

# COVID19 AFFECT ON IMPORT AND EXPORT OF FACIAL MASK AND RESPIRATORY DEVICE: TURKEY CASE (\*)

Yurdagül Meral<sup>1</sup>, Ahmet Haklı<sup>2</sup>

*Received: 5 December 2020*

*Accepted: 17 May 2021*

## Abstract

Covid-19 has become one of the biggest viruses the world has ever seen. It has caused economic problems around the world. The main aim of this study is to investigate the effects of covid-19 on exports and imports of face masks and breathing apparatus in Turkey. In the research, general data for 2016, 2017, 2018 and 2019 were used as a priority, and after general evaluations, a comparison was made between the data of January, February and March of the products in 2018, 2019 and 2020. In conclusion, Covid-19 increased the export of face masks and respirators in Turkey and reduced imports of the said products.

**Keywords:** COVID-19, Breathing Apparatus, Respiratory, Face Mask, Import, Export, Pandemic, Turkey

**JEL Code:** F23

---

(\*) This article has been presented in **The 6th InTraders International Conference On International Trade by InTraders International Trade Academic Journal** 5-9 October 2020

---

<sup>1</sup> Assoc. Prof. Dr., İstanbul Medipol University, ymeral@medipol.edu.tr, ORCID: 0000-0001-9244-1994  
<sup>2</sup> hmethaklimr@gmail.com, ORCID: 0000-0001-5919-0070

## **Introduction**

A virus that was reported to have emerged from Wuhan province of China on December 31, 2019 caused the economic and even ecological system to be affected in the world (Bag & Sade, 2020). It has first affected the Asian continent and then Europe and America throughout the world. Therefore, many people got sick and deaths occurred in the virus epidemic. At the beginning of the general causes of deaths, it was caused by the inability of people to breathe due to the problems in the respiratory tract. The world health organization announced that it is important to declare the epidemic as a pandemic and take measures worldwide on 11 March 2020 (BBC, 2020). Pandemic literally means the onset of a disease in more than one country and region around the world (Medipol, 2020). Many different sectors were affected by this pandemic. This situation has created opportunities for some countries as a crisis and in new areas for some countries, and an increase in demand for some products has been observed worldwide. Among the products that experienced the greatest increase in demand were face masks, hand sanitizers, toilet paper and generic medicines (BBC, 2020). In addition to these products, it has been observed that the virus affects the demand of respirators. The aim of this study is to examine and evaluate the Covid-19 effects on face mask and breathing apparatus on import and export of Turkey.

## **Covid-19 PANDEMIC**

Considering the basic differences between pandemic and endemic, pandemic viruses affect more people than endemic viruses, and endemic viruses usually emerge in a certain place and remain within the region there, while pandemic viruses are when the spread of the virus to many regions of the world by spreading to wider places than the country of origin (Özdoğan, 2020). After the virus affected Turkey, Turkey has began to produce of respirators breathing apparatus, which is very important fort he recovery of patients with local and national resources of the country. The respirators were produced by 4 different companies in total and with the support of the Ministry of Industry. The companies are Arçelik, Aselsan, Baykar and Biosys (Şengül, 2020).

There are many countries affected by Covid 19 and one of the most common problems faced by countries in general is the lack of equipment in the field of health. Therefore, when the necessary equipment for the treatment of the cases could not be provided, it was seen that most of the patients died and the table below summarizes the situation.

Hersey	Avrupa	Kuzey Amerika	Asya	Güney Amerika	Afrika	Okyanusya						
Ülke, Diğer	Toplam Vaka	Yeni Vakalar	Toplam Ölüm	Yeni Ölüm	Kurtarılan Toplam	Aktif Durumlar	Ciddi, Kritik	Topl. Kişiler / 1M pop	Ölüm / 1 milyon pop	Toplam Testler	Testler / 1 milyon pop	
Dünya	3706482	63211	256611	4370	1234441	2215430	49323	476	32.9			
Amerika Birleşik Devletleri	1226613	13778	71372	1451	198936	956306	16168	3706	216	7622575	23029	
İspanya	260661	2260	26613	196	164718	70230	2264	5369	648	1932466	41332	
İtalya	213013	1076	29316	236	85231	98467	1427	3623	485	2246666	37158	
UK	194990	4406	29427	693	N / A	166219	1559	2.872	433	1383842	20385	
Fransa	170551	1089	25531	330	52736	92284	3430	2613	391	1100228	16856	
Almanya	166598	446	6993		135100	24505	1937	1988	83	2647052	30400	
Rusya	166370	10102	1451	95	19866	134064	2,300	1068	10	4460367	30564	
Türkiye	129491	1832	3520	69	73286	52686	1338	1636	42	1204421	14281	
Brezilya	110166	1890	7486	142	45816	56856	8318	518	35	339562	1,597	
İran	99970	1323	6340	63	80476	13156	2685	1190	75	519543	6186	
Çin	82881	+1	4633		77853	395	29	68	3			
Kanada	61969	1187	4036	182	26660	31273	557	1642	107	919368	24359	
Peru	51189	3817	1444	109	14427	36318	709	1553	44	386492	11092	
Belçika	50509	242	8016	92	12441	30062	646	4368	692	466194	39362	
Hindistan	49400	2963	1693	127	14142	33665		36	1	1191946	864	
Hollanda	41087	317	5168	86	N / A	35669	644	2398	302	235909	13768	

Figure 1: Covid 19 Data as of 05.05.2020 (Source: Meters, 2020).

