 **India's** exported only 0.43% share of Germany's total import of Wire of Iron or Non Alloy Steel (**Source: UN Comtrade**)

(iii) Top 3 Sources of Wire of Iron or Non Alloy Steel to France in 2022 by percentage:



32.28% of Wire of Iron or Non Alloy Steel imports of France came from Italy in 2022, which was followed by Spain (19.30 %) and Germany (10.83%). **India** has exported only 0.002% share of France's total import of Wire of Iron or Non Alloy Steel in 2022. (**Source : UN Comtrade**).

## IMPORT

### Wool, not Carded or Combed

**Wool** is the textile fibre obtained from sheep and other mammals, especially goats, rabbits, and camelids. The term may also refer to inorganic materials, such as mineral wool and glass wool, that have properties similar to animal wool.

As an animal fibre, wool consists of protein together with a small percentage of lipids. This makes it chemically quite distinct from cotton and other plant fibres, which are mainly cellulose. Wool is produced by follicles which are small cells located in the skin. These follicles are located in the upper layer of the skin called the epidermis and push down into the second skin layer called the dermis as the wool fibers grow. Follicles can be classed as either primary or secondary follicles. Primary follicles produce three types of fiber: kemp, medullated fibers, and true wool fibers. Secondary follicles only produce true wool fibers. Medullated fibers share nearly identical characteristics to hair and are long but lack crimp and elasticity. Kemp fibers are very coarse and shed out.

Wool's crimp refers to the strong natural wave present in each wool fibre as it is presented on the animal. Wool's crimp, and to a lesser degree scales, make it easier to spin the fleece by helping the individual fibers attach to each other, so they stay together. Because of the crimp, wool fabrics have greater bulk than other textiles, and they hold air, which causes the fabric to retain heat. Wool has a high specific thermal resistance, so it impedes heat transfer in general. This effect has benefited desert peoples, as Bedouins and Tuaregs use wool clothes for insulation.

Felting of wool occurs upon hammering or other mechanical agitation as the microscopic barbs on the surface of wool fibers hook together. Felting generally comes under two main areas, dry felting or wet felting. Wet felting occurs when water and a lubricant (especially an alkali such as soap) are applied to the wool which is then agitated until the fibers mix and bond together. Temperature shock while damp or wet accentuates the felting process. Some natural felting can occur on the animal's back.

Wool straight off a sheep is known as "raw wool", "greasy wool" or "wool in the grease". This wool contains a high level of valuable lanolin, as well as the sheep's dead skin and sweat residue, and generally also contains pesticides and vegetable matter from the animal's environment. Before the wool can be used for commercial purposes, it must be scoured, a process of cleaning the greasy wool. Scouring may be as simple as a bath in warm water or as complicated as an industrial process using detergent and alkali in specialized equipment. Raw wool has many impurities; vegetable matter, sand, dirt and yolk which is a mixture of suint (sweat), grease, urine stains and dung locks. The sheep's body yields many types of wool with differing strengths, thicknesses, length of staple and impurities. The raw wool (greasy) is processed into 'top'. 'Worsted top' requires strong straight and parallel fibres.

The quality of wool is determined by its fiber diameter, crimp, yield, color, and staple strength. Fiber diameter is the single most important wool characteristic determining quality and price.

Wild Sheep were more hairy than woolly. Although sheep were domesticated some 9,000 to 11,000 years ago, archaeological evidence from statuary found at sites in Iran suggests selection for woolly sheep may have begun around 6000 BC, with the earliest woven wool garments having only been dated to two to three thousand years later. Woolly sheep were introduced into Europe from the Near East in the early part of the 4th millennium BC.

Global wool production is about 2 million tonnes per year, of which 60% goes into apparel. Wool comprises ca 3% of the global textile market, but its value is higher owing to dyeing and other modifications of the material. Australia is a leading producer of wool which is mostly from Merino sheep but has been eclipsed by China in terms of total weight. New Zealand is the third-largest producer of wool, and the largest producer of crossbred wool.

These are broadly classified under **H. S. Code- 5101**.

