

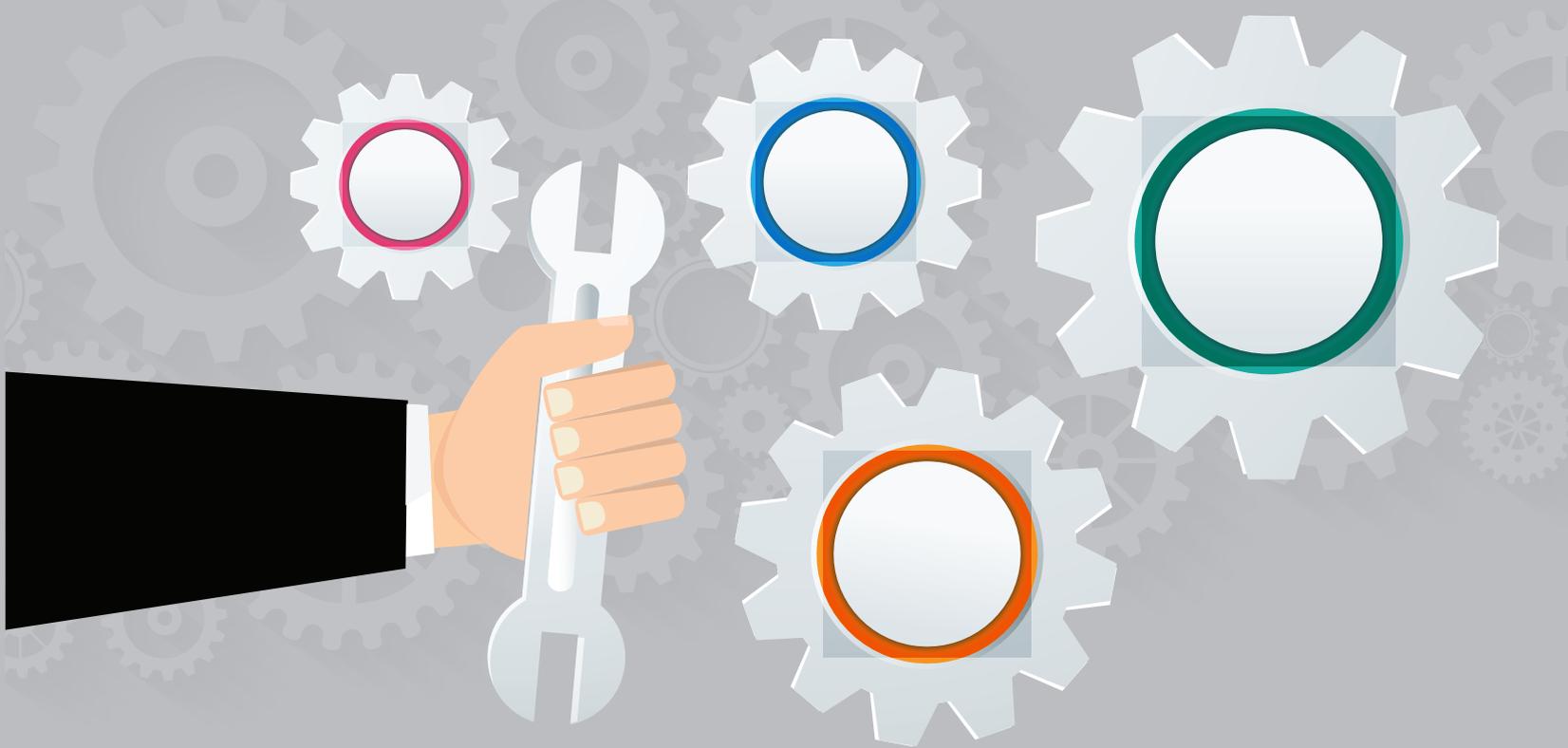
PAGEV

PLASTICS PROCESSING MACHINERIES

INDUSTRY FOLLOW — UP

REPORT

2015 / 9 MONTHS



EXECUTIVE SUMMARY

Turkey, is in a situation that it meets the 80 % of the demand for plastics processing machines, accessories and parts through imports, is a net importer regarding the aforementioned manufactures and cannot provide enough added value with low export prices when compared to the developed countries despite the fact that the unit export prices came close to the import prices.

While the plastics industry is developing swiftly, the production of plastics processing machines are not developing in parallel with the said manner and the industry is continuously losing its ground due to cheap plastics machines producer countries, particularly China. The gradual downsizing in the plastics processing machine industry in Turkey Plastics is caused by the fact that there is not a state strategy towards the processing machines industry, the domestic manufacturers are not protected enough and that the plastics product manufacturers prefer cheap and second hand machine imports in order to get the edge over competition.

The plastics industry made an investment of around USD billion 8 in machines and parts between the years 2003 – 2015 September and the average annual amount of the investment made for the last 13 years is around USD million of 608 and of USD million 765 in the last 5 years.

24 % of the said amount was comprised of injection, 18 % of extrusion and 28 % of shearing, splitting and forming machines. While a production of USD million 311 was made in plastics processing machines industry in 2015, USD million 123 of the said amount was exported. It is observed that the internal market sales are USD million 785 against USD million 596 of imports.

While a production of USD million 245 was made in plastics processing machines industry in 2015 9 months, USD million 94 of the said amount was exported. It is observed that the internal market sales are USD million 583 against USD million 433 of imports.

In this period, % 74 of domestic sales was met by imports and 38 % of production was exported. Export coverage ratio of import realized as % 22.

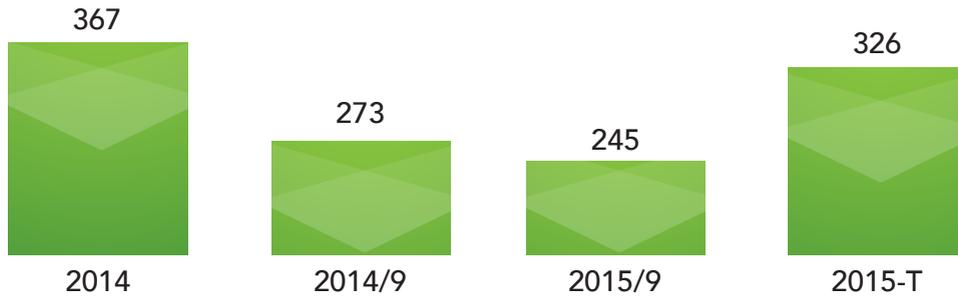
It can be seen that the exporting markets which fall within the first 10 spots in the exports of Turkey comprise the 15 % of the total world plastics processing machines total imports. In order for Turkey to increase its plastics processing machine exports, it should increase its advertising activities towards the other countries which fall within the remaining 85 % of the world plastics processing machine imports.

Turkey can set up the necessary incentive substructure for global machine manufacturers to invest in Turkey by using its cheap and qualified manpower and experience in machines manufacturing and special incentives can be provided to the global players for their investments on plastics processing machines in Turkey. Turkey could be turned into a production and exports base for at least some of the plastics processing machines with the incentive substructure which is to be applied in the said manner. In case of achieving the aforesaid goal, other models of the machines can be manufactured in Turkey and the machines needs of the West can be supplied from Turkey.