The table above shows that the number of cases in the world is 3,706,482 and 1,226,613 of these cases occurred in the United States of America and thus, it ranked first in the world ranking. Followed by Spain, Italy, United Kingdom, France, Germany, Russia and Turkey. Other countries are listed in the ranking, and in total, the top 16 countries in the number of cases in the world are listed.

## Research And Development Expenditures

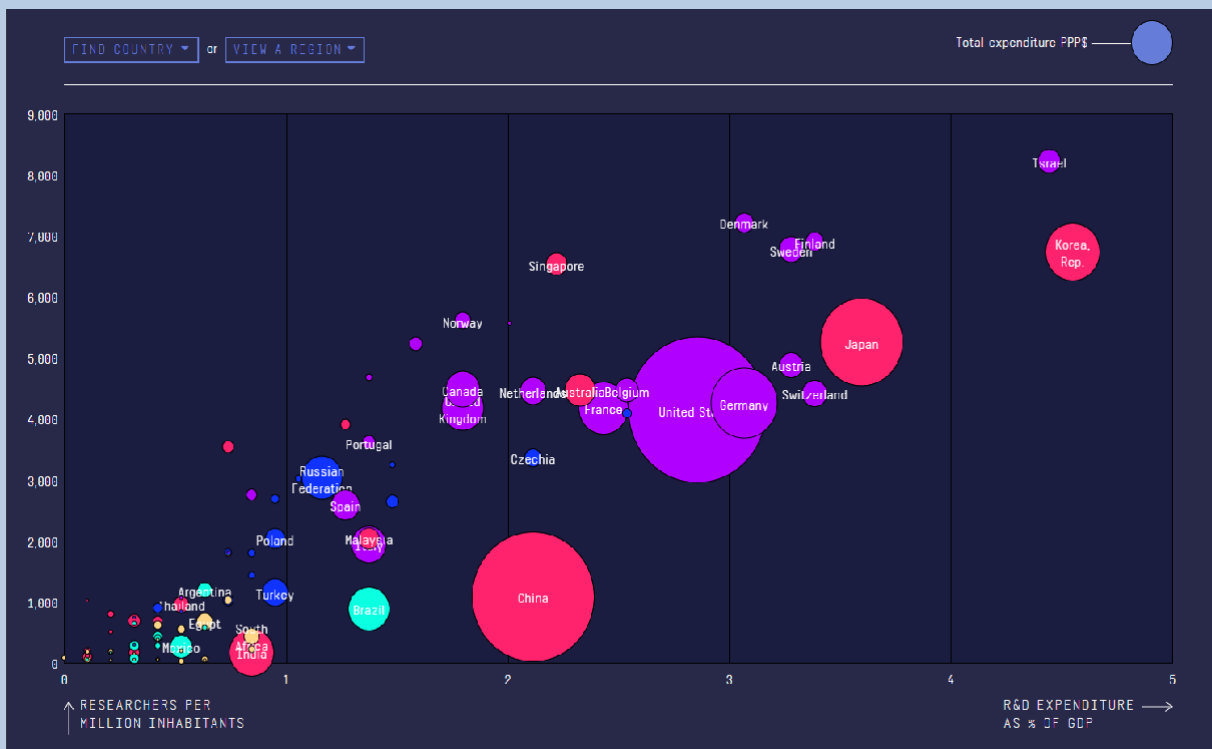


Figure 2: Research and Development Expenditures (Source: UNESCO, 2020)

The countries that spend the most on R&D in the world are shown in the chart. On the left of the graph is the number of researchers per million people. In the lower right part, R&D

expenditures are given as the ratio of GDP. Turkey's annual R & D expenditure as purchasing power parity was \$ 15,933 million. The percentage of GDP of R&D expenditures was 0.9%. The number of researchers per million people was 1160. The ratio of male researchers was 63% and female researchers 37%.



Figure 3: Ratio of R&D Expenditure to GDP Top 15 countries (Resource: Unesco, 2020).

In the graph here, the ratio of R&D expenditures to the country's GDP is listed in descending order. The first 15 countries were included. The first countries are and percentages are South Korea 4.3%, Israel 4.2%, Japan 3.4%, Finland 3.2%, Switzerland 3.2%, Austria 3.1%.

### Purpose of The Research

The aim of the study is to investigate the Covid-19 effect on Turkey's face mask and breathing apparatus. The customs tariff statistics position (GTIP) number of the face mask is "630790" and the customs tariff statistics position (GTIP) number of respirator is "901920".

### Research Method

Firstly, the total export and import data of Turkey's face masks and respirators in the years 2016, 2017, 2018 and 2019 were examined along with the most exporting countries and the most importing countries. Turkey's latest 2018.2019 and 2020, the first 3 months of data, i.e in January, February and March of comparison has been made. Data are taken from trade map statistics (<https://www.trademap.org/Index.aspx>).

## Covid19 AND FACE MASK (630790)

Exporters	Exported value in 2016	Exported value in 2017	Exported value in 2018	Exported value in 2019
World	10.602.189	11.135.712	11.935.204	12.394.026
China	4.461.880	4.636.591	5.132.255	5.445.655
Germany	718.224	768.283	860.499	847.831
United States of America	661.324	676.112	677.677	725.448
Mexico	501.981	533.135	519.211	519.110
Viet Nam	526.194	483.546	546.053	515.739
India	519.264	603.296	474.474	406.232
Netherlands	260.064	318.432	363.549	368.472
France	177.722	183.374	228.782	242.494
Poland	141.200	156.603	226.680	227.843
Morocco	289.040	254.586	228.916	197.598
United Kingdom	154.629	156.395	178.716	181.005
Belgium	112.955	129.531	137.995	171.008
Canada	141.288	144.635	143.466	165.964
Hong Kong, China	159.134	158.597	171.343	163.016
Romania	122.903	142.542	161.622	156.454
Taipei, Chinese	118.361	133.601	134.765	145.514
Japan	106.203	112.198	115.288	121.871
Dominican Republic	47.113	46.261	50.870	113.820
Turkey	73.966	90.186	105.914	110.740
Czech Republic	80.507	99.093	99.226	109.421