Table - 7

**India's Top 10 Sources of Wool, not Carded or Combed (HS Code : 5101)**

Rank	Countries	2019		2020		2021		2022	
		Value ( million \$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)
1.	Australia	125.96	55.18	65.50	55.18	91.98	46.48	139.00	57.70
2.	New Zealand	23.09	10.11	25.41	10.11	34.62	17.49	37.59	15.61
3.	South Africa	16.93	7.41	3.14	7.41	7.82	3.95	9.87	4.10
4.	Syria	7.02	3.08	11.73	3.08	12.39	6.26	9.25	3.84
5.	China	5.13	2.25	8.47	2.25	9.55	4.83	7.41	3.08
6.	Turkey	3.31	1.45	6.19	1.45	9.55	4.83	6.56	2.72
7.	U K	6.14	2.69	3.93	2.69	4.49	2.27	5.10	2.12
8.	Uruguay	4.73	2.07	1.96	2.07	4.34	2.19	4.68	1.94
9.	Italy	1.92	0.84	2.36	0.84	2.66	1.34	3.04	1.26
10.	Russia	5.01	2.20	1.43	2.20	1.53	0.78	2.44	1.01
	Others	29.05	12.72	15.98	12.72	18.97	9.58	15.95	6.62
	<b>Total</b>	228.30	100	146.09	100	197.90	100	240.89	100

Source: **DGCI&S****Note : India's Import including Re-import**

The value of imports of Wool, not carded or combed to India totalled \$ 240.89 million in 2022. Sales of Wool, not carded or combed to India went up by 21.72% compared to 2021. imports of Wool, not carded or combed went up by \$ 43 million from 2021. Australia (US \$ 139 M) constitutes the largest source of it to India with 57.70% share of India's total import of Wool, not carded or combed in 2022., which was followed by New Zealand(US \$ 37.59 M) and South Africa ( US \$ 9.87 M) with 15.61% and 4.10% share respectively.

13  
Table - 8

**World Top 10 Importer of Wool, not Carded or Combed (HS Code : 5101)**

Rank	Countries	2019		2020		2021		2022	
		Value (million\$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)
1.	China	2389.77	64.41	1623.18	67.30	2400.50	71.67	2219.68	69.18
<b>2.</b>	<b>India</b>	<b>228.06</b>	<b>6.15</b>	<b>146.22</b>	<b>6.06</b>	<b>198.09</b>	<b>5.91</b>	<b>240.57</b>	<b>7.50</b>
3.	Italy	234.95	6.33	116.61	4.84	178.55	5.33	232.36	7.24
4.	Czechia	185.68	5.00	111.70	4.63	125.97	3.76	128.80	4.01
5.	Rep. of Korea	75.14	2.03	41.42	1.72	49.46	1.48	48.69	1.52
6.	Bulgaria	50.94	1.37	36.45	1.51	31.62	0.94	43.20	1.35
7.	U K	71.89	1.94	38.67	1.60	57.70	1.72	42.29	1.32
8.	South Africa	10.88	0.29	37.96	1.57	40.25	1.20	37.76	1.18
9.	Uruguay	60.62	1.63	28.06	1.16	32.46	0.97	30.47	0.95
10.	Germany	30.80	0.83	24.13	1.00	25.40	0.76	30.07	0.94
	Others	371.29	10.01	207.38	8.60	209.56	6.26	154.60	4.82
	<b>Total</b>	<b>3710.01</b>	<b>100</b>	<b>2411.79</b>	<b>100</b>	<b>3349.55</b>	<b>100</b>	<b>3208.50</b>	<b>100</b>

Source :UN Comtrade

The worth value of Global import of Wool, not carded or combed was nearly US \$ 3.21 Billion in 2022 which was fallen down by 4.23 % from the year 2021. China has become the world's largest importer of Wool, not carded or combed among world's largest importers. Imports US \$ 2.22 Billion or 69.18% share of world's import of Wool, not carded or combed in 2022. **India (US \$ 240.57 M)** constitutes the 2<sup>nd</sup> largest importer in the world with 7.50 which was followed by Italy with 7.24% share of total world import trade value of Wool, not carded or combed

## Printed Circuits

A **printed circuit**, also called **printed Circuit Board (PCB)**, is a medium used to connect or "wire" components to one another in a circuit. It takes the form of a laminated sandwich structure of conductive and insulating layers: each of the conductive layers is designed with an artwork pattern of traces, planes and other features (similar to wires on a flat surface) etched from one or more sheet layers of copper laminated onto and/or between sheet layers of a non-conductive substrate. Electrical components may be fixed to conductive pads on the outer layers in the shape designed to accept the component's terminals, generally by means of soldering, to both electrically connect and mechanically fasten them to it.