If Turkey becomes a global player in machines manufacturing, this could enable for accessory and parts concerning this industry to be manufactured at a fast pace and exported with a higher added value.

PLASTICS PROCESSING MACHINES PRODUCTION

Plastics processing machines production realized as USD million of 245 in 9 months of 2015 decreasing by % 10 compared to the same period of 2014. Production is estimated to be USD million of 326 at the last of 2015 decreasing by 11 % with respect to 2014.



Form 1: Plastic processing machines production (\$ million)

At the end of 2015, it is expected that thermoforming machines production will increase 2 % while the others production will decrease between % 4 - % 52 with respect to 2014.

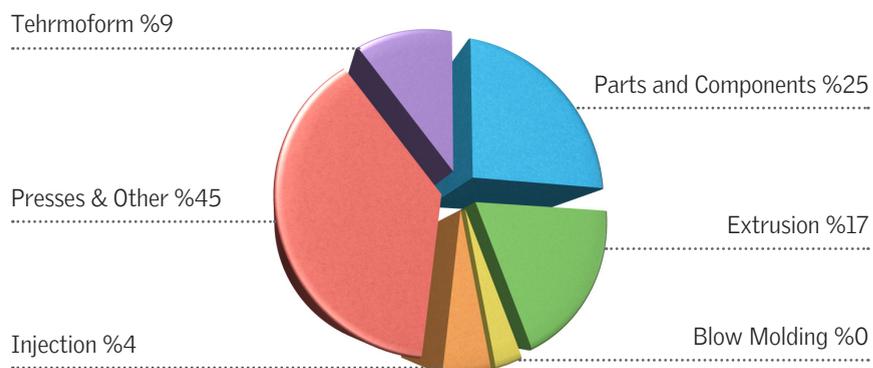
Sheet 1: Plastic processing machines production (\$ Million)

MACHINERIES	2014	2014/9	2015/9	2015 (T)	9 AYLIK ARTIŞ (%) 2015 / 2014
INJECTION MACH.	27	20	10	13	-52
EXTRUSION MACH.	59	48	43	57	-12
BLOW MOLDING MACH.	1	1	0	1	-46
THERMOFORMING MACH.	29	20	22	30	10
PRESSES AND OTHER MACH.	159	115	109	146	-5
PARTS AND COMPONENTS	92	68	60	80	-12
TOTAL	367	273	245	326	-10

Source: Turkish Statistics Department

On a value basis injection machines received 4 %, extrusion machines 17 %, thermoforming machines % 9, presses and other machines % 45, and parts and components % 25 in total machines production in 9 months of 2015. The share of blown molding machines shared less than 1 % in total production.

Form 2: Plastic processing machines production by types (2015 / 9)



PLASTICS PROCESSING MACHINES IMPORTS

Plastics processing machines imports realized as USD million of 433 in 9 months of 2015 decreasing by % 8 compared to the same period of 2014. Imports are estimated to be USD million of 577 at the last of 2015 decreasing by 10 % with respect to 2014.



At the end of 2015, it is expected that except thermoforming, imports of all machines will decrease between % 6 - % 30 with respect to 2014.

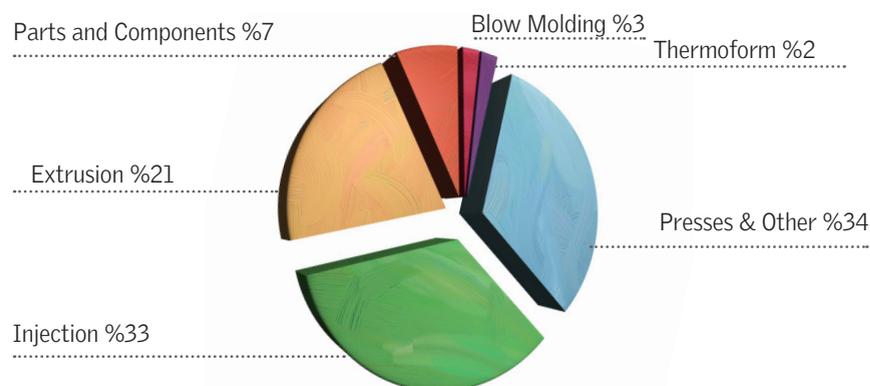
Sheet 2: Plastics Processing Machines Imports (USD Million)

MACHINERIES	2014	2014/9	2015/9	2015 (T)	9 M INCREASE (%) 2015 / 2014
INJECTION MACH.	187	143	145	194	1
EXTRUSION MACH.	174	129	91	122	-29
BLOW MOLDING MACH.	14	10	12	16	20
THERMOFORMING MACH.	12	10	7	9	-30
PRESSES AND OTHER MACH.	207	148	147	195	-1
PARTS AND COMPONENTS	47	33	30	41	-6
TOTAL	641	473	433	577	-8

Source: Turkish Statistics Department

The 34 % of the total imports in the 9 months of 2015 was comprised of presses and other machines while another 33 % was formed by injection 21 % by extrusion machines, % 3 of blow molding machines % 2 of thermoform machines and % 7 of parts and components.

Form 4: Plastic processing machines imports by types (%)



PLASTICS PROCESSING MACHINES IMPORTS BY COUNTRIES

The 10 countries received a share of 88 % on unit base and share 90 % on value base in 2015 nine months. China, Germany and Italy are the first 3 countries from which Turkey imports plastics processing machines. These countries share % 75 of imports on unit base and % 64 % on value base. China itself shared % 47 of total imports on unit base and % 75 on value base.

Source: Turkish Statistics Department

COUNTRIES	UNIT	\$ MILLION	UNIT SHARE %	USD SHARE %	AVERAGE PRICE \$ / KG	AVERAGE PRICE \$ / UNIT
CHINA	2.740	117	47	27	6	42.774
GERMANY	880	106	15	25	22.7	120.637
ITALY	745	52	13	12	19.5	70.005
AUSTRIA	99	27	2	6	12.4	273.672
TAIVAN	207	22	4	5	9.2	107.683
JAPAN	147	21	3	5	17.5	145.002
THAILAND	44	12	1	3	17.2	268.615
SWISS	46	11	1	3	35.6	238.930
FRANCE	22	10	0	2	20.7	468.822
ABD	148	10	3	2	22.8	67.681
10 COUNTRIES TOTAL	5.078	389	88	90	11.3	76.675
OTHER COUNTRIES	704	43	12	10	20.4	61.673
TOTAL	5.782	433	100	100	11.8	74.848

Sheet 3: 10 Import Partners in Plastics Processing Machines Imports (2015 / 9)

PLASTICS PROCESSING MACHINES EXPORTS

Plastics processing machines exports realized as USD million of 94 in 9 months of 2015 decreasing by % 11 compared to the same period of 2014. Exports are estimated to be USD million of 126 at the last of 2015 decreasing by 12 % with respect to 2014.