*Figure 4: World Total Top Exporting Countries of Face Mask (Thousand USD) (Resource: ITC, 2020).*

Considering the total export status of face masks in the world, it is seen that there has always been an increase in the periods after 2016. The total export figure in 2019 was 12,394,026 billion dollars. When we look at the top 5 among the world's largest exporters, the ranking was in the form of China, Germany, the United States of America, Mexico and Vietnam. When we look at this ranking, China, which is in the first place in 2019, exported more than the total exports of the other top 4 countries. One of the reasons for this has been the use of labor force in the production of face masks. When we look at other Germany and the United States, it is seen that countries with a strong and developed industry have an important place in the face mask market. It has been observed that this product produced is not an insignificant product, even developed countries try to gain a certain share in the sector. It has reduced its costs in Mexico and Vietnam due to cheap labor just like China and has become one of the major exporters in the market. Turkey took place in the top 20 rankings and increased its export volume every year.

Importers	Imported value in 2016	Imported value in 2017	Imported value in 2018	Imported value in 2019
World	11.181.373	11.753.294	12.844.105	13.902.940
United States of America	3.879.461	4.018.710	4.311.063	4.668.128
Japan	1.142.144	1.190.942	1.262.952	1.312.969
Germany	875.863	949.062	1.059.378	1.080.230
France	448.213	462.453	530.870	567.942
United Kingdom	351.023	351.586	384.311	420.042
Netherlands	272.304	329.628	377.629	416.729
Mexico	326.439	360.897	375.335	386.824
Canada	246.959	256.704	263.009	285.228
Australia	239.476	256.294	278.734	282.997
Italy	211.871	223.348	247.221	257.711
Korea, Republic of	156.096	182.884	234.247	251.418
Poland	339.994	276.699	259.540	247.826
Spain	153.471	178.434	201.836	232.712
China	128.459	161.591	193.280	214.128
Belgium	153.849	159.412	173.983	190.635
Switzerland	150.399	154.624	166.066	159.831
Hong Kong, China	135.107	137.873	150.073	155.570
Viet Nam	14.797	18.446	24.658	144.161
Russian Federation	132.193	111.429	132.081	137.736
Austria	109.907	115.146	130.777	131.982

**Figure 5: World Total Top Importing Countries of Face Mask (Thousand USD). (Source: ITC, 2020).**

Considering the total import status of face masks in the world, it is seen that there has always been an increase in the periods after 2016. The total amount of imports in 2019 was 13.902.940 billion dollars. The top 5 countries among the world's largest importers are the USA, Japan, Germany, France and the United Kingdom, respectively. The United States imported much more than its exports. The USA has a trade deficit for the face mask product. It was seen that the amount of imports in 2019 was almost close to China's export in 2019. Although Japan ranks 17th in exports, it ranked second in imports. Although Germany ranked second in exports, it ranked 3rd in imports. It has been observed that imports in France and the United Kingdom are more than their exports and they have a trade deficit like the USA. The fact that the first five countries in import are developed countries is a remarkable feature. The reason for this situation has been observed to be due to the labor-intensive production of the product. Turkey was the first to take place in 20 among those imports.

Importers	Exported value in 2016	Exported value in 2017	Exported value in 2018	Exported value in 2019
World	73.966	90.186	105.914	110.740
United States of America	7.818	7.831	11.007	16.241
Germany	8.111	10.954	13.662	14.392
Moldova, Republic of	8.539	9.665	11.143	11.590
United Kingdom	5.522	5.735	5.853	6.665
France	2.621	3.224	4.716	4.562
Greece	2.856	4.662	4.684	3.751
Spain	1.873	1.924	2.482	3.710
Iraq	2.375	3.922	3.847	3.479
Italy	795	1.351	1.560	2.187
Libya, State of	1.165	556	6.279	2.142
Poland	1.525	3.994	1.765	2.125
Austria	948	1.131	1.198	2.091
Free Zones	1.858	1.700	2.147	1.823
Kazakhstan	127	217	1.247	1.731
Russian Federation	232	206	1.153	1.719
Saudi Arabia	2.428	2.555	1.754	1.704
Slovakia	1.444	2.491	2.180	1.584
Israel	700	1.052	1.091	1.529
Belgium	719	739	1.037	1.401
Netherlands	1.083	1.216	1.195	1.382

*Figure 6: Turkey's facial mask total export and the most exported countries of first 20 countries (in thousands of US dollars). (Source: ITC, 2020)*

Turkey's total exports in 2019 was \$ 110.740 million. The first 20 countries of which Turkey exported are mainly the countries which are in the first five top 5 importing countries. Except for Moldova, Turkey has sold goods to these countries and mainly the environment close to where the product is low cost and profit margin that has been shown to be less export to countries where the transport costs.