Printed circuit boards are used in nearly all electronic products. Alternatives to PCBs include wire wrap and point-to-point construction, both once popular but now rarely used. PCBs require additional design effort to lay out the circuit, but manufacturing and assembly can be automated. Electronic design automation software is available to do much of the work of layout. Mass-producing circuits with PCBs is cheaper and faster than with other wiring methods, as components are mounted and wired in one operation. Large numbers of PCBs can be fabricated at the same time, and the layout has to be done only once. PCBs can also be made manually in small quantities, with reduced benefits. PCBs can be single-sided (one copper layer), double-sided (two copper layers on both sides of one substrate layer), or multi-layer (outer and inner layers of copper, alternating with layers of substrate). Multi-layer PCBs allow for much higher component density, because circuit traces on the inner layers would otherwise take up surface space between components. The rise in popularity of multilayer PCBs with more than two, and especially with more than four, copper planes was concurrent with the adoption of surface mount technology. However, multilayer PCBs make repair, analysis, and field modification of circuits much more difficult and usually impractical.

Before the development of printed circuit boards, electrical and electronic circuits were wired point-to-point on a chassis. Typically, the chassis was a sheet metal frame or pan, sometimes with a wooden bottom. Components were attached to the chassis, usually by insulators when the connecting point on the chassis was metal, and then their leads were connected directly or with jumper wires by soldering, or sometimes using crimp connectors, wire connector lugs on screw terminals, or other methods. Circuits were large, bulky, heavy, and relatively fragile (even discounting the breakable glass envelopes of the vacuum tubes that were often included in the circuits), and production was labor-intensive, so the products were expensive.

A basic PCB consists of a flat sheet of insulating material and a layer of copper foil, laminated to the substrate. Chemical etching divides the copper into separate conducting lines called tracks or *circuit traces*, pads for connections, vias to pass connections between layers of copper, and features such as solid conductive areas for electromagnetic shielding or other purposes. The tracks function as wires fixed in place, and are insulated from each other by air and the board substrate material. The surface of a PCB may have a coating that protects the copper from corrosion and reduces the chances of solder shorts between traces or undesired electrical contact with stray bare wires. For its function in helping to prevent solder shorts, the coating is called solder resist or solder mask.

"Through hole" components are mounted by their wire leads passing through the board and soldered to traces on the other side. "Surface mount" components are attached by their leads to copper traces on the same side of the board. A board may use both methods for mounting components. PCBs with only through-hole mounted components are now uncommon. Surface mounting is used for transistors, diodes, IC chips, resistors, and capacitors. Through-hole mounting may be used for some large components such as electrolytic capacitors and connectors.

Each trace consists of a flat, narrow part of the copper foil that remains after etching. Its resistance, determined by its width, thickness, and length, must be sufficiently low for the current the conductor will carry. Power and ground traces may need to be wider than signal traces. In a multi-layer board one entire layer may be mostly solid copper to act as a ground plane for shielding and power return. For microwave circuits, transmission lines can be laid out in a planar form such as stripline or microstrip with carefully controlled dimensions to assure a consistent impedance.

These are broadly classified under **H. S. Code 8534**.