At the end of 2015, it is expected that except thermoforming, exports of all machines will decrease between % 4 - % 52 with respect to 2014.

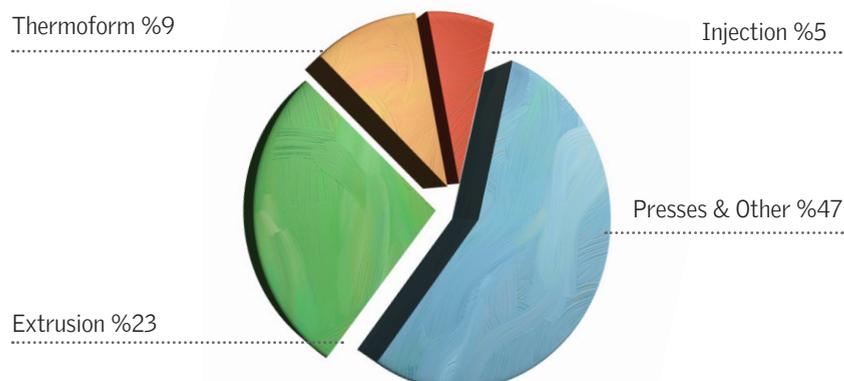
Sheet 4: Plastics Processing Machines Exports (\$ Million)

MACHINERIES	2014	2014/9	2015/9	2015 (T)	9 M INCREASE (%) 2015 / 2014
INJECTION MACH.	14	10	5	7	-52
EXTRUSION MACH.	30	24	21	28	-12
BLOW MOLDING MACH.	0.3	0.3	0.2	0.2	-46
THERMOFORMING MACH.	12	8	9	12	10
PRESSES AND OTHER MACH.	64	46	44	58	-5
PARTS AND COMPONENTS	23	17	15	20	-12
TOTAL	142	106	94	126	-11

Source: Turkish Statistics Department

The 5 % of the total imports in the 9 months of 2015 was comprised of injection machines while another 23 % was formed by extrusion, 9 % by thermoforming, % 47 of presses and other machines and % 16 of parts and components.

Form 6: Machines export by types (%)



PLASTICS PROCESSING MACHINES EXPORTS BY COUNTRIES

The plastics processing machines exports destined to the 10 countries in 2015 nine months period constituted the 39 % of the total exports on unit basis and the 47 % on value basis. The first 3 countries to which Turkey has conducted plastics processing machines exports in this period are Russia, Iran and Germany.

Source: Turkish Statistics
Department

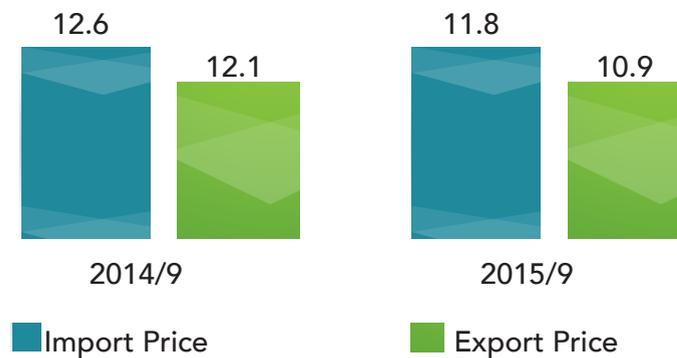
COUNTRIES	UNIT	\$ MILLION	UNIT SHARE %	\$ SHARE %	AVERAGE PRICE \$/ UNIT	AVERAGE PRICE \$/ KG
RUSSIA	170	9	9	9	51.620	9.3
IRAN	222	7	12	7	30.423	10.2
GERMANY	54	5	3	6	98.754	10.5
BELARUS	16	5	1	5	293.590	11.4
ROMANIA	48	4	3	4	85.440	14.1
S.ARABIA	28	3	1	4	118.621	13.6
UZBEKISTAN	45	3	2	3	73.181	13.2
BULGARIA	63	3	3	3	51.337	10.6
UAE	20	2	1	3	118.373	12.1
KAZAKHSTAN	66	2	3	2	34.793	10.3
10 COUNTRIES TOTAL	732	44	39	47	60.346	10.9
OTHER COUNTRIES	1159	50	61	53	43.112	10.9
TOTAL	1891	94	100	100	49.783	10.9

Sheet 5: 10 Export Partners for Plastics Processing Machines
(2015 / 9)

FOREIGN TRADE UNIT PRICES FOR PLASTICS PROCESSING MACHINES

While the average unit import price for plastics processing machines and accessories and parts was 12,6 USD/kg in the 9 months of 2014, it regressed to 12.1 USD/Kg in the nine months of 2015. On the other hand, the unit export prices fell down to 10,9 USD/Kg from 11,8 decreasing by 5 10 compared to the same period of 2014.

Form 7: Unit foreign trade prices for plastic process machines (USD/Kg)



It can be observed that the unit import price for all of the items apart from injection and extrusion decreased in the 9 months of 2015. In the same period, unit export price for all of the items apart from blow molding and thermoform machines also decreased.

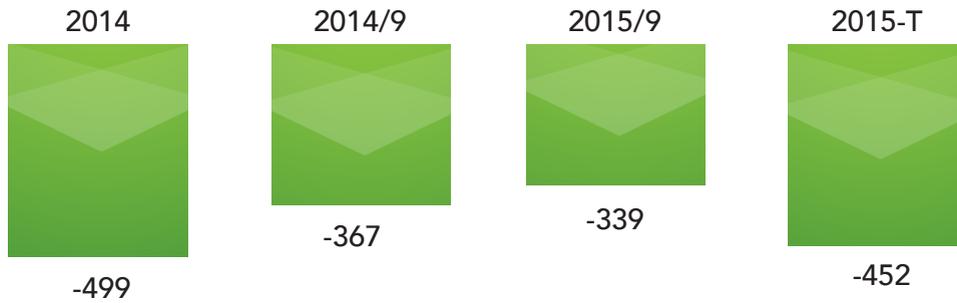
Sheet 6: Unit Foreign Trade Prices for Plastics Processing Machines (USD/Kg)

	Import Prices			Export Prices		
	2014/9	2015/9	% increase	2014/9	2015/9	% Increase
Machineries						
Injection Mach.	6.6	6.8	3.0	7.3	4.2	-43
Extrusion Mach.	21.8	21.8	0.0	14.9	12.5	-16
Blow Molding Mach.	25.0	18.9	-24	5.5	12.3	125
Termoform Mach.	15.3	11.1	-27	18.0	21.5	19
Presses & Other Mach.	18.3	16.7	-9	12.2	11.6	-5
Parts and Components	46.9	28.8	-39	11.9	9.7	-19
Total	12.6	11.8	-7	12.1	10.9	-10

The unit import prices for plastics processing machines have always been higher than unit export prices since 2003. This circumstance is the proof of the fact that Turkey imports machines with higher added value and manufactures and exports machines with lower added value.

