



**PAGEV**

# **TURKISH PLASTICS INDUSTRY FOLLOW-UP REPORT 2017**







## PREFACE

The plastic industry is one of the most important actors of the Turkish economy. Today, the contribution of the plastics industry to the country's economy is gradually increasing with the total production exceeding 9 million tons, and 35 billion dollars worth of turnover, the approaching direct exports of 5 billion dollars and the annual growth of 12% for the last 10 years.

Our industry, with its production capacity, has reached the second place in Europe and the sixth place in the world. As PAGEV, we continue to lead the industry successfully in the framework of the "Connecting Power" mission of the Turkish Plastics Industry.

We also know that having the right and reliable data and information is the most important part of the solution when we sign the indispensability of Plastics in our lives and sign our work to tackle our industrial problems with concrete steps based on scientific evidence. In this direction we constantly investigate, collect new data, compile and report them. We present our reports that we believe are important for the development of our industry and our booklets containing important information to the plastics industry representatives, stakeholders and public institutions.

As PAGEV, we prepared a report set that will contribute to the industry in a serious way in the face of our long and dedicated researches. With our reports, we made booklets with the comments of our expert reporters about the point where the Turkish Plastics Industry is in the right and reliable light, common problems and what should be the search for concrete solutions. We believe that our reports and information set will benefit all of our stakeholders, especially our members, and will guide the plastics world. At the same time, we are pleased that our public institutions have reached the most up-to-date and accurate information about the plastics industry.

On the other hand, with our sector reports in English, we think that our colleagues will be able to share the potential of our country's plastics industry with the most up-to-date business partners in the global marketplace.

Hereby, presenting our current reports and information files relating with our industry, we would like to thank all of our colleagues who have contributed to this day's achievement of our industry, who has taken a position as a locomotive mission in the development of our country.

**Best regards,  
Yavuz EROGLU  
PAGEV President**

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## – EXECUTIVE SUMMARY –

The World Bank reported in its Global Economic Expectations report that the recent recovery in global economic activity has been preserved along with the fragility. The organization predicted that global growth will be 2.7% this year. The World Bank has increased its growth forecast for developed countries by 0.1 percentage points for 2017 and has lowered its growth forecast for emerging countries by 0.1 percentage points. The report has considered the global inflation expectation to be high compared to 2016, with weakness in the recent period being positive.

The Turkish economy grew by 5.2% in the first quarter of 2017 and by 5.1% in the second quarter. This supported the expectation of optimistic growth for the whole of 2017 on the market. Although the growth rate in the first and second quarters exceeded the forecasts, it remained below the 2010-2016 period average.

Considering the 9 months realizations of 2017, at the end of the year on amount basis; It is expected that production will increase by 9.4% imports by 5.2% exports by 3.1%, domestic consumption by 10.3% and foreign trade surplus by 1.8%. The share of exports in production is expected to decrease from 17% to 16% and the share of imports in domestic consumption with 7% will stay at the same amounts. Ratio of exports to imports will increase from 263% to 258%.

Developments show that the world and the Turkish economy will live a brilliant year in 2017. It is expected that the old risk elements will continue in the economy and the new ones will be added to these. It is therefore estimated that the uncertainty to be raised will often lead to the use of risqué escape and a cautious source and that the question of not growing in the world economy will continue.

Considering the economic growth estimated at 5% in 2018 and the 14 year average correlation coefficient of the industry, it is estimated that the plastics industry will grow by around 5% in 2018. However, in the world economy, and especially in Turkey's export markets, if the developments are more negative, it is possible that the growth of the plastic sector will be shaped at lower levels.

# 1. ECONOMIC SITUATION

## 1.1. WORLD ECONOMY

- ▶ The growing political tension between the USA and North Korea caused September's global risk perception to deteriorate and pressures on the markets.
- ▶ Since the Fed did not change interest rates at the meeting held on September 19-20, the expectation that a new interest rate increase will be made in 2017 has increased dollar value.
- ▶ A mixed picture of the employment market in the USA and the third quarter on economic activity.
- ▶ The European Central Bank (ECB) has not changed its forecasts for growth for 2018 and 2019, while the growth forecast for 2017 has increased by 0.3 percentage points to 2.2%.
- ▶ The formation of an ambiguous statement on the coalition government in Germany left the euro under pressure.
- ▶ In the second quarter of 2017, the fact that the recently announced economic data failed to meet expectations after the announced economic growth of 6.9% in China increased the uncertainties about the third quarter of the year and led to comments that the country's economy was performing below expectations. The reason is that the strong credit growth that has continued in China for a long time has increased the economic and financial risks of the country.
- ▶ The World Bank reported in its Global Economic Expectations Report that the recent recovery in global economic activity has maintained its vulnerability with fragility. The organization predicted that this year's global growth will be 2.7%. The World Bank has increased its growth forecast for developed countries by 0.1 percentage points for 2017 and decreased its growth forecast for emerging countries by 0.1 percentage points. Report has considered the high level of global inflation expectations to be higher than in 2016, with weakening in the recent period.
- ▶ The OECD revised its global growth forecast from 3.5% to 3.3%. In the first half of the year, OECD has grown more than 5% in the first half of the year, with the expectation that the Turkish economy will grow by 3.4% and 3.5% in 2017 and 2018 respectively. The organization states that the economic measures taken in Turkey and the increase in export demand support consumption and investments.

Generally speaking, while some factors that drag down the global economic growth from the year 2015 are expected to continue in the last quarter of 2017, the main objective is to ensure the sustainability of the global growth in 2017.

Rising and developing economies face tough conditions and geopolitical tensions are increasing the challenges of the global economy. There are three main factors that will affect the global economy in 2017: The FED's interest rate cuts, the Chinese economy's movement and unstable commodity prices.

Machinery Group	2017	% Increase
World	2.7	2.9
Developed Countries	1.9	1.8
USA	2.1	2.2
Euro Zone	1.7	1.5
Japan	1.5	1.0
Developing Countries	4.1	4.5
China	6.5	6.3
Turkey	3.5	3.9
World Trade Volume	4.0	3.8

**Table 1: World Bank Growth Estimates (%)**  
Source: World Bank

# 1. ECONOMIC SITUATION

## 1.2. TURKISH ECONOMY

In this period, the main developments that affect and are expected to affect the Turkish economy and therefore the plastics industry are;

- Turkey's economy grew at a rate close to expectations with 5.1% in the second quarter of the year due to the revival in domestic consumption and the measures taken by the government. The first quarter growth, previously announced at 5%, was also revised to 5.2%. Thus, in the first half of the year the economy grew by 5.1% on a yearly basis. The growth rate in the second quarter of the year was realized above the average of the last three years as of the second quarter. However, this figure was below the average growth rate of 8.6% recorded in the second quarter of 2010-2013.
- GDP, which was \$ 863 billion in 2016, was \$ 834 billion as of the second quarter of this year, the sum of the last four quarters. In the same period, national income per capita also decreased from \$ 10,883 to \$ 10,500 due to the increase in \$/TL.
- Investment expenditures in the second quarter made the highest
- Private consumption expenditures continued to support economic activity in the second quarter of the year. On the other hand, contrary to the first quarter, public consumption expenditures, which had a significant share in the revival of the economy in the recent period, have had a narrowing effect on growth in the second quarter.

- In the second quarter of 2017, with the continuing trend of recovery in the tourism sector, it seems that the services sector supports the growth to a significant extent. The industrial sector, on the other hand, sustained growth in the second quarter of the year.
- In July, the industrial production index increased by 14.5% year on year and recorded the fastest increase since January 2011. In July, industrial production rose by 2.3% month on month.
- Unemployment rate realized at 10.7% in July period.
- The enlargement of foreign trade is ongoing. According to temporary foreign trade data, exports increased by 8.7 percent to \$ 11 billion 848 million and imports increased by 30.6 percent to \$ 19 billion 982 million in September 2017. In September, foreign trade deficit increased by 85% to 8 billion 135 million dollars.
- During this period, the share of manufacturing industry products in total exports has been 93.3%. The share of high technology products in manufacturing industry exports was 3.9% and the share of medium high technology products was 35.6%.
- The share of manufacturing industry products in total imports is 82.3%. In September 2017, the share of high-tech products in imports of manufacturing industry products was 14.6%, while the share of tmedium-high-tech products was 40.9%.
- According to the Medium Term Program for the period 2018-2020, it is predicted that the Turkish economy will grow by 5.5% every year during the period of 2018-2020.

	2017(E)	2018	2019	2020
Growth Rate (%)	5.5	5.5	5.5	5.5
GDP (USD Billion)	847	923	988	1,074
Per Capita GDP (\$)	10,579	11,409	12,100	13,024
Exports (USD Billion)	157	169	182	195
Imports (USD Billion)	222	237	253	272
Current Balance/GDP (%)	4,6	4,3	4,1	3,9
Umemployment (%)	10,8	10,5	9,9	9,6
Inflation (%)	9,5	7	6	5
USD/TL	3,58	3,73	3,92	4,02
Budget Balance/GDP (%)	2	1,9	1,9	1,6
Debt Stock/GDP (%)	28.5	28.5	28	27.5

**Table 2: Medium Term Program Estimates**

Source: Ministry of Economics

## 1. ECONOMIC SITUATION

In general, it is understood that economic growth in the period of 2018-2019 will be a preliminary plan for economic growth with the support of fiscal policies, and the outflow from expansionary fiscal policies is predicted by 2020.

After the first half of the year, economic activity is expected to show a strong picture in the third quarter. It is estimated that the growth of the Turkish economy in 2017 will be close to 5% and close to the long-term average. In contrast to the increased geopolitical risks, the course of the TL and the growth trend in global trade are expected to support the export, while the rise in oil prices and the recovery in economic activity are expected to continue the upward pressure on imports.

Developments show that the world and the Turkish economy will live a brilliant year in 2017. It is expected that the old risk elements will continue in the economy and the new ones will be added to these. It is therefore estimated that the uncertainty to be raised will often lead to the use of risqué escape and a cautious Source, and that the question of not growing in the world economy will continue.