Table - 9

**India's Top 10 Sources of Printed Circuits (HS Code :8534)**

Rank	Countries	2019		2020		2021		2022	
		Value ( million \$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)
1.	China	294.68	45.27	253.80	40.78	387.14	43.72	495.07	45.47
2.	Hong Kong	194.71	29.91	190.80	30.66	255.97	28.91	283.19	26.01
3.	Korea RP	62.01	9.53	55.99	9.00	60.45	6.83	69.24	6.36
4.	Taiwan	14.74	2.26	29.63	4.76	53.89	6.09	65.06	5.97
5.	Ireland	0.02	0.00	0.06	0.01	9.68	1.09	39.96	3.67
6.	Vietnam	16.64	2.56	26.51	4.26	29.41	3.32	36.99	3.40
7.	Thailand	18.30	2.81	17.08	2.75	26.04	2.94	26.64	2.45
8.	Singapore	8.98	1.38	7.11	1.14	9.53	1.08	10.38	0.95
9.	U S A	15.85	2.43	9.04	1.45	9.57	1.08	9.56	0.88
10.	Japan	4.49	0.69	4.26	0.68	7.30	0.82	8.47	0.78
	Others	20.54	3.16	28.03	4.50	36.51	4.12	44.28	4.07
	<b>Total</b>	650.96	100	622.31	100	885.49	100	1088.86	100

Source: **DGCI&S**

Note : India's Import including re-import

There is a total of 81 countries India imports Printed Circuit from in 2022. The dollar value of Printed Circuit import in 2022 stood at US \$ 1.09 Billion and US \$ 885.49 Million in 2021, which shows a growth of 22.97% from the previous year's import value which was US \$ 885.49 Million in 2021. Among the top importing countries, India imported the highest dollar worth of Printed Circuit from China with shipments in 2022 valued at US \$ 495.07 Million, making up 45.47% share of India's total. In second place was Hong Kong, from which India imported around US \$ 283.19 Million worth of Printed Circuit or 26.01% which was followed by Korea RP(US \$ 69.24 M ) or 6.36% share of India's total import of Printed Circuits in 2022.



Table – 10

**World Top 10 Importer of Printed Circuits (HS Code :8534)**

Rank	Countries	2019		2020		2021		2022	
		Value ( million \$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)
1.	China	11258.92	22.85	10877.17	21.87	12277.29	19.92	10740.86	23.41
2.	Hong Kong	9017.84	18.31	8649.37	17.39	10165.86	16.49	8474.17	18.47
3.	Rep of Korea	2255.67	4.58	2361.36	4.75	3098.40	5.03	3558.35	7.76
4.	Mexico	2521.48	5.12	2250.79	4.53	2954.26	4.79	3520.45	7.67
5.	USA	1929.55	3.92	1808.82	3.64	2435.27	3.95	2857.93	6.23
6.	Germany	1975.48	4.01	1775.94	3.57	2302.05	3.73	2400.80	5.23
7.	Japan	1226.54	2.49	1219.92	2.45	1476.57	2.40	1491.38	3.25
8.	Philippines	659.06	1.34	682.61	1.37	1221.08	1.98	1429.57	3.12
9.	<b>India</b>	<b>650.89</b>	<b>1.32</b>	<b>623.04</b>	<b>1.25</b>	<b>885.77</b>	<b>1.44</b>	<b>1092.38</b>	<b>2.38</b>
10.	Singapore	638.56	1.30	834.66	1.68	983.60	1.60	1009.00	2.20
	Others	17130.06	34.77	18649.10	37.50	23841.39	38.68	9299.03	20.27
	<b>Total</b>	49264.03	100	49732.77	100	61641.55	100	45873.91	100

Source :UNComtrade

In 2022 value terms, printed circuit imported worldwide stood at US \$ 45.87 Billion in 2022, going down by 25.58% against the previous year level. In that year, global printed circuit imports attained its maximum value of US \$ 61.64 Billion. In value terms, China ( US \$ 10.74 B), constitutes the largest market for imported printed circuit worldwide, making up 23.41% of global imports in 2022. In the same he second position in the ranking was occupied by Hong Kong (US \$ 8.47 B), with the share of 18.47% of global imports. It was followed by Rep. of Korea( US \$ 3.52 B), with the share of 7.76%. In that year **India** (US \$ 1.09 B) constitutes the 9<sup>th</sup> largest importing country of Printed Circuits in the world with 2.38% share of world import.