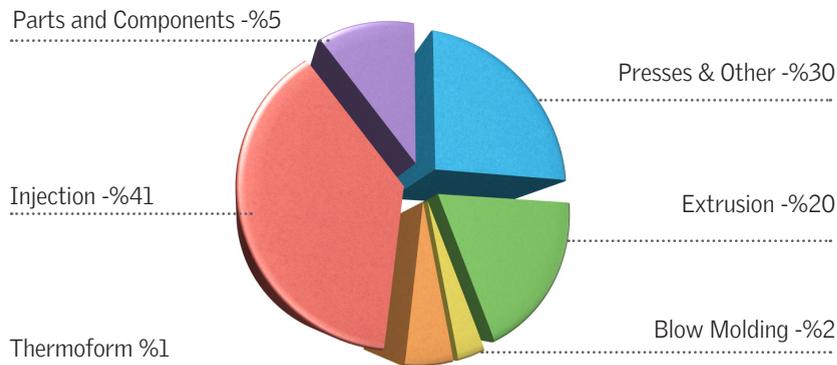
FOREIGN TRADE DEFICIT

Turkey has always had foreign trade deficit in plastics processing machines. Its foreign trade deficit realized as USD million of 339 in the 9 months of 2015 decreasing by % 8 compared to the same period of 2014. The foreign trade deficit is estimated to be USD million of 452 decreasing by 10 with respect to 2014.



Form 8: Plastic process machines foreign trade deficit (usd million)

Form 9: Plastic process machines foreign trade deficit by types



In the 9 months of 2015, % 41 of total foreign trade deficit formed by injection, % 30 by presses and other machines, % 20 by extrusion, % 5 by thermoform machines.

Sheet 7: Foreign Trade Deficit for Plastics Processing Machines (USD Million)

MACHINERIES	2014	2014/9	2015/9	2015 (T)	9 AYLIK ARTIŞ (%) 2015 / 2014
INJECTION MACH.	-174	-133	-140	-187	5
EXTRUSION MACH.	-144	-105	-70	-93	-33
BLOW MOLDING MACH.	-14	-10	-12	-16	22
THERMOFORMING MACH.	0	-2	2	3	-197
PRESSES AND OTHER MACH.	-143	-102	-103	-137	1
PARTS AND COMPONENTS	-24	-16	-15	-21	-1
TOTAL	-499	-367	-339	-452	-8

Source: Turkish Statistics Department

DOMESTIC MARKET SALES

The plastics industry, in parallel with the increase in its processing capacity, makes investment in machine and equipment with an increasing trend every year. The machine and equipment investment of the industry, realized as USD million of 583 in the nine months of 2015 decreasing by 2 % with respect to the same period of 2014.

Total machine and equipment investments of the industry is expected to be around USD million of 790 decreasing by % 9 compared to 2914.

Form 10: Machinery and accessories investment of TPI



It is expected that, at the last of 2015 foreign trade deficit for all items other than injection machines, to decrease with respect to 2014

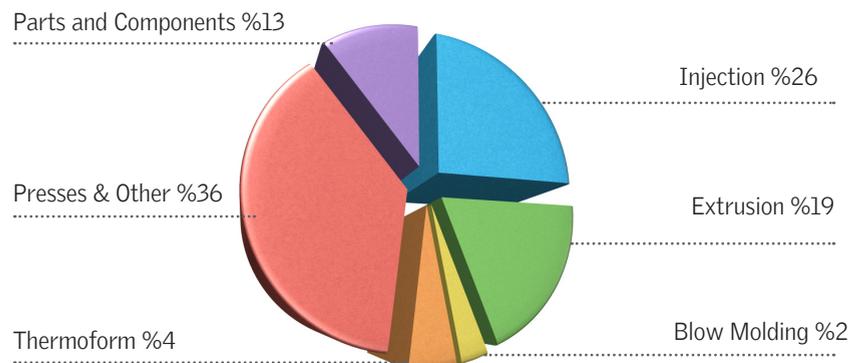
Sheet 8: Plastics Processing Machines Domestic Sales (USD Million)

MACHINERIES	2014	2014/9	2015/9	2015 (T)	9 M INCREASE (%) 2015 / 2014
INJECTION MACH.	201	154	150	200	-2
EXTRUSION MACH.	203	153	113	150	-26
BLOW MOLDING MACH.	15	10	12	16	17
THERMOFORMING MACH.	29	22	20	27	-8
PRESSES AND OTHER MACH.	302	217	212	283	-2
PARTS AND COMPONENTS	116	84	76	101	-10
TOTAL	867	640	583	778	-9

Source: Turkish Statistics Department

In 9 months of 2015, injection machines share % 26 of total investments, whereas extrusion machines share % 19, presses and other machines share % 36 and parts and components share % 13.

Form 11: Machinery and accessories investment by machine types



TOTAL SUPPLY & DEMAND EQUILIBRIUM IN PLASTICS PROCESSING MACHINES

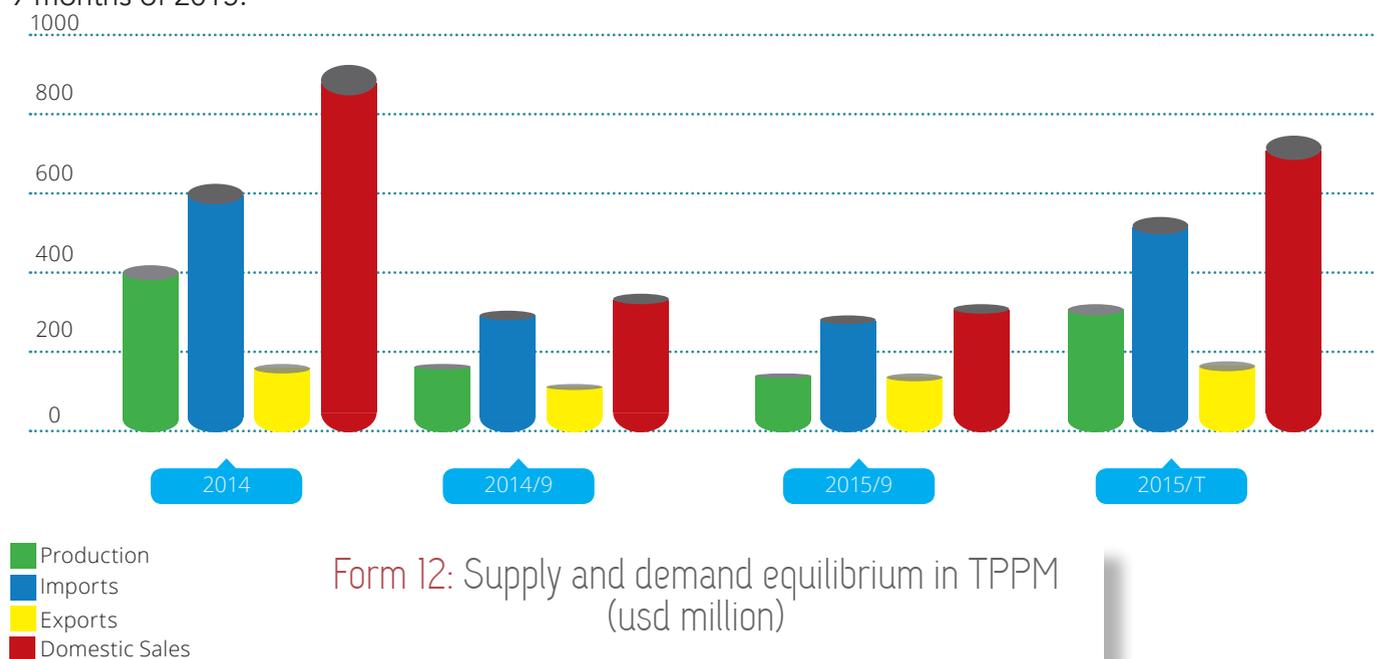
A production of USD million 245, imports of USD million 433, exports of USD million 94 and domestic market sales of USD million 583 (machine and equipment investment of plastics industry) occurred in the plastics processing machines and their accessories and parts industry in the nine months of 2015. Industry gives USD million of 339 foreign trade deficit in this period.