(Source: T. İŞ Bank and Akbank Economic Publications, Ministry of Development, Turk Stat & ITC Statistics)

		2014	2015	2016	2017
GDP	Billion \$	Billion \$	861	857	173.8 (I Q)
Growth Rate	%	%	6.1	2.9	5.1 (II Q)
Inflation	%	%	8.8	8.53	11.20 (September)
Producer's Price Index	%	%	5.7	9.94	16.28 (September)
Unemployment	%	%	10.3	12.0	11.1 (September)
Exports	Billion \$	Billion \$	143.9	142.6	115 (September)
Imports	Billion \$	Billion \$	207.2	198.6	168.9 (September)
Foreign Trade Balance	Billion \$	Billion \$	-63.3	-56.0	-53.8 (September)
Exports/Imports	%	%	69.5	71.8	68.1 (September)
Current Balance/GDP	%	%	- 3.7	- 3.8	
Budget Balance/GDP	%	%	-1.0	- 1.1	
Total Debt Stock	Billion \$	Billion \$	612.1	677.6	820.5 (September)
USD/TL	TL	TL	2.9207	2.9207	3.5561 (September)
EURO/TL	TL	TL	3.1867	3.1867	4.2040 (September)

**Table 3: Turkey's Main Economic Indicators**

Source: Turk Stat, Ministry of Economy, under secretariat of Treasury, Central Bank Turkey

## 2. PLASTICS END PRODUCTS INDUSTRY

### 2.1. PRODUCTION

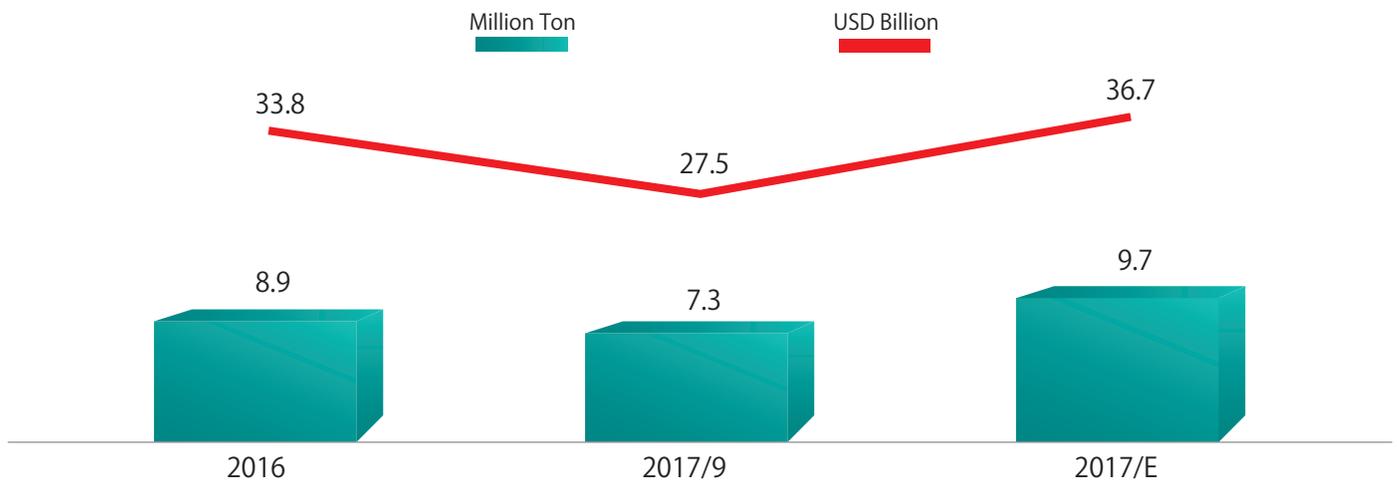
As of the end of September 2017, 7.3 million tons and 27.5 billion dollars of plastic products have been produced. With the same trend, production is expected to reach 9.7 million tons and 36.5 billion dollars at the

end of 2017, respectively. In this case, it is estimated that the total production of plastic products in 2017 will increase by 9.4% on quantity and by 8.5% on value basis, with respect to 2016.

	2016	2017/9	2017/E	Increase (E) (2017/2016)
1000 Ton	8.9	7.3	9.7	9.4
USD Million	33.8	27.5	36.7	8.5

**Table 4: Plastics End Products Production**

Source: Turk Stat & ITC Trade Statistics



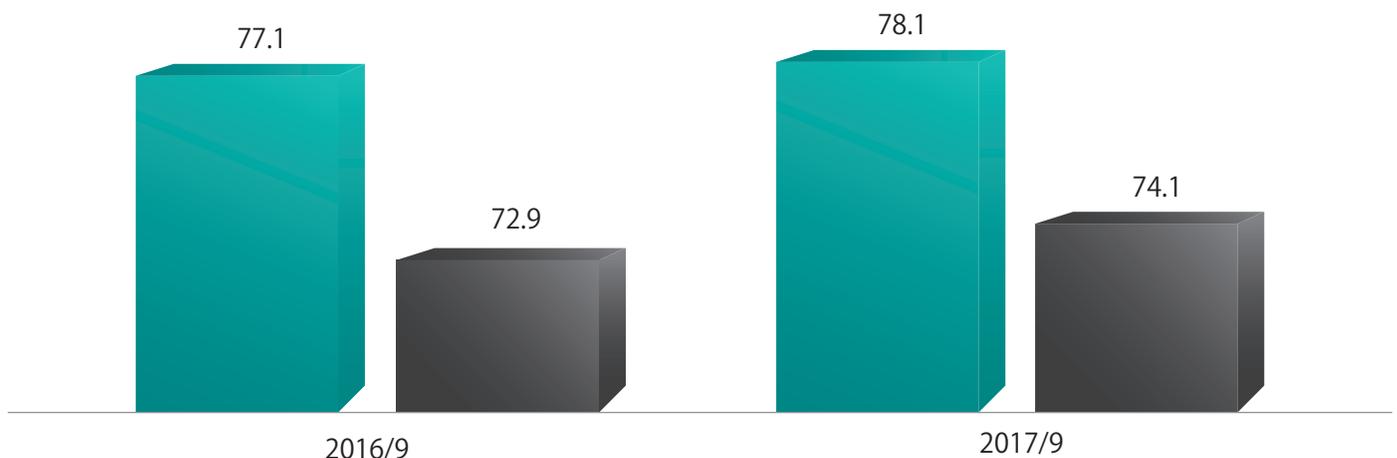
**Graphic 1: Plastics End Products Production**

Source: Turk Stat & ITC Trade Statistics

### 2.2. CAPACITY UTILIZATION

The average capacity utilization rate in the plastics industry in January – September period of 2017 was

74.8%, which is 1% below the average capacity utilization of the general manufacturing industry by 78.1%.



**Graphic 2: Capacity Utilization in Plastics Industry (%)**

Source: Turk Stat & ITC Trade Statistics

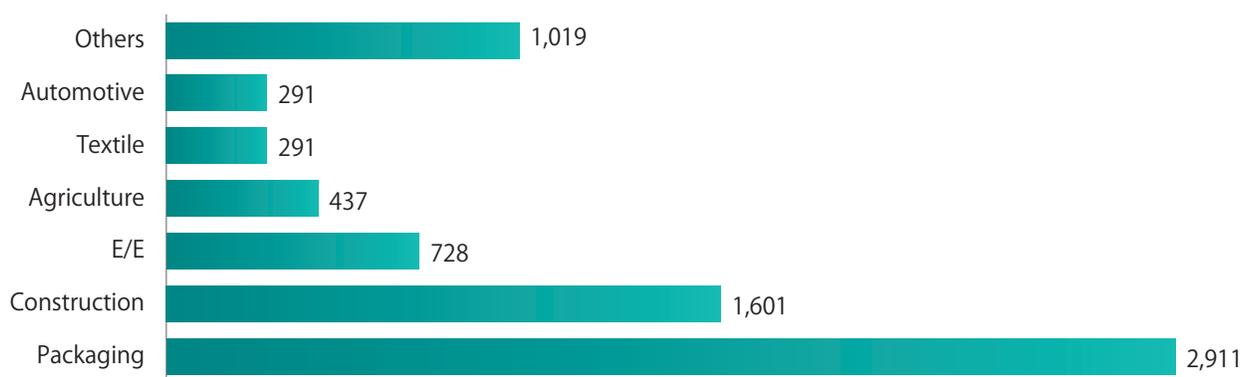


## 2. PLASTICS END PRODUCTS INDUSTRY

### 2.3. PRODUCTION BY INDUSTRIES

As of the end of September 2017, it is seen that the production of plastic packaging materials realized as 2 million 911 thousand tons and it was followed by

the plastic construction materials with 1 million 601 thousand tons in total plastic products production of 7.3 million tons.

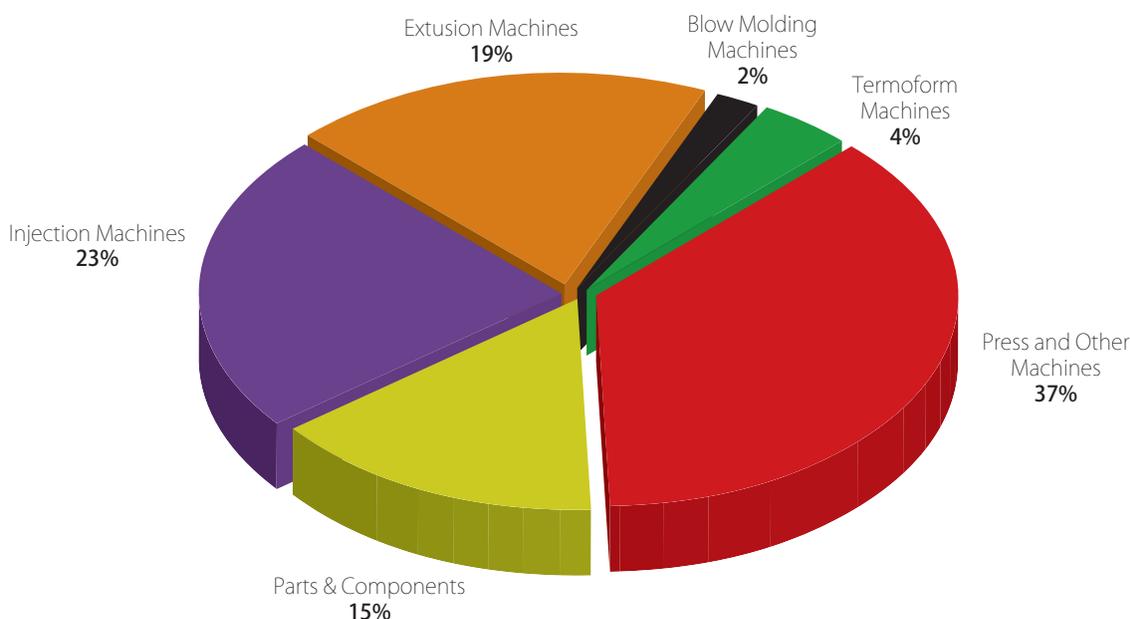


Graphic 3: Production by Subsectors– 2017/9 (1000 Ton)

### 2.4. MACHINERY INVESTMENTS

In the period of 2012-2016, an average of 821 million dollars of machinery and equipment investment has been realized in plastics industry, 37% of total investment is made by presses and other machines, 23% by

injection, 19% by extrusion, 4% by thermoform, 2 of them were blow molding and 15% were parts and parts.