Exporters	Imported value in 2016	Imported value in 2017	Imported value in 2018	Imported value in 2019
World	54.153	50.165	50.398	42.267
China	26.175	22.506	18.080	10.982
Poland	181	578	3.993	5.024
United Kingdom	3.266	2.250	5.002	4.307
Romania	2.153	2.959	3.666	3.095
Germany	3.316	3.170	3.653	2.736
Viet Nam	3.429	3.050	2.924	1.919
United States of America	1.559	704	1.500	1.841
Sweden	1.635	1.285	1.340	1.649
Italy	4.145	4.520	1.389	1.383
France	1.045	1.060	545	1.009
Spain	581	602	743	972
Czech Republic	593	672	533	961
Free Zones	474	376	751	777
Taipei, Chinese	610	533	466	759
Austria	350	307	433	476
Tunisia	19	122	460	460
Korea, Republic of	1.085	1.279	1.374	430
Serbia	293	286	353	347
Malaysia	72	214	230	315
Slovakia	318	564	610	315

**Figure 7: Turkey's total imports of face mask and the most imported first 20 countries (in thousands of US dollars) (Resource: ITC, 2020).**

Turkey's total imports face mask in 2019 was \$ 42.267 million. It has been observed that its import is less than its export. Turkey has a trade surplus for face mask product. The top 5 countries imported from are China, Poland, United Kingdom, Romania and Germany are respectively. It was seen that the highest increase was in Poland. The amount of face masks purchased from China has decreased over the years.



Importers	Exported value in 2018-M01	Exported value in 2018-M02	Exported value in 2018-M03	Exported value in 2019-M01	Exported value in 2019-M02	Exported value in 2019-M03	Exported value in 2020-M01	Exported value in 2020-M02	Exported value in 2020-M03	2019 1. Ay Değişim Oranı	2019 2. Ay Değişim Oranı	2019 3. Ay Değişim Oranı	2020 1. Ay Değişim Oranı	2020 2. Ay Değişim Oranı	2020 3. Ay Değişim Oranı
World	7.436	9.344	9.645	8.338	8.358	10.558	13.001	44.239	25.502	12%	-11%	9%	56%	429%	142%
Kuwait	12	48	10	3	84	8	9	12	6.800	-75%	75%	-20%	200%	-86%	84900%
Germany	1.189	1.036	1.057	1.128	958	1.428	1.767	6.903	3.302	-5%	-8%	35%	57%	621%	131%
Netherlands	43	95	143	113	100	93	976	1.194	1.556	163%	5%	-35%	764%	1094%	1573%
Romania	62	45	85	61	99	78	115	947	1.402	-2%	120%	-8%	89%	857%	1697%
Moldova, Republic of	791	1.036	1.034	979	853	932	1.152	1.236	1.317	24%	-18%	-10%	18%	45%	41%
United States of America	619	808	978	1.314	738	1.855	1.620	1.391	1.299	112%	-9%	90%	23%	88%	-30%
Slovakia	264	198	368	190	242	270	232	266	1.258	-28%	22%	-27%	22%	10%	366%
Italy	83	183	87	156	153	269	290	670	1.083	88%	-16%	209%	86%	338%	303%
China	4	0	2	1	1	2	672	17.400	926	-75%	0%	0%	67100%	1739900%	46200%
Spain	68	124	208	214	418	368	403	533	771	215%	237%	77%	88%	28%	110%
Albania	6	17	20	121	22	122	10	60	681	1917%	29%	510%	-92%	173%	458%
Bulgaria	120	73	291	101	32	189	158	140	376	-16%	-56%	-35%	56%	338%	99%
France	310	264	448	242	414	319	555	647	356	-22%	57%	-29%	129%	56%	12%
Japan	1	14	4	104	18	1	19	450	311	10300%	29%	-75%	-82%	2400%	31000%
United Kingdom	367	369	479	496	664	616	412	688	305	35%	80%	29%	-17%	4%	-50%
Greece	361	589	535	219	276	322	433	1.171	296	-39%	-53%	-40%	98%	324%	-8%
Israel	39	141	56	95	109	135	72	930	234	144%	-23%	141%	-24%	753%	73%
Sweden	22	12	11	40	8	69	572	566	232	82%	-33%	527%	1330%	6975%	236%
Jordan	10	30	40	54	4	51	43	38	186	440%	-87%	28%	-20%	850%	265%
Saudi Arabia	182	49	155	44	153	226	88	116	180	-76%	212%	46%	100%	-24%	-20%

**Figure 8: Turkey's total face mask exports and the most export-month change in her first 20 countries (in thousands of US dollars) (Resource: ITC, 2020).**

Turkey's January 2020 (1rst), February (2 months) and in March (3 months) compared to export figures of face mask with export figures for the same months of 2019 and 2018 and the intervening change is shown in the above figure. Japan ranked first in the countries with the highest rate of change in the 1st month of 2019, followed by Albania, Jordan, Spain, the Netherlands, Israel and the USA. In the countries with the highest rate of change in the second month of 2019, Spain took the first place, followed by Saudi Arabia, Romania and the United Kingdom. In the countries with the highest rate of change in the 3rd month of 2019, Sweden took the first place, followed by Albania, Italy and Israel. The change rates in these dates are at a level that can be considered normal because when there is an increase in exports to a country where there were no exports before so the increase in exchange rates can be very high due to the small numbers. China took the first place in the countries with the highest rate of change in the 1st month of 2020, and then Sweden and the Netherlands. The point to be noted here is that the first origin of Covid -19 is China. The effects of the virus, which immediately spread to its immediate surroundings after its release in China, have easily shown its effect on exports from the first month.

According to data that the first months of 2019. Turkey total exports was \$ 1,000 to China before Covid-19 after 2020 has made a total of 672 thousand dollars of exports in the same month. Sweden and the Netherlands has a high rate of exports. Demands have increased due to the measures taken due to the more spread of Covid-19 in the 2nd month and being heard all over the world. China ranked first, with 0 exports in the second month of 2019, and an export

of \$ 17,811 million was made in the second month of 2020. This alone may not explain its effect, but looking to other countries, the increase in exports to Sweden, Japan, the Netherlands, Romania, Jordan, Israel and Germany has been enormous at the second month of 2020. When the world rate of change is examined for 2 months, it is seen that there is an increase. Kuwait took the first place, followed by China, Japan, Romania and the Netherlands at the third month of 2020. Exports to Kuwait of the amount of increase in numbers with Covid-19's influence in Turkey's exports face mask showed that effect. the results obtained from the analysis of the data here because of Turkey's influence Covid-19 increased exports face mask.