Sheet 9: Supply and Demand Equilibrium in Turkish Plastics Processing Machines (USD Million)

MACHINERIES	2014	2014/9	2015/9	2015 (T)	9 M INCREASE (%) 2015 / 2014
PRODUCTION	367	273	245	326	-10
IMPORTS	641	473	433	577	-8
EXPORTS	142	106	94	126	-11
DOMESTIC SALES	867	640	583	778	-9
FOREIGN TRADE DEFICIT	-499	-367	-339	-452	-8
EXPORTS / PRODUCTION	39	39	38	38	
IMPORTS / DOMESTIC SALES (%)	74	74	74	74	
EXPORTS / IMPORTS (%)	22	22	22	22	

Source: Turkish Statistics Department

It can be observed that the 74 % of the domestic sales (machine equipment investment of industry) was provided with imports, that the 38 % of the total production was exported and that the export coverage ratio of import was 22 % for the plastics processing machines and their accessories and parts industry in the 9 months of 2015.



PLASTICS INJECTION MACHINES SUPPLY & DEMAND EQUILIBRIUM

10 million dollars of production, 145 million dollars of imports and 5 million dollars of exports and 150 million dollars of domestic market sales (injection machines investment of plastics industry) were made in the plastics injection machines in the 9 months of 2015.

It can be observed that the 97 % of the domestic sales (injection machines investment of the industry) was provided by imports.

Sheet 10: Supply and Demand Equilibrium in Injection Machines (usd million)

MACHINERIES	2014	2014/9	2015/9	2015 (T)	9 M INCREASE (%) 2015 / 2014
PRODUCTION	27	20	10	13	-52
IMPORTS	187	143	145	194	1
EXPORTS	14	10	5	7	-52
DOMESTIC SALES	201	154	150	200	-2
FOREIGN TRADE DEFICIT	-174	-133	-140	-187	5
EXPORTS / PRODUCTION	50	50	50	50	
DOMESTIC SALES / IMPORTS (%)	93	93	97	97	
EXPORTS / IMPORTS (%)	7	7	3	3	

Source: Turkish Statistics Department

The 98 % of the imports of plastics injection machines is conducted mostly from 10 countries. China receives a share of 61 % on a unit basis and 45 % on a value basis for the imports of plastics injection machines. It can be observed that Germany and Austria, Japan and Taiwan are the countries from which Turkey imports the most following China.

Sheet 11: Injection Machines Imports By Countries (2015 - 9)

COUNTRIES	UNIT	\$ MILLION	UNIT SHARE %	\$ PAY %	AVERAGE PRICE \$ / KG	AVERAGE PRICE \$ / UNIT
CHINA	1.010	65	61	45	4.8	64.710
GERMANY	193	22	12	15	12.9	114.537
AUSTRIA	74	17	4	11	9.2	225.952
JAPAN	72	11	4	8	11.3	152.221
TAIVAN	109	10	7	7	6.5	89.699
ITALY	102	7	6	5	10.0	68.734
SWISS	12	3	1	2	14.1	253.722
CANADA	3	3	0	2	21.3	847.126
S.KOREA	24	2	1	1	7.1	81.147
FRANCE	9	2	1	1	12.8	202.510
10 COUNTRIES TOTAL	1.608	141	98	97	6.7	87.865
OTHER COUNTRIES	40	4	2	3	9.6	103.470
TOTAL	1.648	145	100	100	6.8	88.244

Source: Turkish Statistics Department

PLASTICS EXTRUSION MACHINES SUPPLY & DEMAND EQUILIBRIUM:

The 60 % of the exports of plastics injection machines on a unit basis and 71 % on a value basis is made to 10 countries. Russian Fed. Algeria, Zambia, Bulgaria and Ethiopia have been the biggest markets to which Turkey has exported plastics injection machines in 9 months of 2015.

Sheet 12: Supply and Demand Equilibrium in Extrusion Machines (USD Million)

COUNTRIES	UNIT	\$ MILLION	UNIT SHARE %	\$ PAY %	AVERAGE PRICE \$ / KG	AVERAGE PRICE \$ / UNIT
RUSSIA	52	1.1	28	22	3.0	20.695
ALGERIA	10	0.5	5	10	7.6	50.682
ZAMBIA	6	0.5	3	10	7.3	79.125
BULGARIA	13	0.3	7	6	7.6	22.988
ETHIOPIA	3	0.2	2	5	5.1	79.832
KAZAKHSTAN	10	0.2	5	4	3.1	22.027
IRAQ	7	0.2	4	4	2.6	27.917
PAKISTAN	1	0.2	1	4	6.2	180.000
UZBEKISTAN	6	0.2	3	4	5.4	29.283
AUSTRIA	3	0.1	2	3	9.1	43.752
10 COUNTRIES TOTAL	111	3.5	60	71	4.4	31.520
OTHER COUNTRIES	75	1.5	40	29	3.7	19.335
TOTAL	186	5.0	100	100	4.2	26.606

Source: Turkish Statistics Department

PLASTICS EXTRUSION MACHINES SUPPLY & DEMAND EQUILIBRIUM

USD million 43 of production, USD million 91 of imports, USD million 21 of exports and USD million 113 of domestic sales (injection machines investment of plastics industry) were made in the plastics extrusion machines in the 9 months of 2015. In the same period, foreign trade deficit of extrusion machines realized as USD million of 70.

It can be observed that the 81 % of the domestic sales (injection machines investment of the industry) was met by imports, that the export coverage ratio of import was 23 % for the plastics extrusion machines in the same period.