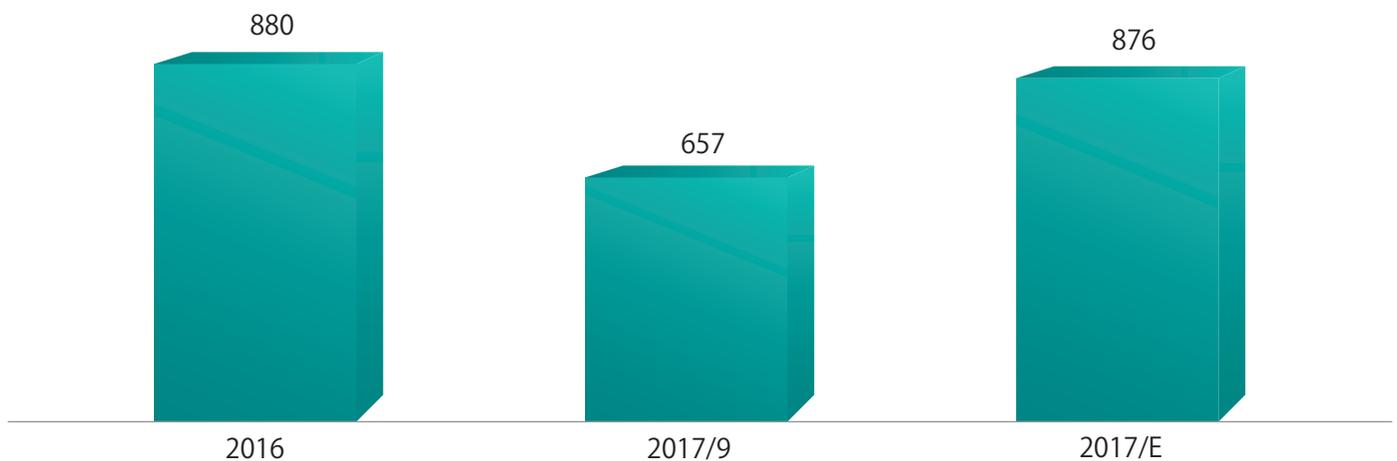
Graphic 4: Total Machinery Investments of Plastics Industry in 2012 – 2016 Period

Source: Turk Stat & ITC Trade Statistics

## 2. PLASTICS END PRODUCTS INDUSTRY

Machinery investments in the plastics industry amounted to USD 657 million in January – September period of 2017. With the same trend, it is estimated that the

machinery and equipment investment of the industry will be 876 million dollars at the end of 2017 and will increase by 0.09% compared to 2016.

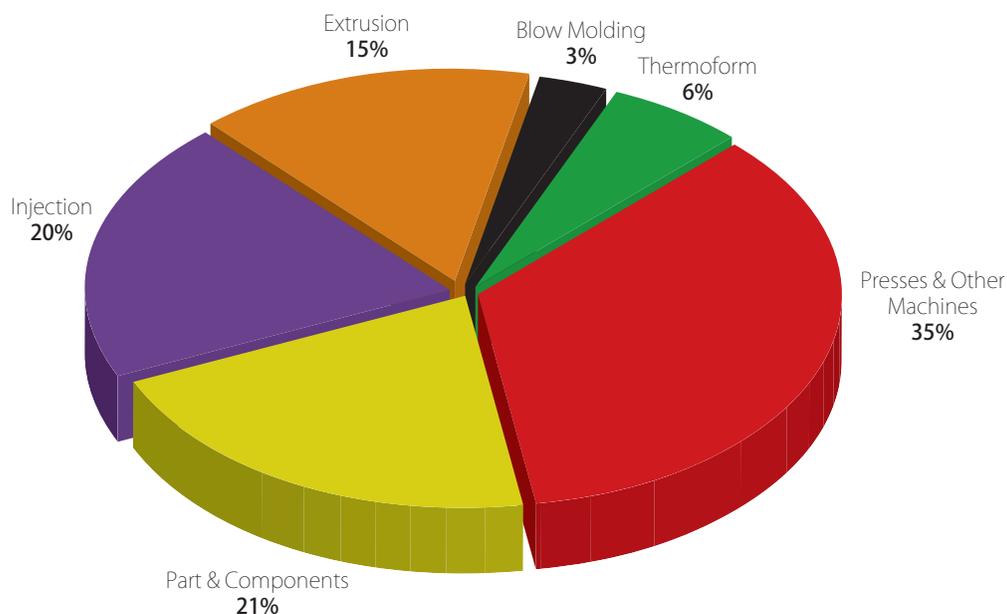


**Graphic 5: Machinery and Equipment Investments of Plastics Industry (USD Million)**

Source: Turk Stat & ITC Trade Statistics

By the end of September 2017, 35% of the total investment of \$ 657 million in the industry was made by presses and other presses, 20% by injection machines, 15% by extrusion machines and 22% by parts and components.

Thermoforming and blow molding machines accounted for 3% and 4% share of total investment respectively.



**Graphic 6: Machinery and Equipment Investments of Plastics Industry (2017/9)**

Source: Turk Stat & ITC Trade Statistics

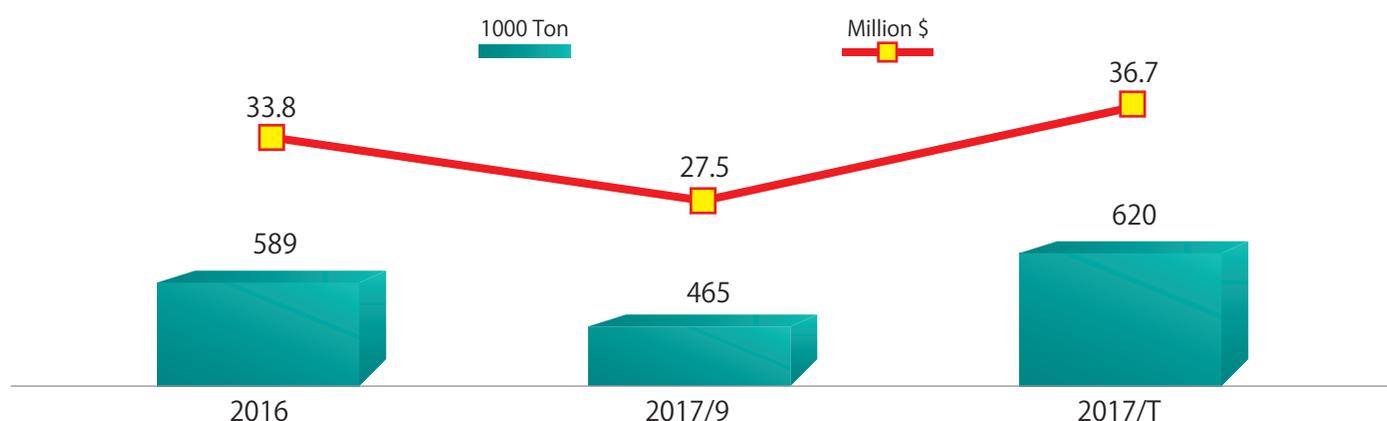
## 2. PLASTICS END PRODUCTS INDUSTRY

### 2.5. FOREIGN TRADE

#### 2.5.1. IMPORTS

By the end of September 2017, 465 thousand tons and 2 billion 287 million dollars of plastic end products were imported. With the same trend, it is estimated that the total imports of plastic end products will reach 620

thousand tons and 3 billion 049 million dollars at the end of 2017, increasing by 5.2% on amount and 4.1% on value basis compared to 2016.



**Graphic 7: Plastics End Products Imports**

Source: Turk Stat & ITC Trade Statistics

By the end of September of 2017, the highest imports by volume and value basis were realized in the end product group of 3920 GTIP (other plates, sheets, pellets, foils and slides from plastic).

The imports of this group accounted for 44% on amount and 32% on value basis of total imports.

HS CODE	PLASTIC PRODUCTS DEFINATIONS	2016	2017/9	2017/E	% Increase 2017/2016 (E)
3916	Monofilament, bar, profiles from plastic-cross section over 1mm	14	9	12	-9.5
3917	Tubes, pipes, hoses from plastic; gasket, elbow, union etc.	26	21	27	4.5
3918	Floor coverings from plastic – incl. wall and ceiling coverings	22	19	25	10.9
3919	adhesive plate, sheet, strip, slide, etc. from plastic; flat	58	46	61	5.8
3920	Other plate, sheet, pellicles and slides from plastic	249	203	271	8.7
3921	Other plates, sheets, pellicles, foils and slides from plastic	64	52	70	9.3
3922	Bathtub, shower, sink, bidet, water-closet pan and hardware from plastic	4	3	5	2.3
3923	Plastic products for moving furniture, tap, cap, capsule	61	48	64	4.9
3924	Table, kitchen and other household furniture, toiletry form plastic	11	7	9	-14.0
3925	Construction materials from plastic	10	6	9	-17.0
3926	Other goods from plastic	71	51	68	-3.2
	TOTAL	589	465	620	5.2

**Table 5: Plastics End Products Imports by HS Codes (1000 Ton)**

Source: Turk Stat & ITC Trade Statistics

## 2. PLASTICS END PRODUCTS INDUSTRY

HS CODE	PLASTIC PRODUCTS DEFINATIONS	2016	2017/9	2017/E	% Increase 2017/2016 (E)
3916	Monofilament, bar, profiles from plastic-cross section over 1mm	57	42	56	-2.1
3917	Tubes, pipes, hoses from plastic; gasket, elbow, union etc.	209	173	231	10.3
3918	Floor coverings from plastic – incl. wall and ceiling coverings	89	67	90	1.5
3919	adhesive plate, sheet, strip, slide, etc. from plastic; flat	331	249	331	0.1
3920	Other plate, sheet, pellicles and slides from plastic	907	733	978	7.8
3921	Other plates, sheets, pellicles, foils and slides from plastic	250	197	263	5.4
3922	Bathtub, shower, sink, bidet, water-closet pan and hardware from plastic	42	33	44	6.4
3923	Plastic products for moving furniture, tap, cap, capsule	269	213	284	5.5
3924	Table, kitchen and other household furniture, toiletry form plastic	68	45	60	-11.6
3925	Construction materials from plastic	39	28	37	-5.2
3926	Other goods from plastic	668	506	674	1.0
	TOTAL	2,928	2,287	3,049	4.1

**Table 6: Plastics End Products Imports by HS Codes (USD Million)**

Source: Turk Stat & ITC Trade Statistics

### 2.5.2. IMPORTS BY COUNTRIES

Every year, Turkey imports plastic end products from more than 100 countries. By the end of September 2017, imports from 10 countries accounted for 71% of the total imports on amount and 74% on value basis.

Since 2014, China has been the 1st biggest import partner of Turkey in plastics end products imports.

By the end of September 2017, China's total imports of plastic products accounted for 26.4% on a ton basis and 20% on a value basis.

Apart from these two countries, Italy, South Korea and France seem to have preserved the position of the countries in which we import the largest plastic products.