Exporters	Imported value in 2018-M01	Imported value in 2018-M02	Imported value in 2018-M03	Imported value in 2019-M01	Imported value in 2019-M02	Imported value in 2019-M03	Imported value in 2020-M01	Imported value in 2020-M02	Imported value in 2020-M03	2019 1. Ay Değişim Oran	2019 2. Ay Değişim Oran	2019 3. Ay Değişim Oran	2020 1. Ay Değişim Oran	2020 2. Ay Değişim Oran	2020 3. Ay Değişim Oran
World	4.349	4.503	4.867	4.225	2.813	3.089	4.481	4.047	4.029	-3%	-38%	-37%	6%	44%	30%
China	1.641	1.656	1.550	1.272	368	384	1.435	1.242	827	-22%	-78%	-75%	13%	238%	115%
Poland	146	122	501	240	281	568	456	508	468	64%	130%	13%	90%	81%	-18%
United Kingdom	427	519	459	410	444	467	486	426	382	-4%	-14%	2%	19%	-4%	-18%
Germany	258	282	290	211	250	197	395	281	376	-18%	-11%	-32%	87%	12%	91%
Romania	578	517	426	286	272	342	198	252	341	-51%	-47%	-20%	-31%	-7%	0%
Czech Republic	60	33	71	31	66	76	140	27	254	-48%	100%	7%	352%	-59%	234%
Italy	121	261	138	80	111	150	138	120	196	-34%	-57%	9%	73%	8%	31%
Austria	1	2	0	9	4	1	17	3	125	800%	100%	100%	89%	-25%	12400%
Indonesia	0	1	0	1	1	1	0	47	116	100%	0%	0%	-100%	4600%	11500%
Tunisia	53	49	48	47	33	46	74	58	109	-11%	-33%	-4%	57%	76%	137%
Sweden	121	173	89	406	46	77	29	123	94	236%	-73%	-13%	-93%	167%	22%
France	29	60	89	18	31	56	99	110	93	-38%	-48%	-37%	450%	255%	66%
United States of America	67	90	66	122	176	230	190	300	90	82%	96%	248%	56%	70%	-61%
Hong Kong, China	12	0	0	0	14	3	0	1	77	-100%	1400%	300%	0%	-93%	2467%
Viet Nam	256	253	327	196	95	77	193	182	73	-23%	-62%	-76%	-2%	92%	-5%
Korea, Republic of	128	79	189	61	66	73	5	22	51	-52%	-16%	-61%	-92%	-67%	-30%
Morocco	0	0	0	0	0	0	0	1	36	0%	0%	0%	0%	100%	3600%
Spain	33	55	122	84	189	104	31	36	35	155%	244%	-15%	-63%	-81%	-66%
Japan	5	3	6	4	6	16	26	4	32	-20%	100%	167%	550%	-33%	100%
Slovakia	54	21	83	5	24	14	59	54	30	-91%	14%	-83%	1080%	125%	114%

**Figure 9: Monthly change in Turkey's total imports face mask and the most imported first 20 countries (in thousands of US dollars) (Source: ITC, 2020).**

Turkey's January 2020 (first month), February (second month) and March (third month) comparison of import figures of face mask with export figures for the same months of 2019 and 2018 and the intervening change is shows that 1st month change rates of 2020, Slovakia took the first place, followed by Malaysia, Japan, France and the Czech Republic. In the second month of 2020, Indonesia took the highest change in imports, followed by France, China and Sweden. In the third month of 2020, Austria, Indonesia, Morokko and Hong Kong followed. Turkey has imported from countries that Turkey did not import before. For the first 3 months of 2018 and 2019, no imports were made from Morocco for example. It has been deemed possible that the reason for so many imports from countries that were not imported before was due to Covid-19.

## Covid19 AND RESPIRATORY DEVICE (901920)

Exporters	Exported value in 2016	Exported value in 2017	Exported value in 2018	Exported value in 2019
World	6.461.157	7.030.687	7.476.730	8.020.556
Singapore	782.362	954.820	1.152.932	1.410.871
United States of America	1.075.132	1.122.258	1.124.656	1.239.764
Netherlands	500.726	604.632	692.110	794.666
China	482.587	589.922	702.393	763.696
Germany	619.537	642.284	685.408	638.848
Australia	643.442	670.865	600.955	620.908
Mexico	327.356	297.436	308.114	358.717
New Zealand	300.871	319.489	335.526	350.223
United Kingdom	255.410	266.686	313.573	281.574
Ireland	189.910	261.903	257.948	259.720
Switzerland	174.727	185.815	233.491	219.623
France	190.650	177.602	130.199	170.767
Canada	87.647	105.550	102.756	112.342
Czech Republic	88.648	71.924	124.507	111.552
Sweden	116.584	126.100	107.797	105.194
Italy	98.605	82.096	84.901	89.425
Malaysia	16.070	43.185	53.698	63.094
Hong Kong, China	43.500	45.777	54.837	56.910
Taipei, Chinese	24.789	29.044	37.982	31.303
Belgium	161.724	110.432	35.341	29.235

*Figure 10: World Total Exports of Respirators and Top 20 Exporting Countries (Thousand USD)*

World respiratory equipment exports totaled 8,020,556 billion dollars in 2019. The top 5 exporter countries are Singapore, USA, Netherlands, China and Germany. In the last 4 years, there has been an increase in the amount of exports every year. Singapore almost doubled the amount of exports it made in 2016 in 2019. It is seen that this product is mainly exported by countries producing high technology. Turkey is not among the top 20 countries in terms of exports.