Sheet 13: Supply and Demand Equilibrium in Extrusion Machines (USD Million)

MACHINERIES	2014	2014/9	2015/9	2015 (T)	9 M INCREASE (%) 2015 / 2014
PRODUCTION	59	48	43	57	-12
IMPORTS	174	129	91	122	-29
EXPORTS	30	24	21	28	-12
DOMESTIC SALES	203	153	113	150	-26
FOREIGN TRADE DEFICIT	-144	-105	-70	-93	-33
EXPORTS / PRODUCTION	50	50	50	50	
DOMESTIC SALES / IMPORTS (%)	85	84	81	81	
EXPORTS / IMPORTS (%)	17	19	23	23	

Source: Turkish Statistics Department

The 91 % of the imports of plastics extrusion machines on a unit basis and 96 % on a value basis made from 10 countries. The countries from which Turkey imports most are Germany, China and Italy.

Sheet 14: Extrusion Machines Imports By Countries (2015 - 9)

COUNTRIES	UNIT	\$ MILLION	UNIT SHARE %	\$ PAY %	AVERAGE PRICE \$/ KG	AVERAGE PRICE \$/ UNIT
GERMANY	408	35	51	38	29	86.253
CHINA	124	14	16	15	10	112.431
ITALY	80	13	10	14	28	158.985
JAPAN	39	5	5	5	44	124.943
THAILAND	15	5	2	5	28	312.631
SWISS	6	4	1	5	77	736.076
TAIWAN	38	3	5	3	12	82.796
AUSTRIA	10	3	1	3	24	313.105
NETHERLAND	2	3	0	3	64	1.434.889
S. KOREA	3	3	0	3	21	911.756
10 COUNTRIES TOTAL	725	88	91	96	22	120.982
OTHER COUNTRIES	73	4	9	4	13	50.597
TOTAL	798	91	100	100	22	114.544

Source: Turkish Statistics Department

PLASTICS EXTRUSION MACHINES SUPPLY & DEMAND EQUILIBRIUM

The 62 % of the exports of plastics extrusion machines on a unit basis and 69 % on a value destine to 10 countries. The countries to which exports of plastics extrusion machines is made the most are Russia, Iran and Uzbekistan in the 9 months of 2015.

Sheet 15: Extrusion
Machines Exports By
Countries
(2015 – 9)

COUNTRIES	UNIT	\$ MILLION	UNIT SHARE %	\$ PAY %	AVERAGE PRICE \$/ KG	AVERAGE PRICE \$/ UNIT
RUSSIA	54	3.8	14	18	12.6	69.578
IRAN	91	2.5	24	12	12.8	27.429
UZBEKISTAN	9	2.4	2	11	27.7	264.301
UAE	2	1.2	1	6	13.8	613.125
AZERBIJAN	8	1.1	2	5	11.7	131.995
MOROCCO	12	0.9	3	4	15.7	77.329
ALGERIA	19	0.8	5	4	7.9	43.516
TURKMENSTAN	9	0.8	2	4	18.2	83.819
KAZAKSTAN	20	0.7	5	3	15.5	35.756
GERMANY	11	0.6	3	3	6.3	53.136
10 COUNTRIES TOTAL	235	14.7	62	69	13.4	62.651
OTHER COUNTRIES	143	6.6	38	31	10.9	46.255
TOTAL	378	21.3	100	100	12.5	56.448

Source: Turkish Statistics
Department

BLOW MOULDING MACHINES SUPPLY & DEMAND EQUILIBRIUM

USD thousand of 500 of production, USD million 11, 9 of imports, USD thousand of 200 of exports and USD million 12, 2 of domestic market sales (blow moulding machines investment of plastics industry) were realized in the 9 months of 2015.

It can be observed that the 98 % of the domestic sales (blow moulding machines investment of the industry) was provided by imports, that the export coverage ratio of import was 2 % for blow moulding machines in the 9 months of 2015.

Sheet 16: Supply
and Demand
Equilibrium in Blow
Molding Machines
(USD Million)

MACHINERIES	2014	2014/9	2015/9	2015 (T)	9 M INCREASE (%) 2015 / 2014
PRODUCTION	0.8	0.8	0.5	0.6	-46
IMPORTS	14.3	9.9	11.9	15.9	20
EXPORTS	0.3	0.3	0.2	0.2	-46
DOMESTIC SALES	14.8	10.4	12.2	16.2	17
FOREIGN TRADE DEFICIT	-13.9	-9.6	-11.7	-15.6	22
EXPORTS / PRODUCTION	40	40	40	40	
DOMESTIC SALES / IMPORTS (%)	97	95	98	98	
EXPORTS / IMPORTS (%)	2	3	2	2	

Source: Turkish Statistics
Department

BLOW MOULDING MACHINES SUPPLY & DEMAND EQUILIBRIUM

The 97 % of the imports of blow molding machines on a unit basis and 99 % on a value basis made from 10 countries. The countries from which Turkey imports most are France, China and Italy.

Sheet 17: Blow Molding Machines Imports by Countries (2015 – 9)

COUNTRIES	UNIT	\$ MILLION	UNIT SHARE %	\$ UNIT %	AVERAGE PRICE % / KG	AVERAGE PRICE % / UNIT
FRANCE	8	4.4	12	37	46	552.349
CHINA	15	1.8	22	15	10	118.008
ITALY	10	1.3	15	11	12	132.396
GERMANY	9	1.2	13	10	12	134.603
DENMARK	2	0.9	3	7	52	437.183
JAPAN	5	0.8	7	7	16	154.667
INDIA	2	0.6	3	5	31	287.967
USA	13	0.6	19	5	25	44.174
TAIVAN	1	0.2	1	1	21	175.150
S.KOREA	1	0.1	1	1	6	93.150
10 COUNTRIES TOTAL	66	11.8	97	99	19	178.644
OTHER COUNTRIES	2	0.1	3	1	15	51.033
TOTAL	68	11.9	100	100	34	174.891

Source: Turkish Statistics Department

Turkey exported blow molding machines to 5 countries in the 9 months of 2015. Algeria shared the 9 % of total exports on unit base and 20 % on value base.

COUNTRIES	UNIT	\$ MILLION	UNIT SHARE %	\$ PAY %	AVERAGE PRICE \$ / KG	AVERAGE PRICE \$ / UNIT
FREE TRADE ZONE - ANTALYA	2	71.298	18,2	39,5	22,3	35.649
ALGERIA	1	35.400	9,1	19,6	9,5	35.400
FREE TRADE ZONE - KAYSERI	2	30.519	18,2	16,9	15,3	15.260
ENGLAND	1	22.000	9,1	12,2	5,8	22.000
ITALY	3	11.335	27,3	6,3	15,1	3.778
IRAN	1	7.280	9,1	4,0	23,5	7.280
MOROCCO	1	2.570	9,1	1,4	3,0	2.570
TOTAL	11	180.402	100	100	12,3	16.400

Source: Turkish Statistics Department

Sheet 18: Blow Molding Machines Exports by Countries (2015 – 9)

THERMOFORMING MACHINES

SUPPLY & DEMAND EQUILIBRIUM

USD million of 22 production, USD million 7 of imports, USD million of 9 exports and USD million 20 of domestic market sales (thermoform machines investment of plastics industry) were realized in the 9 months of 2015.

It can be observed that the 40 % of the domestic sales (thermoform machines investment of the industry) was provided by imports, that the export coverage ratio of import was 127 % for thermoforming machines in the 9 months of 2015.