Countries	2016				2017/9				
	1000 Ton	USD Million	Ton - %	\$ - %	Countries	1000 Ton	USD Million	Ton - %	\$ - %
China	157	602	26.6	20.6	China	122.8	456.3	26.4	20.0
Germany	94	547	15.9	18.7	Germany	68.6	400.5	14.7	17.5
Italy	52	252	8.7	8.6	Italy	40.0	198.5	8.6	8.7
S. Korea	35	212	5.9	7.2	S. Korea	29.6	170.7	6.4	7.5
France	28	185	4.8	6.3	France	20.7	136.7	4.4	6.0
USA	13	128	2.2	4.4	USA	9.7	92.7	2.1	4.1
UK	12	96	2.1	3.3	UK	11.1	78.3	2.4	3.4
Belgium	15	70	2.5	2.4	Belgium	12.3	54.9	2.6	2.4
Japan	5	66	0.9	2.2	Spain	10.4	54.2	2.2	2.4
Spain	11	60	1.9	2.0	Japan	4.5	52.9	1.0	2.3
<b>Total 10</b>	<b>422</b>	<b>2,219</b>	<b>71.6</b>	<b>7.8</b>	<b>Total 10</b>	<b>329.7</b>	<b>1,695.7</b>	<b>70.9</b>	<b>74.2</b>
<b>Others</b>	<b>168</b>	<b>710</b>	<b>28.4</b>	<b>24.2</b>	<b>Others</b>	<b>135.5</b>	<b>590.9</b>	<b>29.1</b>	<b>25.8</b>
<b>TOTAL</b>	<b>589</b>	<b>2,928</b>	<b>100.0</b>	<b>100.0</b>	<b>TOTAL</b>	<b>465.2</b>	<b>2,286.6</b>	<b>100.0</b>	<b>100.0</b>

**Table 7: Plastics End Products Imports by the Main 10 Countries**

Source: Turk Stat & ITC Trade Statistics

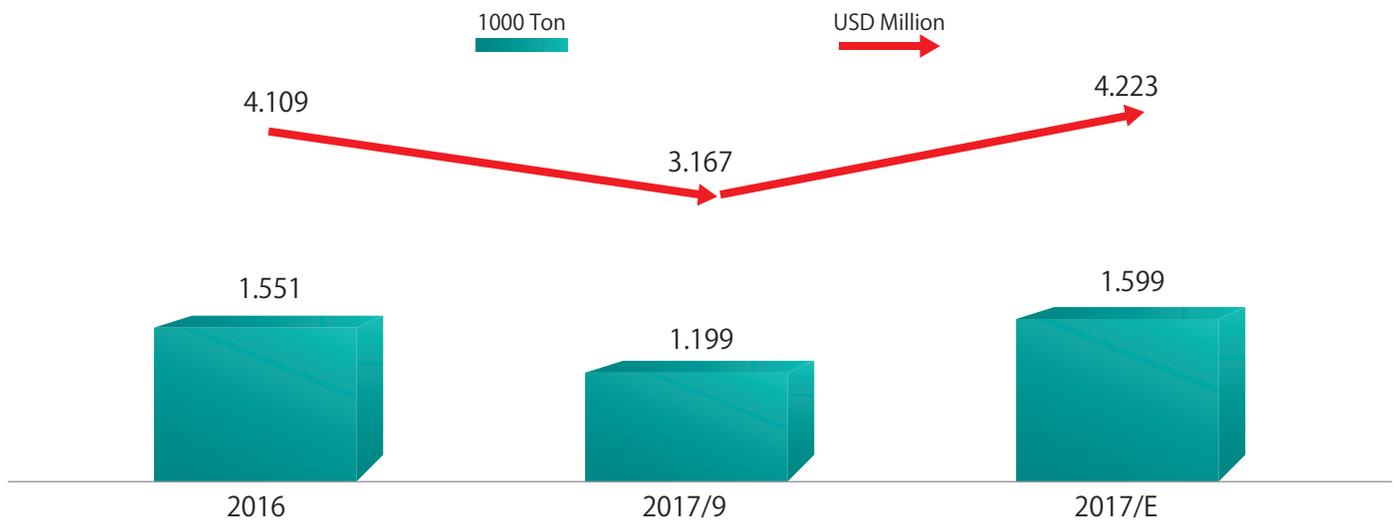


## 2. PLASTICS END PRODUCTS INDUSTRY

### 2.5.3. EXPORTS

By the end of September 2017, 1 million 199 thousand tons and 3 billion 167 million dollars of plastic end products were exported. With the same trend, it is expected that exports of plastic end products will

increase to 1.6 million tons and 4.22 billion dollars by the end of the year, increasing by 3,1% on amount and 2,8% on value basis with respect to 2016.



**Graphic 8: Plastics End Products Exports**

Source: Turk Stat & ITC Trade Statistics

As of the end of September of 2017, the largest exports in terms of quantity and value were 39.20 HS group (other plates, sheets, pellets and slides from plastic) and 39.23 HS group (plastics products, containers, caps, capsules for goods transport packaging).

The total exports of plastic products of these groups are 46% in volume and 43% in value basis.

## 2. PLASTICS END PRODUCTS INDUSTRY

HS CODE	PLASTIC PRODUCTS DEFINATIONS	2016	2017/9	2017/E	% Increase 2017/2016 (E)
3916	Monofilament, bar, profiles from plastic-cross section over 1mm	146	113	151	3.3
3917	Tubes, pipes, hoses from plastic; gasket, elbow, union etc.	215	158	211	-1.9
3918	Floor coverings from plastic – incl. wall and ceiling coverings	13	9	12	-7.7
3919	adhesive plate, sheet, strip, slide, etc. from plastic; flat	20	14	19	-2.4
3920	Other plate, sheet, pellicles and slides from plastic	369	282	376	1.8
3921	Other plates, sheets, pellicles, foils and slides from plastic	140	106	141	0.9
3922	Bathtub, shower, sink, bidet, water-closet pan and hardware from plastic	24	19	25	4.9
3923	Plastic products for moving furniture, tap, cap, capsule	335	272	363	8.6
3924	Table, kitchen and other household furniture, toiletry form plastic	121	103	138	13.7
3925	Construction materials from plastic	94	62	83	-11.8
3926	Other goods from plastic	74	60	79	7.9
	TOTAL	1,551	1,199	1,599	3.1

**Table 8: Exports of Plastics End Products by HS Codes (1000 Ton)**

Source: Turk Stat & ITC Trade Statistics

HS CODE	PLASTIC PRODUCTS DEFINATIONS	2016	2017/9	2017/E	% Increase 2017/2016 (E)
3916	Monofilament, bar, profiles from plastic-cross section over 1mm	250	188	251	0.1
3917	Tubes, pipes, hoses from plastic; gasket, elbow, union etc.	553	389	519	-6.2
3918	Floor coverings from plastic – incl. wall and ceiling coverings	26	19	25	-1.6
3919	adhesive plate, sheet, strip, slide, etc. from plastic; flat	113	72	96	-15.1
3920	Other plate, sheet, pellicles and slides from plastic	923	710	947	2.6
3921	Other plates, sheets, pellicles, foils and slides from plastic	402	300	399	-0.6
3922	Bathtub, shower, sink, bidet, water-closet pan and hardware from plastic	100	76	102	1.8
3923	Plastic products for moving furniture, tap, cap, capsule	809	654	872	7.8
3924	Table, kitchen and other household furniture, toiletry form plastic	356	290	386	8.6
3925	Construction materials from plastic	217	157	209	-3.6
3926	Other goods from plastic	359	312	415	15.7
	TOTAL	4,109	3,167	4,223	2.8

**Table 9: Exports of Plastics End Products by HS Codes (USD 1000)**

Source: Turk Stat & ITC Trade Statistics

## 2. PLASTICS END PRODUCTS INDUSTRY

### 2.5.4. EXPORTS BY COUNTRIES

Turkey exports plastic end products to about 150 countries. By the end of September of 2017, 10 countries had 47% share on amount and 45% on value basis in total exports.

By the end of September 2017, Iraq, Germany, UK, Israel and France had the biggest share in total plastics end product exports.

Countries	2016				2017/9				
	1000 Ton	USD Million	Ton - %	\$ - %	Countries	1000 Ton	USD Million	Ton - %	\$ - %
Iraq	199	373	12.8	9.1	Iraq	160.3	293.8	13.4	9.3
Germany	87	299	5.6	7.3	Germany	63.0	228.0	5.2	7.2
UK	78	197	5.1	4.8	UK	57.4	150.8	4.8	4.8
France	52	168	3.4	4.1	Israel	65.0	144.2	5.4	4.6
Israel	74	167	4.8	4.1	France	37.9	120.9	3.2	3.8
Romaine	54	142	3.5	3.4	Bulgaria	33.7	111.6	2.8	3.5
Italy	52	136	3.4	3.3	Romaine	39.9	107.1	3.3	3.4
Iran	43	132	2.7	3.2	Italy	40.1	105.2	3.3	3.3
Bulgaria	44	126	2.8	3.1	Georgia	37.2	80.3	3.1	2.5
Georgia	46	103	3.0	2.5	Iran	25.5	79.0	2.1	2.5
<b>Total 10</b>	<b>729</b>	<b>1.842</b>	<b>47.0</b>	<b>44.8</b>	<b>Total 10</b>	<b>559.9</b>	<b>1.420,9</b>	<b>46.7</b>	<b>44.9</b>
<b>Others</b>	<b>821</b>	<b>2.267</b>	<b>53.0</b>	<b>55.2</b>	<b>Others</b>	<b>639.2</b>	<b>1.746,3</b>	<b>53.3</b>	<b>55.1</b>
<b>TOTAL</b>	<b>1,551</b>	<b>4,109</b>	<b>100.0</b>	<b>100.0</b>	<b>TOTAL</b>	<b>1,199.2</b>	<b>3,167.2</b>	<b>100.0</b>	<b>100,0</b>

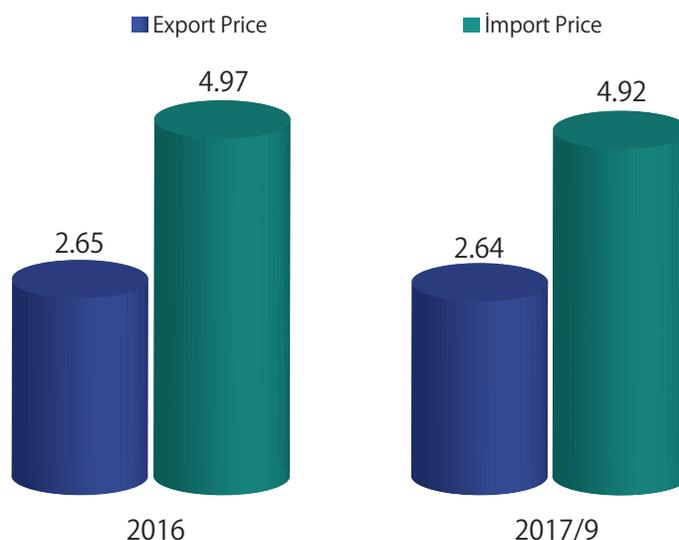
**Table 10: Plastics End Products Exports by the Main 10 Countries**

Source: Turk Stat & ITC Trade Statistics

### 2.5.5. IMPORT AND EXPORT PRICES

Unit import prices for plastic end products are always

above the unit export prices.