Importers	Imported value in 2016	Imported value in 2017	Imported value in 2018	Imported value in 2019
World	7.055.843	7.653.609	8.072.808	8.471.976
United States of America	2.089.995	2.298.124	2.333.817	2.675.509
Netherlands	490.037	552.550	695.245	746.257
Germany	448.630	441.910	465.072	466.570
Japan	369.920	417.295	417.766	434.139
France	399.168	416.616	371.056	356.736
China	241.752	260.724	288.849	304.446
Singapore	257.681	294.851	311.356	289.524
United Kingdom	252.309	286.160	275.808	282.303
Canada	205.354	224.084	248.211	234.757
Italy	158.747	172.026	214.661	208.604
Australia	172.151	188.162	191.730	185.979
Spain	154.712	130.837	139.518	147.060
India	90.962	110.522	135.305	138.976
Russian Federation	124.328	126.779	143.836	129.457
Mexico	96.214	94.384	107.662	106.031
Switzerland	96.585	95.644	105.908	105.202
Brazil	73.810	77.733	99.251	99.205
Korea, Republic of	48.852	61.613	70.196	86.195
Saudi Arabia	24.832	31.380	48.009	72.467
Hong Kong, China	53.946	54.548	61.523	72.258

**Figure 11: World Total Import of Respirators and Top 20 Importers (Thousand USD) (Source: ITC, 2020).**

The world's total imports market for respirators is 8.417.976 billion dollars in 2019. The top 5 importers of this market are the USA, the Netherlands, Germany, Japan and France, respectively. As can be seen, China and especially Singapore have lagged behind in imports and their exports are higher than their imports, showing that they are a dominant country in this market. USA has been the biggest buyer in the market. Although it ranks high in many exports, the rate of import related to the product has been higher in its exports. Turkey is not among the top 20 importers of the world.

Importers	Exported value in 2016	Exported value in 2017	Exported value in 2018	Exported value in 2019
World	8.893	11.558	10.134	8.935
Saudi Arabia	457	463	410	779
Cyprus	234	254	252	567
Libya, State of	293	768	622	410
Egypt	484	276	173	349
Spain	149	205	241	344
Chile	0	53	0	325
Georgia	410	460	268	309
Kazakhstan	36	18	59	308
Netherlands	15	23	251	301
Germany	175	59	160	290
Syrian Arab Republic	422	471	475	289
Romania	345	449	536	278
Kuwait	112	207	74	264
Serbia	458	717	793	245
Iraq	101	157	314	243
Azerbaijan	59	293	349	236
Israel	108	12	1	230
United Kingdom	16	4	65	230
Algeria	487	148	181	216
Uganda	2	748	161	214

*Figure 12: Turkey's Total Respiratory Equipment exports and the most exported first 20 countries (in thousands of US dollars) (Source: ITC, 2020).*

Turkey's total export of breathing apparatus was 8,935 million dollars in 2019. It has increased and decreased over the years. The top 5 countries to which most exported countries are Saudi Arabia, Cyprus, Libya, Egypt and Spain, respectively. However the respirator exports are not addressed to sales in major markets like face masks. It has made its exports to the closest markets.

Exporters	Imported value in 2016	Imported value in 2017	Imported value in 2018	Imported value in 2019
World	63.417	59.849	61.997	66.115
Germany	10.236	10.466	13.806	18.857
China	16.373	16.762	15.532	13.740
Switzerland	797	1.118	3.738	11.385
United States of America	16.161	10.703	11.367	8.408
Ireland	2.283	2.408	2.811	2.491
New Zealand	3.570	3.711	3.906	2.247
Sweden	2.433	6.021	3.000	1.654
Australia	1.136	1.066	1.554	1.210
Italy	593	875	753	1.085
Canada	1.285	1.490	366	847
United Kingdom	465	423	348	621
Taipei, Chinese	854	656	641	599
Malaysia	73	60	121	437
Mexico	535	550	437	335
Korea, Republic of	612	731	301	297
Lithuania	168	378	384	291
Singapore	222	303	400	289
Romania	103	240	314	249
France	269	450	1.343	182
Netherlands	1.311	0	2	160

**Figure 13: Respiratory Equipment Import of Turkey and the most imported top first 20 countries (in thousands of US dollars) (Source: ITC, 2020).**

Breathing apparatus bought by Turkey totalled 66.115 million dollars in 2019. In other words, Turkey, had a trade deficit where imports are more than exports. The main reason is that the product requires high technology and that this technology can not available in Turkey then and is therefore shown as a reason for why exported to close surrounding undeveloped countries. It imports mostly from Germany, China, Switzerland, the USA and Ireland. While purchasing the products, they are taken mainly from developed countries.