Sheet 19: Supply and Demand Equilibrium in Thermoforming Machines (USD Million)

MACHINERIES	2014	2014/9	2015/9	2015 (T)	9 M INCREASE (%) 2015 / 2014
PRODUCTION	29	20	22	30	10
IMPORTS	12	10	7	9	-30
EXPORTS	12	8	9	12	10
DOMESTIC SALES	29	22	20	27	-8
FOREIGN TRADE DEFICIT	0	-2	2	3	-197
EXPORTS / PRODUCTION	40	40	40	40	
DOMESTIC SALES / IMPORTS (%)	41	45	34	34	
EXPORTS / IMPORTS (%)	98	81	127	127	

Source: Turkish Statistics Department

The 49 % of the imports of thermoforming machines on a unit basis and 99 % on a value basis made from 10 countries. The countries from which Turkey imports most are China, Germany and Italy.

Sheet 20: Thermoforming Machines Imports by Countries (2015 - 9)

COUNTRIES	UNIT	\$ MILLION	UNIT SHARE %	\$ PAY %	AVERAGE PRICE \$/ KG	AVERAGE PRICE \$/ UNIT
CHINA	224	2,1	37	30	9	9.479
GERMANY	23	1,4	4	21	21	62.814
ITALY	16	1,1	3	16	21	67.901
TAIWAN	10	0,9	2	13	8	91.890
THAILAND	1	0,4	0	5	12	380.000
DENMARK	19	0,4	3	5	40	19.719
HUNGARY	1	0,3	0	4	20	302.082
S.KOREA	2	0,2	0	3	5	97.850
USA	3	0,1	0	1	3	29.278
IRAN	1	0,0	0	1	11	41.949
10 COUNTRIES TOTAL	300	7,0	49	99	11	23.185
OTHER COUNTRIES	313	0,0	51	1	77	157
TOTAL	613	7,0	100	100	11	11.427

Source: Turkish Statistics Department

THERMOFORMING MACHINES SUPPLY & DEMAND EQUILIBRIUM

The 16 % of the exports of thermoforming machines on a unit basis and 59 % on a value destined to 10 countries. The countries to which exports of thermoforming machines is made the most are Germany, S. Africa, and UAE in the 9 months of 2015.

Sheet 21:
Thermoforming
Machines Exports by
Countries
(2015 -9)

COUNTRIES	UNIT	1000 \$	UNIT SHARE %	\$ PAY %	AVERAGE PRICE \$ / KG	AVERAGE PRICE \$ / UNIT
GERMANY	2	789	2	9	26	394.691
S.AFRICA	5	763	4	9	24	152.604
UAE	3	518	2	6	25	172.830
USA	1	508	1	6	30	507.689
POLAND	1	499	1	6	31	498.945
PORTUGAL	1	473	1	5	29	473.402
OMAN	5	431	4	5	27	86.151
ENGLAND	1	429	1	5	28	429.018
GUATEMALA	1	423	1	5	27	423.139
AUSTRALIA	1	408	1	5	26	407.868
10 COUNTRIES TOTAL	21	5.242	16	59	27	249.605
OTHER COUNTRIES	108	3.659	84	41	17	33.881
TOTAL	129	8.901	100	100	21	68.999

Source: Turkish Statistics
Department

PRESSES AND OTHER MACHINES SUPPLY & DEMAND EQUILIBRIUM

USD million of 109 production, USD million 45 of imports, USD million of 44 exports and USD million 111 of domestic market sales (presses and other machines investment of plastics industry) were realized in the 9 months of 2015.

It can be observed that the 42 % of the domestic sales (thermoform machines investment of the industry) was provided by imports, that the export coverage ratio of import was 977 % for presses and other machines in the 9 months of 2015.

Sheet 22: Supply and Demand Equilibrium in Presses and Other Machines (2015 / 9)

MACHINERIES	2014	2014/9	2015/9	2015 (T)	9 M INCREASE (%) 2015 / 2014
PRODUCTION	159	115	109	146	-5
IMPORTS	61	50	45	60	-9
EXPORTS	64	46	44	58	-5
DOMESTIC SALES	156	119	111	148	-6
FOREIGN TRADE DEFICIT	2	-4	-2	-2	-60
EXPORTS / PRODUCTION	40	40	40	40	
DOMESTIC SALES / IMPORTS (%)	39	42	41	41	
EXPORTS / IMPORTS (%)	104	92	97	97	

Source: Turkish Statistics Department

The 89 % of the imports of presses and other machines on a unit and value basis from 10 countries. The countries from which Turkey imports most are Germany, China and Italy.

Sheet 23: Presses and Other Machines Imports by Countries (2015 - 9)

COUNTRIES	UNIT	\$ MILLION	UNIT SHARE %	\$ PAY %	AVERAGE PRICE \$/ KG	AVERAGE PRICE \$/ UNIT
GERMANY	247	36	9	25	26	143.875
CHINA	1.367	27	51	19	8	19.896
ITALY	537	25	20	18	20	46.319
TAIWAN	49	8	2	5	16	156.056
USA	109	7	4	5	37	62.350
S.KOREA	14	7	1	5	30	474.826
AUSTRIA	15	5	1	4	28	356.962
THAILAND	6	5	0	4	17	846.001
DENMARK	0	4	0	3	52	29.278
JAPAN	29	3	1	2	45	106.121
10 COUNTRIES TOTAL	2.373	127	89	89	16	53.314
OTHER COUNTRIES	282	15	11	11	17	53.055
TOTAL	2.655	142	100	100	16	53.286

Source: Turkish Statistics Department

PRESSES AND OTHER MACHINES SUPPLY & DEMAND EQUILIBRIUM

The 33 % of the exports of presses and other machines on a unit basis and 49 % on a value destine to 10 countries. The countries to which exports of presses and other machines is made the most are Belarus, Iran and Romania.

Sheet 24: Presses
and Other Machines
Exports by Countries
(2015 – 9)

COUNTRIES	UNIT	\$ MILLION	UNIT SHARE %	\$ PAY %	AVERAGE PRICE \$/ KG	AVERAGE PRICE \$/ UNIT
BELARUS	13	3,6	1	8	10	278.805
IRAN	105	3,5	9	8	9	33.559
ROMANIA	37	3,3	3	8	17	90.336
S. ARABIA	21	2,6	2	6	15	122.248
RUSSIA	63	2,1	5	5	10	32.949
BULGARIA	38	1,8	3	4	15	46.717
POLAND	13	1,2	1	3	23	95.041
USA	17	1,2	1	3	19	71.489
IRAQ	43	1,1	4	3	7	25.581
KAZAKHSTAN	36	1,1	3	2	12	30.369
10 COUNTRIES TOTAL	386	21,6	33	49	12	55.837
OTHER COUNTRIES	801	22,2	67	51	11	27.736
TOTAL	1.187	43,8	100	100	12	36.874

Source: Turkish Statistics
Department

ACCESSORIES & PARTS SUPPLY AND DEMAND EQUILIBRIUM

USD million 60 of production, USD million 30 of imports, USD million 15 of exports and USD million 76 of domestic market sales (accessories investment of plastics industry) were realized in the 9 months of 2015.