**Graphic 9: Average Unit Foreign Trade Prices For Plastics End Products**

Source: Turk Stat & ITC Trade Statistics

## 2. PLASTICS END PRODUCTS INDUSTRY

As of the end of September 2017, the average import prices of plastic end products were \$ 4.92/kg and the average export prices were \$ 2.64/kg. In this period,

average import price declined 1.1% and the average export price declined 0.3% with respect to 2016.

HS CODE	Import Prices			Export Prices		
	2016	2017/9	% Increase	2016	2017/9	% Increase
3916	4.13	4.47	8.2	1.72	1.66	-3.1
3917	7.97	8.41	5.5	2.57	2.46	-4.3
3918	3.97	3.63	-8.5	1.94	2.07	6.7
3919	5.75	5.44	-5.4	5.79	5.04	-13.0
3920	3.64	3.61	-0.9	2.50	2.52	0.8
3921	3.92	3.78	-3.6	2.87	2.83	-1.5
3922	9.26	9.63	4.0	4.16	4.04	-2.9
3923	4.43	4.45	0.7	2.42	2.40	-0.7
3924	6.43	6.61	2.8	2.94	2.81	-4.5
3925	3.78	4.32	14.2	2.30	2.52	9.3
3926	9.45	9.86	4.3	4.89	5.24	7.2
Average	4.97	4.92	-1.1	2.65	2.64	-0.3

**Table 11: Average Unit Foreign Trade Prices for Plastics End Products (USD/kg)**

Source: Turk Stat & ITC Trade Statistics

### 2.5.6. VALUE ADDED CREATED IN EXPORTS

By the end of September 2017, an added value of \$ 1.2 per kg was created in exports of plastic end products industry. The highest added value to the export price was provided by products with 39.26 with 73% and in 39.19 with 72% respectively. However, the share of 29.19 HS products in total exports is only 2% and 39.26

In the 39.16 HS group, it is seen that the lowest added value is obtained with 15%

In order to increase the added value of exports in the plastic industry, it is necessary to increase the share of high added value products in total exports.

## 2. PLASTICS END PRODUCTS INDUSTRY

HS CODE	Value Added by kg (\$/kg)	Value Added/ Export Price (%)	Share in Total Industry Exports (%)	Share in Total Industry Imports (%)	Share in Total Domestic Consumption (%)
3916	0.3	15	6	2	4
3917	1.1	43	12	8	10
3918	0.7	32	1	3	2
3919	3.6	72	2	11	7
3920	1.1	44	22	32	27
3921	1.4	50	9	9	9
3922	2.6	65	2	1	2
3923	1.0	41	21	9	15
3924	1.4	50	9	2	6
3925	1.1	44	5	1	3
3926	3.8	73	10	22	16
Average	1.2	47	100	100	100

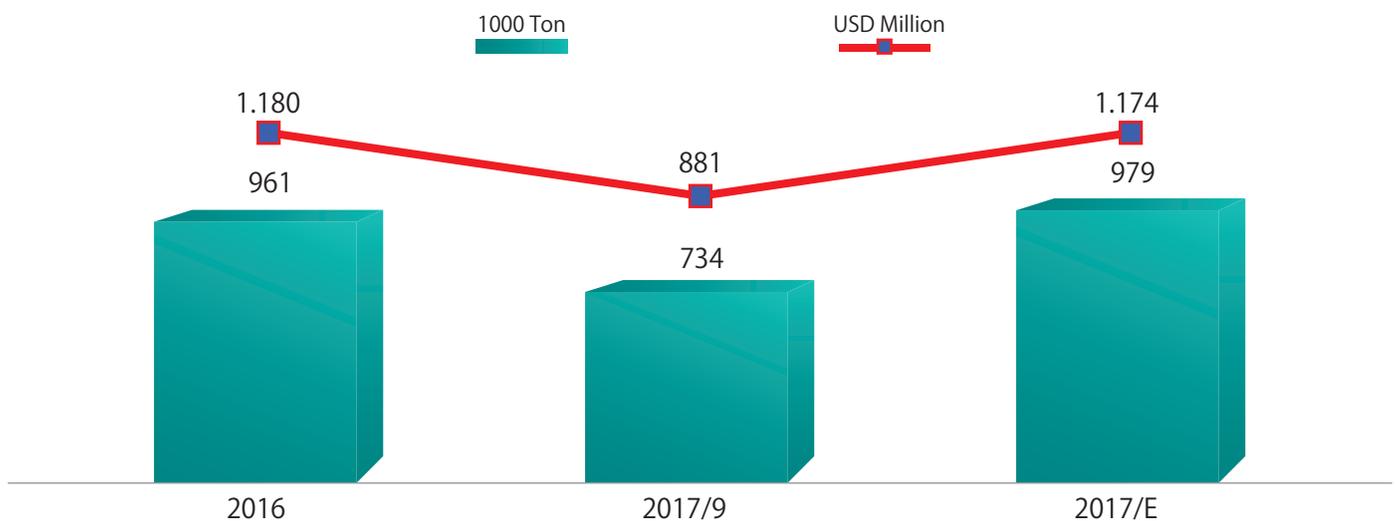
**Table 12: Value Added Created By Plastics Exports**

Source: Turk Stat & ITC Trade Statistics

### 2.5.7. FOREIGN TRADE SURPLUS

Turkey always gives foreign trade surplus in plastic end products foreign trade. As of the end of September 2017, 734 thousand tons and 881 million dollars of foreign trade surplus were obtained.

Foreign trade surplus is expected to rise to 979 thousand tons and 1.17 billion dollars by the end of 2017.



**Graphic 10: Foreign Trade Surplus of Plastics End Products**

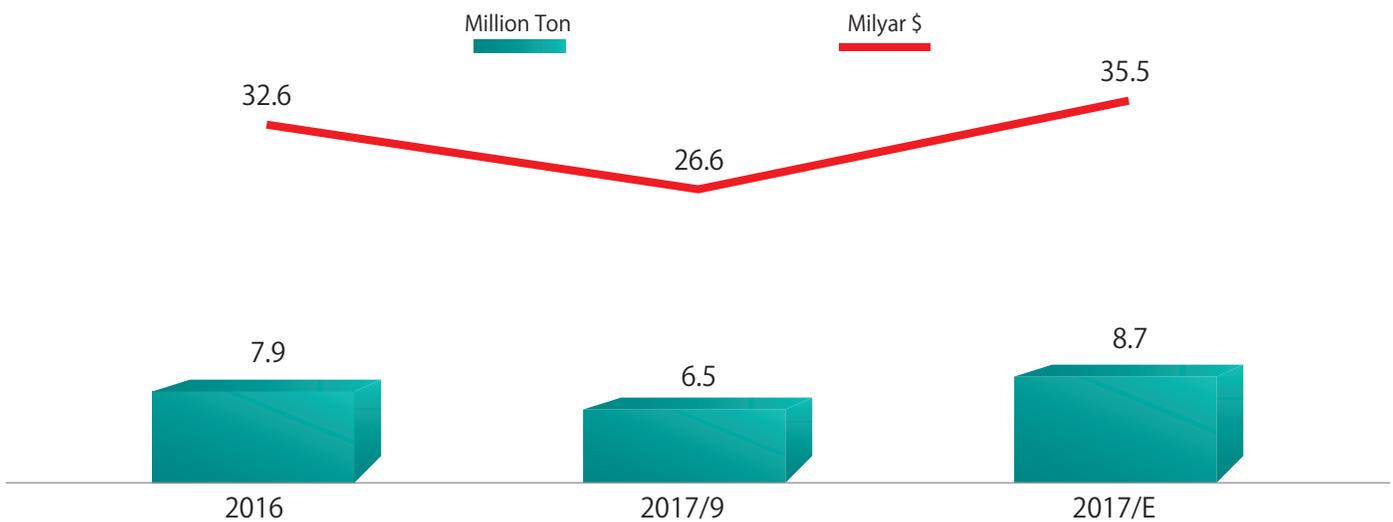
Source: Turk Stat & ITC Trade Statistics

## 2. PLASTICS END PRODUCTS INDUSTRY

### 2.6. DOMESTIC CONSUMPTION

As of the end of September 2017, domestic consumption of 6.5 million tons and \$ 26.6 billion was realized in the plastic end products industry. If consumption continues at the same trend, it is estimated that it will

be 8.7 million tons and 35.5 billion dollars at the end of the year increasing by 10% on amount and 8.9% on value basis in 2016.



**Graphic 11: Plastics End Products Domestic Consumption**

Source: Turk Stat & ITC Trade Statistics

As of the end of September 2017, approximately 3 million 250 thousand tons of total domestic consumption has been exported indirectly by the exporting industries channels such as automotive, packaging, construction and electronics as finished and semi-finished products. The remaining 3 million 250 thousand tons were consumed directly by the consumer.