Importers	Exported value in 2018-M01	Exported value in 2018-M02	Exported value in 2018-M03	Exported value in 2019-M01	Exported value in 2019-M02	Exported value in 2019-M03	Exported value in 2020-M01	Exported value in 2020-M02	Exported value in 2020-M03	2019 1. Ay Değişim Oranı	2019 2. Ay Değişim Oranı	2019 3. Ay Değişim Oranı	2020 1. Ay Değişim Oranı	2020 2. Ay Değişim Oranı	2020 3. Ay Değişim Oranı
World	555	523	1348	890	922	1062	941	1039	2394	60%	76%	-21%	6%	13%	125%
Montenegro	0	0	0	0	0	1	0	0	564	0%	0%	0%	0%	0%	56300%
China	0	0	0	0	0	1	0	0	322	0%	0%	0%	0%	0%	32100%
Malta	0	0	0	0	0	1	0	0	264	0%	0%	0%	0%	0%	26300%
Azerbaijan	15	69	24	140	4	4	59	42	170	833%	-94%	-83%	-58%	950%	4150%
Kuwait	0	31	10	103	11	1	6	0	164	10200%	-65%	-90%	-94%	-100%	16300%
Cyprus	24	12	25	40	25	92	12	54	132	67%	108%	268%	-70%	116%	43%
Iraq	11	8	45	16	3	24	18	87	85	45%	-63%	-47%	13%	2800%	254%
Romania	42	15	77	13	24	51	20	251	67	-69%	60%	-34%	54%	946%	31%
Ukraine	0	0	18	1	0	1	20	0	63	0%	0%	-94%	1900%	0%	6200%
Czech Republic	0	0	1	0	0	1	0	0	55	0%	0%	0%	0%	0%	5400%
India	0	6	25	21	32	0	0	0	54	20900%	433%	-100%	-100%	-100%	53900%
Saudi Arabia	11	33	19	106	182	282	0	31	45	864%	452%	1384%	-100%	-83%	-84%
Kenya	0	1	0	0	0	48	14	0	39	0%	-100%	47900%	13900%	0%	-19%
Iran, Islamic Republic of	13	0	62	0	11	0	30	0	39	-100%	10900%	-100%	29900%	-100%	38900%
Hong Kong, China	0	0	0	0	0	0	0	0	29	0%	0%	0%	0%	0%	28900%
Egypt	7	0	18	9	69	93	7	70	27	29%	68900%	417%	-22%	1%	-71%
Italy	71	1	0	4	0	9	6	2	26	-94%	-100%	8900%	50%	1900%	189%
Indonesia	10	0	0	0	12	0	0	6	24	-100%	11900%	0%	0%	-50%	23900%
Libya, State of	0	33	45	18	41	61	41	6	21	17900%	24%	36%	128%	-85%	-66%
United Arab Emirates	12	0	0	25	4	0	0	2	20	108%	3900%	0%	-100%	-50%	19900%

Figure 14: Monthly change in Turkey's total exports Breathing Apparatus and the most exported top 20 countries (in thousands of US dollars) (Source: ITC, 2020).

Turkey's breathing apparatus total sales in 2020 increased 6% in the 1st month, increased 13 percent in thesecond month and increased 125 percent in the third month. In the first month of 2019, the highest increase in exports was to India, Libya, Kuwait and Saudi Arabia, respectively. In the second month, Egypt, Indonesia and Iran. In the third month Kenya, Italy and Saudi Arabia. Here, when we look at the highest changes in the 1st month of 2020, the increase in exports to Iran, one of the first countries affected by the corona virus, showed itself tremendously. Later, the increase in Kenya is very high, while it normally goes negative, exports have experienced a tremendous increase at the time of the corona virus. In Ukraine, while exports were negative and zero due to the same conditions, they suddenly increased in the first month. Looking at the second month of 2020, Iraq took the first place, followed by Italy, Azerbaijan and Romania. 3rd month is the most important month because there is a 125% increase in exports of Turkey, with Montenegro ranked first, followed by a tremendous increase in the rate of change in exports to Iran, China, Hong Kong, Malta, Indonesia, the United Arab Emirates and Kuwait. Since the month when Covid-19 started to be felt in countries, there has been an increase in the export of respiratory devices.

Exporters	Imported value in 2018-M01	Imported value in 2018-M02	Imported value in 2018-M03	Imported value in 2019-M01	Imported value in 2019-M02	Imported value in 2019-M03	Imported value in 2020-M01	Imported value in 2020-M02	Imported value in 2020-M03	2019 1. Ay Değişim Oranı	2019 2. Ay Değişim Oranı	2019 3. Ay Değişim Oranı	2020 1. Ay Değişim Oranı	2020 2. Ay Değişim Oranı	2020 3. Ay Değişim Oranı
World	5.489	5.546	4.606	8.376	6.428	4.364	3.857	3.908	3.974	53%	16%	-5%	-54%	-39%	-9%
China	2.098	2.004	998	1.548	1.588	1.234	1.494	1.205	1.286	-26%	-21%	24%	-3%	-24%	4%
Germany	1.383	1.167	1.291	4.277	2.344	517	687	809	900	209%	101%	-60%	-84%	-65%	74%
United States of America	931	517	1.161	2.083	1.523	897	283	738	485	124%	195%	-23%	-86%	-52%	-46%
New Zealand	465	516	225	15	119	178	193	330	443	-97%	-77%	-21%	1187%	177%	149%
Mexico	73	61	40	5	28	22	17	37	171	-93%	-54%	-45%	240%	32%	677%
Sweden	127	77	185	0	2	1.036	70	17	118	-100%	-97%	460%	69900%	750%	-89%
Singapore	0	72	46	0	0	40	5	15	80	0%	-100%	-13%	4900%	14900%	100%
Netherlands	0	0	0	0	0	0	339	49	71	0%	0%	0%	338900%	48900%	70900%
Australia	1	263	123	0	181	73	22	15	69	-100%	-31%	-41%	21900%	-92%	-5%
Switzerland	21	60	20	0	73	76	0	84	60	-100%	22%	280%	0%	15%	-21%
Italy	50	163	31	197	176	24	105	135	47	294%	8%	-23%	-47%	-23%	96%
Ireland	131	373	92	146	25	91	361	184	46	11%	-93%	-1%	147%	636%	-49%
Austria	0	0	0	0	0	0	0	0	30	0%	0%	0%	0%	0%	29900%
United Kingdom	30	9	7	3	55	26	3	27	27	-90%	511%	271%	0%	-51%	4%
Korea, Republic of	0	0	0	0	0	0	0	9	23	0%	0%	0%	0%	8900%	22900%
Romania	21	13	38	0	27	37	1	19	22	-100%	108%	-3%	900%	-30%	-41%
Czech Republic	0	0	7	0	1	3	0	1	20	0%	900%	-57%	0%	0%	567%
Hungary	0	10	0	8	0	8	0	0	20	7900%	-100%	7900%	-100%	0%	150%
Canada	0	37	35	50	118	18	75	22	17	49900%	219%	-49%	50%	-81%	-6%
Taipei, Chinese	64	51	59	0	5	45	46	127	15	-100%	-90%	-24%	45900%	2440%	-67%