It can be observed that the 40 % of the domestic sales (accessories investment of the industry) was provided by imports, that the export coverage ratio of import was 49 % in the nine months of 2015.

Sheet 25: Supply and Demand Equilibrium in Parts and Components (USD Million)

MACHINERIES	2014	2014/9	2015/9	2015 (T)	
PRODUCTION	92	68	60	80	-12
IMPORTS	47	33	30	41	-6
EXPORTS	23	17	15	20	-12
DOMESTIC SALES	116	84	76	101	-10
FOREIGN TRADE DEFICIT	-24	-16	-15	-21	-1
EXPORTS / PRODUCTION	25	25	25	25	
DOMESTIC SALES / IMPORTS (%)	40	39	40	40	
EXPORTS / IMPORTS (%)	49	52	49	49	

Source: Turkish Statistics Department

The 88 % of the imports of parts and components on a unit base and 90 % on value base were realized from 10 countries. The countries from which Turkey imports most are Germany, China and Italy.

Sheet 26: Parts and Components Imports by Countries (2015 -9)

COUNTRIES	UNIT	\$ MILLION	UNIT SHARE %	\$ PAY %	AVERAGE PRICE \$ / KG
GERMANY	176	11	14	30	60,7
CHINA	667	7	55	19	10,2
ITALY	86	5	7	14	59,8
USA	17	2	1	6	121,0
AUSTRIA	44	2	4	5	43,0
SWISS	9	2	1	5	179,3
JAPAN	23	2	2	5	70,1
FRANCE	13	1	1	3	72,8
CANADA	2	1	0	2	411,4
TAIVAN	37	1	3	2	17,0
10 COUNTRIES TOTAL	1.074	32	88	90	29,9
OTHER COUNTRIES	146	3	12	10	23,4
TOTAL	1.220	35	100	100	29,2

Source: Turkish Statistics Department

ACCESSORIES AND PARTS SUPPLY AND DEMAND EQUILIBRIUM

The 66 % of the exports of parts and components on a unit basis and 53 % on a value destined to 10 countries. The countries to which exports of parts and components are made the most are Germany, Belarus and Bulgaria.

Sheet 27: Parts and
Components Exports
by Countries
(2015 -9)

COUNTRIES	UNIT	\$ MILLION	TON PAY %	\$ PAY %	AVERAGE PRICE \$/ KG
GERMANY	312	2,9	20	19	9,3
FREE TRADE ZONE - ÇORLU	162	0,9	10	6	5,6
BELARUS	50	0,8	3	5	16,0
BULGARIA	126	0,7	8	5	5,9
SWEDEN	237	0,7	15	5	2,9
IRAQ	37	0,5	2	3	13,7
ALGERIA	44	0,4	3	3	9,8
IRAN	19	0,4	1	2	19,0
SWISS	21	0,3	1	2	15,3
MOROCCO	15	0,3	1	2	20,4
10 COUNTRIES TOTAL	1.022	8,0	66	53	7,8
OTHER COUNTRIES	520	7,0	34	47	13,6
TOTAL	1.542	15,0	100	100	9,7

Source: Turkish Statistics
Department

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RESULT:

While the number of companies which manufacture plastics and rubber machines and their accessories and parts is around 3.700 in EU countries, there are over 800 companies in Turkey which causes for the manufacture and turnover ratio per company to drop. The developments in the plastics processing machines and their accessories and parts industry, despite significantly developing the plastics industry and the propensity to invest following the similar pattern, is under constant pressure of the cheap imports conducted in China and Far Eastern countries. Imports receives a higher margin in sharing the increasing demand.

Turkey is a net importer country in the foreign trade of plastics processing machines and their accessories and parts and while exporting machines with comparatively low added value, it imports expensive machines.

The principle strategies for Turkish plastics processing machines industry to produce and export machines with higher added value could be as listed below:

- ✿ To increase competitive production opportunities in the global markets by enhancing the technological level of the industry.

- ✿ To turn the traditional machine product structure of the industry into a structure in which machines with higher added value are manufactured and to increase the manufacture and added value of the industry by pulling away the foreign capital investments.

- ✿ To establish large scaled injection and extrusion machines producers in the industry which will create a brand in the global markets and to organize the other companies as subsidiary industry companies which manufacture accessories and parts for the said companies and global machine manufacturers,

- ✿ To increase the productivity of the industry and to develop and to spread the aggregation activities in order to establish synergy.

- ✿ To establish the training infrastructure of the industry in order to meet the need for trained intermediate staff.

- ✿ To increase the support provided for industry oriented R&D, Product Development and innovation,
Informal production and unfair competition must be prevented.

- ✿ Apart from the growth rate of the plastics industry, the positive / negative developments in the foreign markets will also have a direct effect on the plastics processing machines industry.

✿ On the aforementioned matter, it should assign tasks to industrial unions outside of government agencies on matters such as searching for potential foreign markets and expansion of companies to such markets. Branches should be established and road show and bilateral meetings should be organized in potential foreign markets by industrial unions with the intention of advertisement and marketing.

✿ While companies which make sizable factory investments can purchase machines of 5 year term with various and advantageous credits, our country is left with single machine orders with low prices. As there are no discounts made due to the size of the order, these orders are lost to countries such as China – Taiwan. A credit system similar to Hermes in Germany must be established in Turkey and Exim Bank credits must be turned into resources to which machine manufacturing SMEs can easily access in order to develop the exports of machines. Credit must be provided to small and medium sized enterprises abroad by Exim bank and these enterprises should be encouraged to import from Turkey.

✿ Rate and term guarantees should be provided to exporters in long term export sales.

✿ The plastics processing machines industry must produce machines with higher added value and competition level in global markets. However, there are a great number of plastics processing machine and accessories and parts manufacturers in Turkey and the production capacity and capacity output per company are very low, below the economic scales. For that reason, inter-enterprise mergers or strategical cooperation concerning R&D (common R&D centers) must be established in order for the small companies to achieve the power to conduct R&D.

✿ Turkey can set up the necessary incentive substructure for global machine manufacturers to invest in Turkey by using its cheap and qualified manpower and experience in machine manufacturing and special incentives can be provided to the global players for their investments on plastics processing machines in Turkey. Turkey could be turned into a production and exports base for at least some of the plastics processing machines with the incentive substructure which is to be applied in the said manner.

✿ In this day and age the manufacturing of machines which provide added value requires great R&D expenditures. It is difficult for the domestic machine manufacturers, all of which are at SME level, to make such R&D expenditures and reach the technological level used by the Western countries in manufacturing due to their financial in capabilities. For that reason, rather than main machine production in Turkey, the manufacture of accessory and parts of these machines at the required quality level and entering into supply system of the global players of our industry and Turkey becoming the manufacture and exports base for plastics processing machine accessories and parts could be the second strategy to pursue.

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