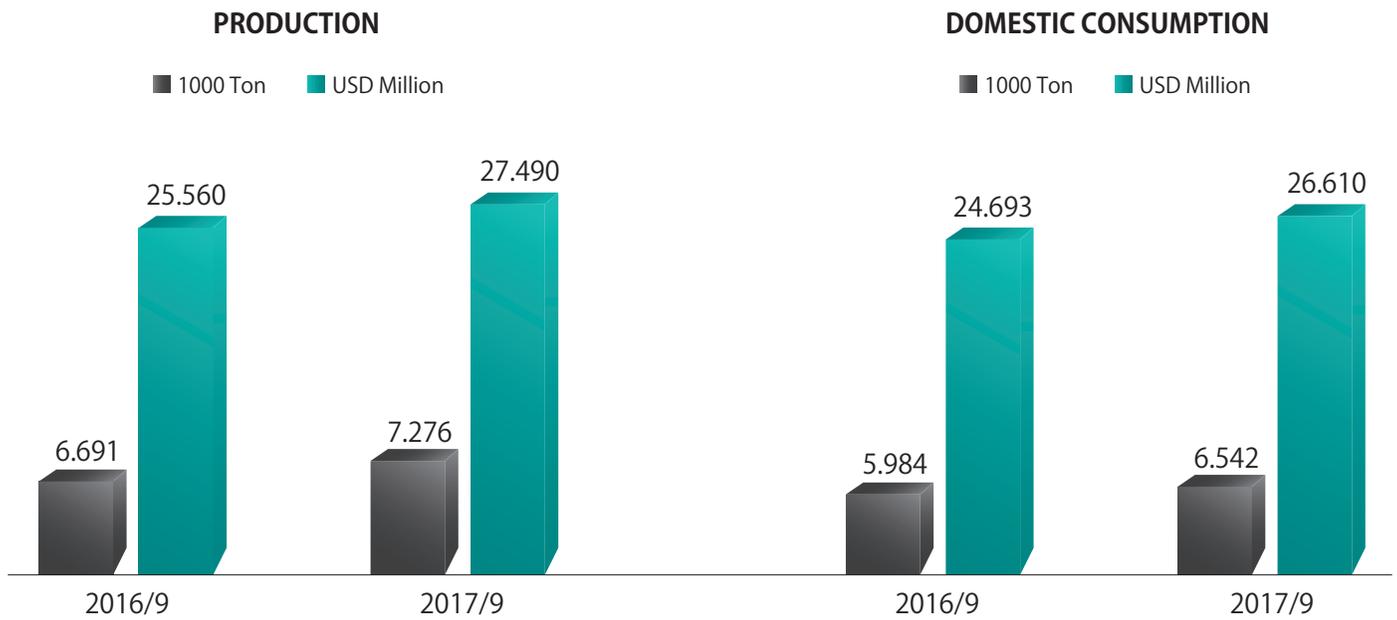
### 2.7. SUPPLY AND DEMAND

#### 2.7.1. PEER PERIOD COMPARISON

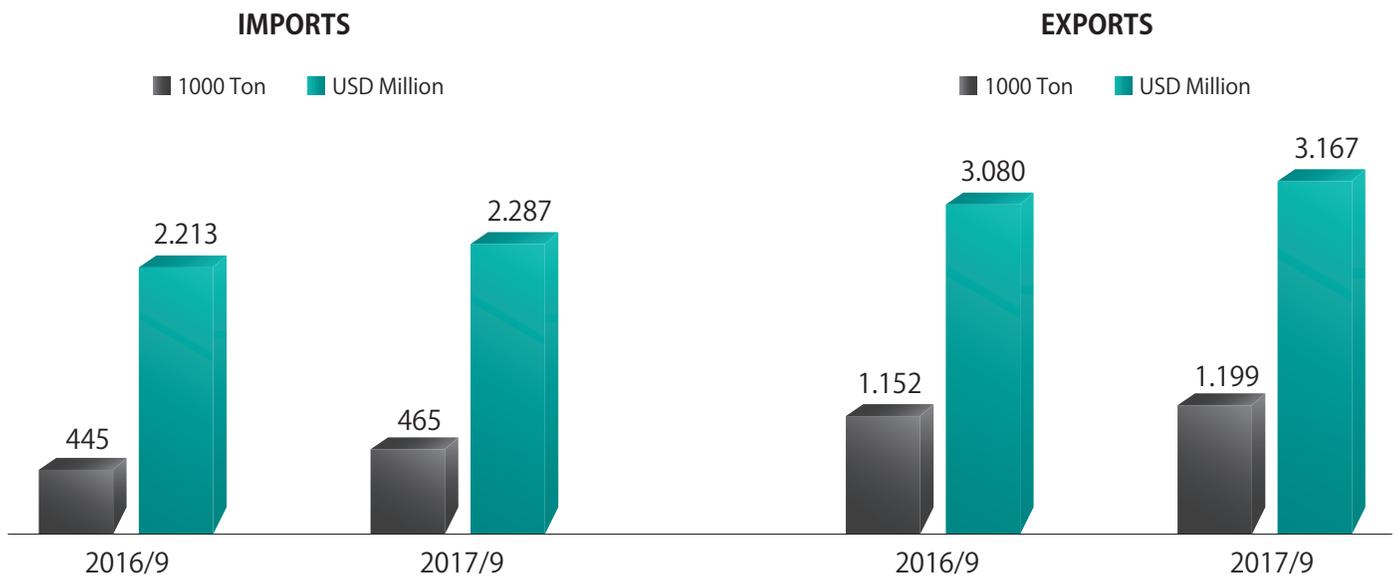
Plastic products in January-September 2017 compared to the same period of of 2016 and on amount base;

- Production increased by 8.7% imports by 4.5% exports by 4.1% domestic consumption by 9.3% and foreign trade by 3.8%.
- In the same period, the share of exports in production decreased from 17% to 16%, the share of imports in domestic consumption remained at the same level with 7%, and the import coverage ratio of exports decreased from 259% to 258%.

## 2. PLASTICS END PRODUCTS INDUSTRY



**Graphic 12: Comparison of Production and Domestic Consumption by Peer Periods (2016/2017-9 Months)**  
 Source: TurkStat and ITC Trade Statistics



**Graphic 13: Comparison of Imports and Exports by Peer Periods (2016/ 2017-9 Months)**  
 Source: TurkStat and ITC Trade Statistics

## 2. PLASTICS END PRODUCTS INDUSTRY

	2016/9	2017/9	% Increase (2017/2016)
Production	6,691	7,276	8.7
Imports	445	465	4.5
Exports	1,152	1,199	4.1
Domestic Consumption	5,984	6,542	9.3
Foreign Trade Surplus	707	734	3.8
Exports/Production (%)	17	16	
Imports/Domestic Consumption (%)	7	7	
Exports/Imports (%)	259	258	

**Table 13: Supply and Demand in Plastics End Products Industry (1000 Ton)**

Source: TurkStat and ITC Trade Statistics

Plastic products in January-September 2017 compared to the same period of of 2016 and on value base;

- Production increased by 7.6% imports by 3.3% exports by 2.8% domestic consumption by 7,8% and foreign trade by 1.6%.

- In the same period, the share of exports in production remained at the same level by 12% the share of imports in domestic consumption by 9% and the import coverage ratio of exports by 139%.

	2016/9	2017/9	% Increase (2017/2016)
Production	25,560	27,490	7.6
Imports	2,213	2,287	3.3
Exports	3,080	3,167	2.8
Domestic Consumption	24,693	26,610	7.8
Foreign Trade Surplus	867	881	1.6
Exports/Production (%)	12	12	
Imports/Domestic Consumption (%)	9	9	
Exports/Imports (%)	139	139	

**Table 14: Supply and Demand in Plastics End Products Industry (USD Million)**

Source: TurkStat and ITC Trade Statistics

### 2.7.2. EXPECTATIONS FOR 2017

Considering the 9 month realizations of 2017, at the end of the year on amount basis;

- It is expected that production will increase by 9.4% imports by 5.2% exports by 3.1%, domestic consumption by 1.3% and foreign trade surplus by 1.8%.

- The share of exports in production is expected to decrease from 17% to 16% and the share of imports in domestic consumption with 7% will stay at the same amounts.
- Ratio of exports to imports will increase from 263% to 258%.

## 2. PLASTICS END PRODUCTS INDUSTRY

	2016/9	2017/9	% Increase (2017/2016)
Production	8,867	9,702	9.4
Imports	589	620	5.2
Exports	1,551	1,599	3.1
Domestic Consumption	7,905	8,723	10.3
Foreign Trade Surplus	961	979	1.8
Exports/Production (%)	17	16	
Imports/Domestic Consumption (%)	7	7	
Exports/Imports (%)	263	258	

**Table 15: Supply and Demand Equilibrium in Plastics End Products (1000 Ton)**

Source: TurkStat and ITC Trade Statistics

Considering the 9 month realizations of 2017, at the end of the year on **value basis**;

- It is expected that production will increase by 8.5% imports by 4.1% exports by 2.8%, domestic consumption by 8.9% and foreign trade surplus decrease by 0.5%.

- It is expected that the share of exports in production will be 12% share of imports in domestic consumption will remain the same at 9% and exports coverage ratio of imports will decrease from 140% to 139%.

	2016/9	2017/9	% Increase (2017/2016)
Production	33.770	36.654	8,5
Imports	2.928	3.049	4,1
Exports	4.109	4.223	2,8
Domestic Consumption	32.590	35.480	8,9
Foreign Trade Surplus	1.180	1.174	-0,5
Exports/Production (%)	12	12	
Imports/Domestic Consumption (%)	9	9	
Exports/Imports (%)	140	139	

**Table 16: Supply and Demand Equilibrium in Plastics End Products (1000 Ton)**

Source: TurkStat and ITC Trade Statistics

## 3. PLASTICS RAW MATERIALS INDUSTRY

### 3.1. PRODUCTION

As of September 2017, total plastic raw material

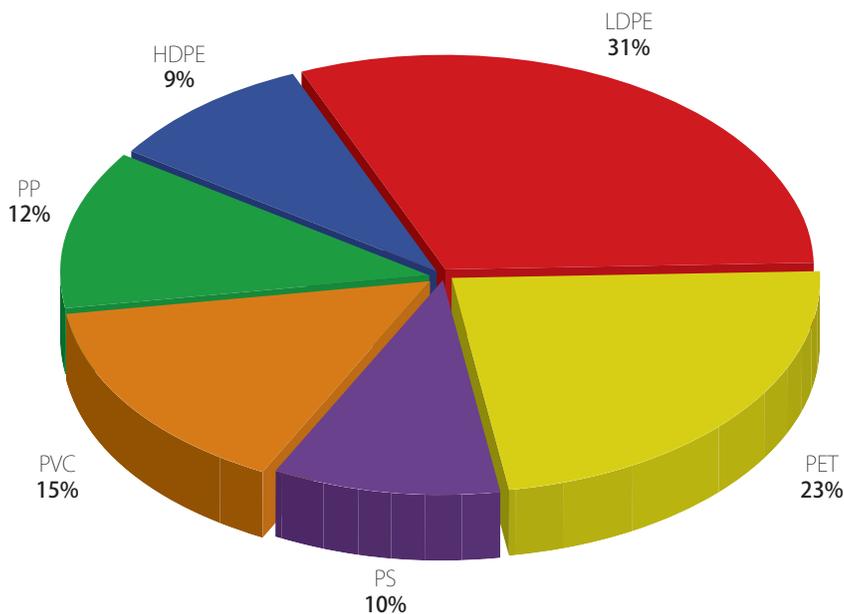
production is estimated to be around 761 thousand tons.

1000 Ton	
LDPE	235.7
HDPE	67.5
PE	303.2
PP	91.6
PVC	114.1
PS	76.6
PET	175.6
Total	761.0

**Table 17: Plastics Raw Materials Production (2017/9)**  
Source: PETKIM and Other Producers

As of September 2017, 31% of the total plastic raw materials was LDPE 9% was HDPE, 15% was PVC,

12% was PP, 10% was PS and 23% was PET.