Figure 15: Turkey's total imports of Breathing Apparatus monthly changes, and the most imported top 20 countries (in thousands of US dollars) (Source: ITC, 2020).

Turkey's imports in 2020, it much more greater than its exports. Turkey showed a positive increase in the import of the first three months of 2019 in other words, the change in the 1st and 2nd month in 2020 was negative. It has been observed that the main reason for this is that this respiratory device, which is required for the patients affected by the country's Covid-19, is invested in the production of the country with its own means, thus reducing the dependence on the outside, and in addition, it has been produced in the products for export in line with the opportunities available and the export has been increased. Here, when we look at the countries with the highest import change rate in the 1st month of 2020, the Netherlands, Sweden, Taiwan, Austria and Singapore were seen. It has been observed that the imports of the product from the countries that have this R&D experience increase due to the fact that the countries here demand high technology for this product. In the second month, the highest increase was the Netherlands, Singapore, South Korea and Taiwan. It has been observed that these countries are countries that can produce high technology. In 3rd month, the maximum rate of increase is in the Netherlands, Austria, South Korea and have been in Mexico country and general. Looking at the first three-month exchange rate of Turkey proportion of the total change in the import of 2020 gave always negative results that has reduced imports. The cause being understood as the production inhale Turkey increased its production due to the effects of Covid-19 (Sengül, 2020). It increased its exports and decreased its imports.



## **Result**

Although it has created crises in some areas for countries, it has created opportunities for countries in some areas. One of these opportunities is the production of the face mask used to control the effects of Covid-19 and the respirator that helps the sick people to heal and to export to the countries in need in the world and to help the country by export income. The data obtained from Trademap has been examined. It has been concluded that Covid-19 has an effect on the import and export of the products for both products. Turkey has increased the amount of exports of face mask and breathing apparatus in the first three months of 2020. It produced the respirator in its own country and there has been a decrease in imports due to this manufactured respirator. The face mask is also produced domestically and the export amount has been increased.

## References

- Bag, M., & Sade, G. (2020, 05 05). *Dünyada Covid-19 salgının ilk 100 gününde yaşananlar, ilk nerede ortaya çıktı, nasıl yayıldı*. Euronews Türkçe. Retrieved from Euronews Türkçe: <https://tr.euronews.com/2020/05/04/dunyada-covid-19-salg-n-n-ilk-100-gununde-yasananlar-ilk-nerede-ortaya-c-kt-nas-l-yay-ld>.
- BBC. (2020, 05 05). *Koronavirüs (Covid-19): Evlerde virüs yüzünden hangi ürünler depolanıyor?* Retrieved from BBC: Koronavirüs (Covid-19): Evlerde virüs yüzünden hangi ürünler depolanıyor? <https://www.bbc.com/turkce/haberler-dunya-51767238>.
- BBC. (2020, 05 05). *Pandemi nedir, ülkeleri nasıl etkiler? - Dünya Sağlık Örgütü koronavirüsü pandemi ilan etti*. Retrieved from BBC Türkçe: <https://www.bbc.com/turkce/haberler-dunya-51614548>.
- ITC. (2020, 05 06). *Trade Map*. Trade Map. Retrieved from <https://www.trademap.org/>.
- Medipol. (2020, 05 05). *Pandemi Nedir? Corona Virüsü Neden Pandemi İlan Edildi?* Retrieved from Medipol Sağlık Grubu: <https://www.medipol.com.tr/bilgi-kosesi/bunlari-biliyor-musunuz/pandemi-nedir-corona-virusu-neden-pandemi-ilan-edildi>.
- Meters, W. (2020, 05 05). *COVID-19 CORONAVIRUS PANDEMIC*: Retrieved from World Meters: <https://www.worldometers.info/coronavirus/>.
- Özdoğan, M. (2020, 05 11). *Epidemi ve Pandemi nedir? Arasındaki farklar nelerdir?* Retrieved from Mustafa Özdoğan: <https://www.drozdogan.com/epidemi-ve-pandemi-nedir-koronavirus-pandemisi/>.
- Şengül, S. (2020, 05 11). *Bakan Varank yerli yoğun bakım solunum cihazının üretim sürecini anlattı*. AA Haber. Retrieved from AA Haber: <https://www.aa.com.tr/tr/ekonomi/bakan-varank-yerli-yogun-bakim-solunum-cihazinin-uretim-surecini-anlatti/1818034>.
- Unesco. (2020, 05 19). *How much does your country invest in R&D?* Unesco Institute for Statistics. Retrieved from Unesco: <http://uis.unesco.org/apps/visualisations/research-and-development-spending/>.