**Graphic 14: Plastics Raw Materials Production (2017/9)**  
Source: PETKIM and Other Producers

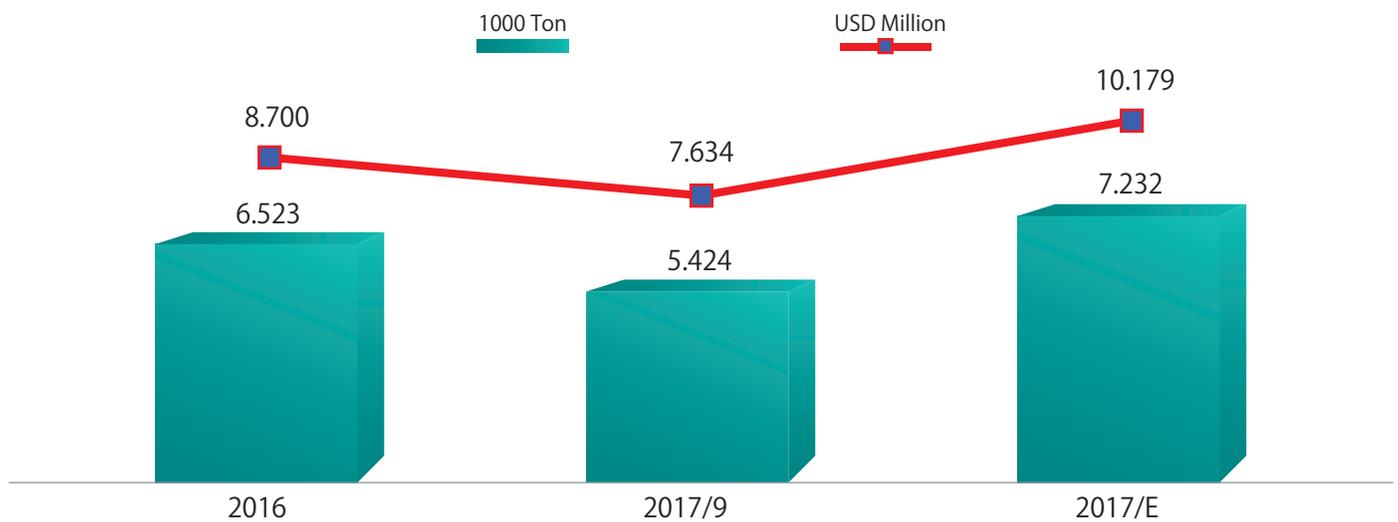
## 3. PLASTICS RAW MATERIALS INDUSTRY

### 3.2. FOREIGN TRADE

#### 3.2.1. IMPORTS

By the end of September 2017, 5 million 424 thousand tons and 7,6 billion dollars of plastic raw materials were imported. If the same trend continues in the other months of the year, it is estimated that plastic raw

material imports will increase by 10.9% on amount and by 17% on value basis at the end of 2017, amounting to 7 million 232 thousand tons and 10 billion 179 million dollars.



**Graphic 15: Plastics Raw Materials Imports**

Source: Turk Stat & ITC Trade Statistics

By the end of September 2017, the highest imports on amount basis were polyethylene and polypropylene.

The imports of these two raw materials have received a 56% share of total plastic raw material imports on amount basis.

### 3. PLASTICS RAW MATERIALS INDUSTRY

HS CODE	CN DESCRIPTION	2016	2017/9	2017/E	% Increase 2017/2016 (E)
3901	Ethylene polymers (initial forms)	1,710	1,385	1,846	8.0
3902	Propylene and polymers of other olefins (initial forms)	2,021	1,643	2,191	8.4
3903	Styrene polymers (initial forms)	509	405	540	6.2
3904	Other olefin polymers with vinyl chloride/homogenous	758	633	843	11.3
3905	Vinyl acetate/polymers of other vinyl esters (initial forms)	45	36	48	6.4
3906	Acrylic polymers (initial forms)	208	173	231	11.1
3907	Polyacetals, other polyethers, epoxide-alkyd resins (initial forms)	688	633	844	22.7
3908	Polyamides (initial forms)	94	74	98	4.2
3909	Amino resins, phenolic resins, polyurethanes (initial forms)	218	180	239	10.0
3910	Silicones (initial forms)	32	27	37	15.2
3911	Petroleum resins, coumarone, indene/coumarone-indene resin, polyterpenes	33	26	35	6.2
3912	Cellulose and chemical derivatives (initial form)	39	33	43	11.7
3913	Natural polymers, modified natural polymers, derivatives (initial forms)	4	3	3	-9.5
3914	Polymer based ion exchangers (initial form)	5	5	7	31.2
3915	Wastes, residuals and scraps from plastic	160	169	226	41.4
	Total	6,523	5,424	7,232	10.9

**Table 18: Plastics Raw Materials Imports by Custom Tariff Statistics Position (1000 Ton)**

Source: Turk Stat & ITC Trade Statistics

On the other hand, it is observed that polyethylene and polypropylene were the highest imports in value terms in the same period.

The imports of these two raw materials have received a 52% share of total plastic raw material import value.

HS CODE	CN DESCRIPTION	2016	2017/9	2017/E	% Increase 2017/2016 (E)
3901	Ethylene polymers (initial forms)	2,341	1,872	2,496	6.6
3902	Propylene and polymers of other olefins (initial forms)	2,346	2,073	2,764	17.8
3903	Styrene polymers (initial forms)	698	661	882	26.2
3904	Other olefin polymers with vinyl chloride/homogenous	705	660	880	24.8
3905	Vinyl acetate/polymers of other vinyl esters (initial forms)	106	84	112	5.2
3906	Acrylic polymers (initial forms)	302	274	365	21.1
3907	Polyacetals, other polyethers, epoxide-alkyd resins (initial forms)	1,134	1,034	1,378	21.5
3908	Polyamides (initial forms)	214	193	258	20.6
3909	Amino resins, phenolic resins, polyurethanes (initial forms)	411	408	544	32.4
3910	Silicones (initial forms)	117	103	137	17.2
3911	Petroleum resins, coumarone, indene/coumarone-indene resin, polyterpenes	91	72	96	5.4
3912	Cellulose and chemical derivatives (initial form)	149	124	165	11.1
3913	Natural polymers, modified natural polymers, derivatives (initial forms)	24	17	23	-4.2
3914	Polymer based ion exchangers (initial form)	13	12	15	16.2
3915	Wastes, residuals and scraps from plastic	50	49	65	30.9
	Total	8,700	7,634	10,179	17.0

**Table 19: Plastics Raw Materials Imports by Custom Tariff Statistics Position (USD Million)**

Source: Turk Stat & ITC Trade Statistics

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## 3. PLASTICS RAW MATERIALS INDUSTRY

It is observed that the high import dependence of the Turkish plastics industry in the supply of plastic raw materials is on the rise and that imports account for 88% of the total supply.

### 3.2.2. IMPORTS BY COUNTRIES

Turkey imports plastic raw materials from more than 100 countries. By the end of September 2017, 62.8% of the total imports amounted to 64.7% of the value based on 10 countries.

By the end of September 2017, total imports of plastic raw materials had the first three orders from S. Arabia, Germany and S. Korea and the share of these three countries in total plastic raw material imports is around 32%.

2016					2017/9				
Countries	1000 Ton	USD Million	Ton - %	\$ - %	Countries	1000 Ton	USD Million	Ton - %	\$ - %
Arabia	1,064	1,226	16.3	14.1	Arabia	848.5	1014.5	15.6	13.3
S.Korea	646	865	9.9	9.9	S.Korea	506.4	747.2	9.3	9.8
Germany	429	853	6.6	9.8	Germany	369.8	726.0	6.8	9.5
Belgium	385	552	5.9	6.3	Belgium	316.6	497.4	5.8	6.5
Italy	237	410	3.6	4.7	Iran	307.6	356.9	5.7	4.7
Iran	361	400	5.5	4.6	France	244.0	350.4	4.5	4.6
France	300	386	4.6	4.4	Italy	188.2	338.5	3.5	4.4
Netherlands	228	370	3.5	4.3	Netherlands	186.4	317.8	3.4	4.2
Spain	265	370	4.1	4.3	Spain	201.8	311.3	3.7	4.1
Egypt	269	290	4.1	3.3	Egypt	235.5	279.6	4.3	3.7
<b>Total 10</b>	<b>4,184</b>	<b>5,724</b>	<b>64.1</b>	<b>65.8</b>	<b>Netherlands</b>	<b>3,404.7</b>	<b>4,939.6</b>	<b>62.8</b>	<b>64.7</b>
<b>Others</b>	<b>2,338</b>	<b>2,976</b>	<b>35.9</b>	<b>34.2</b>	<b>Spain</b>	<b>2,019.6</b>	<b>2,694.3</b>	<b>37.2</b>	<b>35.3</b>
<b>Total</b>	<b>6,523</b>	<b>8,700</b>	<b>100.0</b>	<b>100.0</b>	<b>Egypt</b>	<b>5,424.3</b>	<b>7,633.9</b>	<b>100.0</b>	<b>100.0</b>

**Table 20: Plastics Raw Materials Imports by Countries**

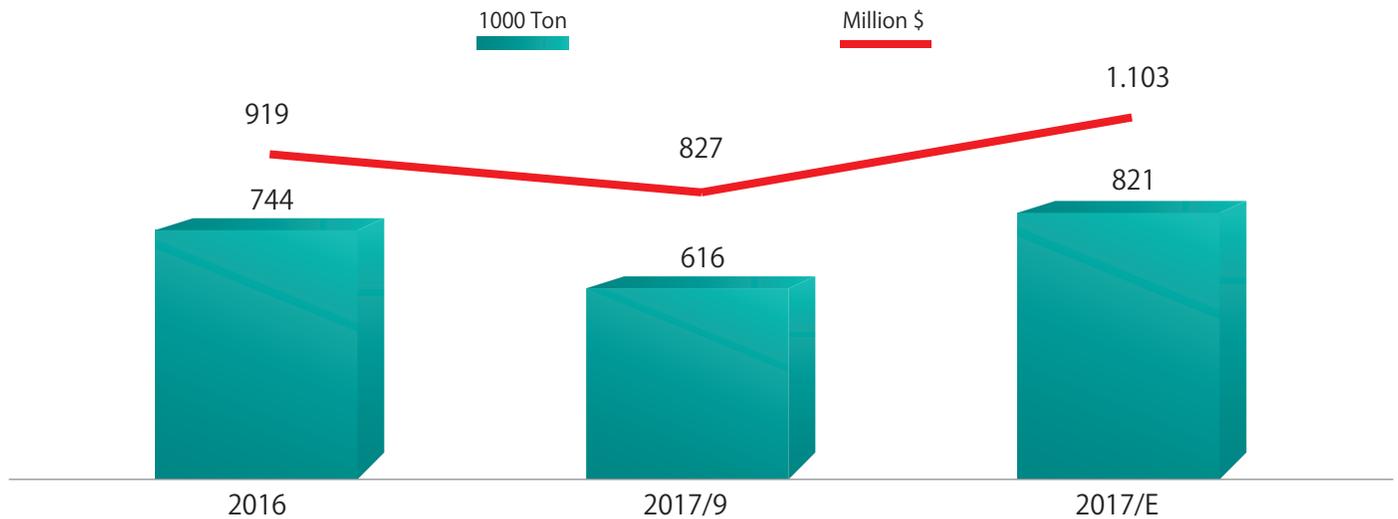
Source: Turk Stat & ITC Trade Statistics

### 3.2.3. EXPORTS

By the end of September 2017, 616 thousand tons and 827 million dollars of plastic raw materials were exported. By the same trend, it is estimated that exports will

increase to 821 thousand tons and 1 billion 103 million dollars by the end of 2017 increasing by 10.3% on amount and 20% on value basis with respect to 2016.

### 3. PLASTICS RAW MATERIALS INDUSTRY



**Graphic 16: Plastics Raw Materials Imports**  
Source: Turk Stat & ITC Trade Statistics

By the end of September 2017, polyesters and acrylic

polymers were the largest exports on both quantity and value basis.

HS CODE	CN DESCRIPTION	2016	2017/9	2017/E	% Increase 2017/2016 (E)
3901	Ethylene polymers (initial forms)	72	87	115	59.4
3902	Propylene and polymers of other olefins (initial forms)	26	19	26	1.5
3903	Styrene polymers (initial forms)	26	19	26	-1.8
3904	Other olefin polymers with vinyl chloride/homogenous	20	14	19	-5.4
3905	Vinyl acetate/polymers of other vinyl esters (initial forms)	52	42	56	6.8
3906	Acrylic polymers (initial forms)	174	139	186	6.6
3907	Polyacetals, other polyethers, epoxide-alkyd resins (initial forms)	216	178	237	9.7
3908	Polyamides (initial forms)	14	11	15	8.8
3909	Amino resins, phenolic resins, polyurethanes (initial forms)	80	58	78	-2.7
3910	Silicones (initial forms)	6	5	6	0.7
3911	Petroleum resins, coumarone, indene/coumarone-indene resin, polyterpenes	1	1	1	61.3
3912	Cellulose and chemical derivatives (initial form)	40	30	40	2.2
3913	Natural polymers, modified natural polymers, derivatives (initial forms)	0	0	0	-27.6
3914	Polymer based ion exchangers (initial form)	0	0	0	-17.0
3915	Wastes, residuals and scraps from plastic	17	12	15	-8.1
	Total	744	616	821	10.3

**Table 21: Plastics Raw Materials Exports by HS Codes (1000 Ton)**  
Source: Turk Stat & ITC Trade Statistics

### 3. PLASTICS RAW MATERIALS INDUSTRY

HS CODE	CN DESCRIPTION	2016	2017/9	2017/E	% Increase 2017/2016 (E)
3901	Ethylene polymers (initial forms)	95	111	148	55.5
3902	Propylene and polymers of other olefins (initial forms)	32	25	34	.0
3903	Styrene polymers (initial forms)	30	25	34	12.5
3904	Other olefin polymers with vinyl chloride/homogenous	21	16	21	-1.7
3905	Vinyl acetate/polymers of other vinyl esters (initial forms)	42	32	43	3.6
3906	Acrylic polymers (initial forms)	186	159	212	14.1
3907	Polyacetals, other polyethers, epoxide-alkyd resins (initial forms)	322	287	383	18.9
3908	Polyamides (initial forms)	24	21	28	18.6
3909	Amino resins, phenolic resins, polyurethanes (initial forms)	86	86	115	33.7
3910	Silicones (initial forms)	22	15	20	-9.5
3911	Petroleum resins, coumarone, indene/coumarone-indene resin, polyterpenes	2	3	4	49.4
3912	Cellulose and chemical derivatives (initial form)	43	33	44	2.7
3913	Natural polymers, modified natural polymers, derivatives (initial forms)	1	1	1	-27.5
3914	Polymer based ion exchangers (initial form)	1	1	1	33.2
3915	Wastes, residuals and scraps from plastic	13	12	17	31.8
	Total	919	827	1,103	20.0

**Table 22: Plastics Raw Materials Exports by HS Codes (USD Million)**

Source: Turk Stat & ITC Trade Statistics

#### 3.2.4. EXPORTS BY COUNTRIES

Turkey is exporting plastic raw materials to more than 100 countries and 10 countries have received 49.4% share of total exports in terms of quantity and 49.6% on value basis by the end of September 2017.

By the end of September 2017, Germany, Italy, Egypt, Iran, and the Russian Federation were the top five countries in plastic raw material exports of Turkey.

Countries	2016				2017/9				
	1000 Ton	USD Million	Ton - %	\$ - %	Countries	1000 Ton	USD Million	Ton - %	\$ - %
Germany	65	86	8.7	9.4	Germany	53.3	77.8	8.7	9.4
Italy	59	74	7.9	8.0	Italy	56.5	72.0	9.2	8.7
Egypt	56	54	7.5	5.9	Egypt	43.0	45.1	7.0	5.5
Iran	25	50	3.4	5.4	Iran	19.1	42.0	3.1	5.1
Russian Fed.	19	37	2.6	4.1	Russian Fed.	18.8	37.6	3.1	4.5
Bulgaria	45	34	6.1	3.7	Bulgaria	35.0	36.4	5.7	4.4
Israel	29	30	3.9	3.2	Israel	23.8	26.1	3.9	3.2
Iraq	22	29	2.9	3.1	Iraq	16.9	25.6	2.7	3.1
Greece	38	28	5.1	3.0	Romain	19.0	24.2	3.1	2.9
Spain	23	26	3.1	2.8	Spain	18.6	23.9	3.0	2.9
<b>Total 10</b>	<b>381</b>	<b>448</b>	<b>51.1</b>	<b>48.7</b>	<b>Total 10</b>	<b>304.1</b>	<b>410.8</b>	<b>49.4</b>	<b>49.6</b>
<b>Others</b>	<b>363</b>	<b>471</b>	<b>48.9</b>	<b>51.3</b>	<b>Others</b>	<b>311.5</b>	<b>416.7</b>	<b>50.6</b>	<b>50.4</b>
<b>Total</b>	<b>744</b>	<b>919</b>	<b>100,0</b>	<b>100,0</b>	<b>Total</b>	<b>615.6</b>	<b>827.5</b>	<b>100.0</b>	<b>100.0</b>

**Table 23: Plastics Raw Materials Exports by Countries**

Source: Turk Stat & ITC Trade Statistics

## 3. PLASTICS RAW MATERIALS INDUSTRY

### 3.2.5. IMPORT AND EXPORT PRICES

As of the end of September 2017, the average unit import price of plastic raw materials was 1.41 \$/kg and the average unit export price was 1.34 \$/kg.

The import price increased by 8.8% and export price by 5.5% compared to 2016.



**Graphic 17: Plastics Raw Materials Average Foreign Trade Prices (USD/kg)**  
Source: Turk Stat & ITC Trade Statistics

HS CODE	Import Prices			Export Prices		
	2016	2017/9	% Increase	2016	2017/9	% Increase
3901	1,37	1,35	-1,2	1,32	1,29	-2,4
3902	1,16	1,26	8,7	1,27	1,31	3,5
3903	1,37	1,63	18,9	1,15	1,32	14,5
3904	0,93	1,04	12,1	1,06	1,10	3,9
3905	2,35	2,32	-1,1	0,80	0,78	-3,0
3906	1,45	1,58	9,0	1,07	1,14	7,1
3907	1,65	1,63	-1,0	1,49	1,61	8,4
3908	2,26	2,62	15,8	1,72	1,88	8,9
3909	1,89	2,27	20,3	1,07	1,48	37,4
3910	3,69	3,75	1,7	3,46	3,11	-10,1
3911	2,79	2,77	-0,8	3,08	2,85	-7,4
3912	3,82	3,80	-0,5	1,09	1,09	0,5
3913	6,22	6,59	5,8	5,31	5,31	0,1
3914	2,49	2,21	-11,4	3,20	5,14	60,5
3915	0,31	0,29	-7,4	0,75	1,07	43,4
Average	1,33	1,41	5,5	1,24	1,34	8,8

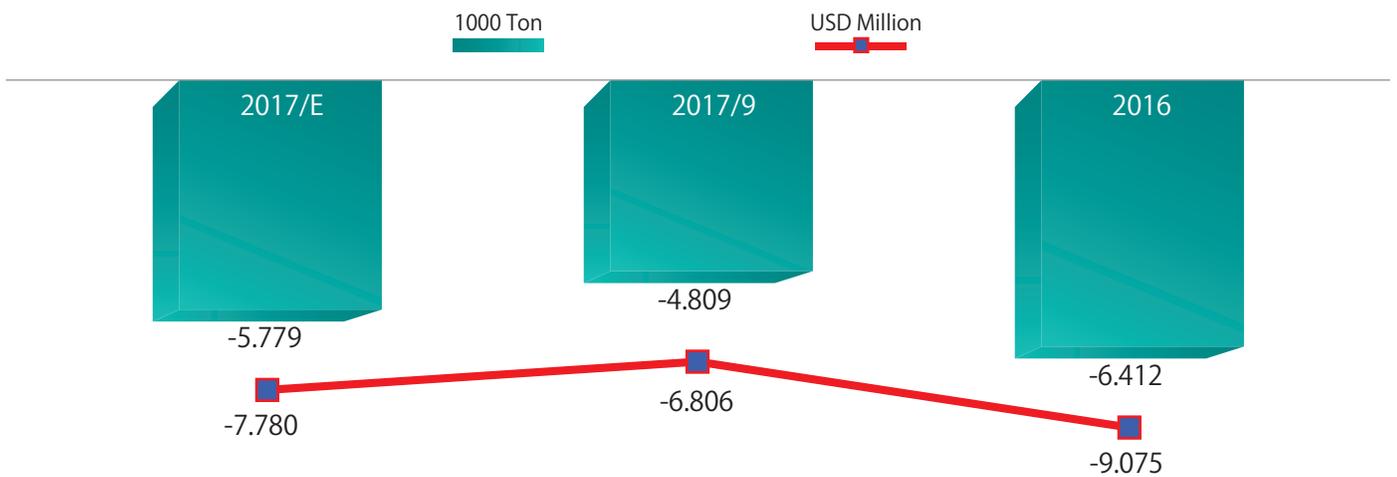
**Table 24: Plastics Raw Materials Average Import and Exports Prices by HS Codes (USD/kg)**  
Source: Turk Stat & ITC Trade Statistics

### 3. PLASTICS RAW MATERIALS INDUSTRY

#### 3.2.6. FOREIGN TRADE DEFICIT

Turkey is a country that gives deficit in plastics raw materials foreign trade. By the end of September 2017, the plastic raw material foreign trade deficit realized as 4 million 809 thousand tons and 6.81 billion dollars.

It is estimated that plastic raw materials foreign trade deficit will be 6,4 million tons and 9.08 billion dollars by the end of 2017 increasing 10.9% on volume and 16.6% on value basis compared with 2016.



**Graphic 18: Plastics Raw Materials Foreign Trade Deficit**

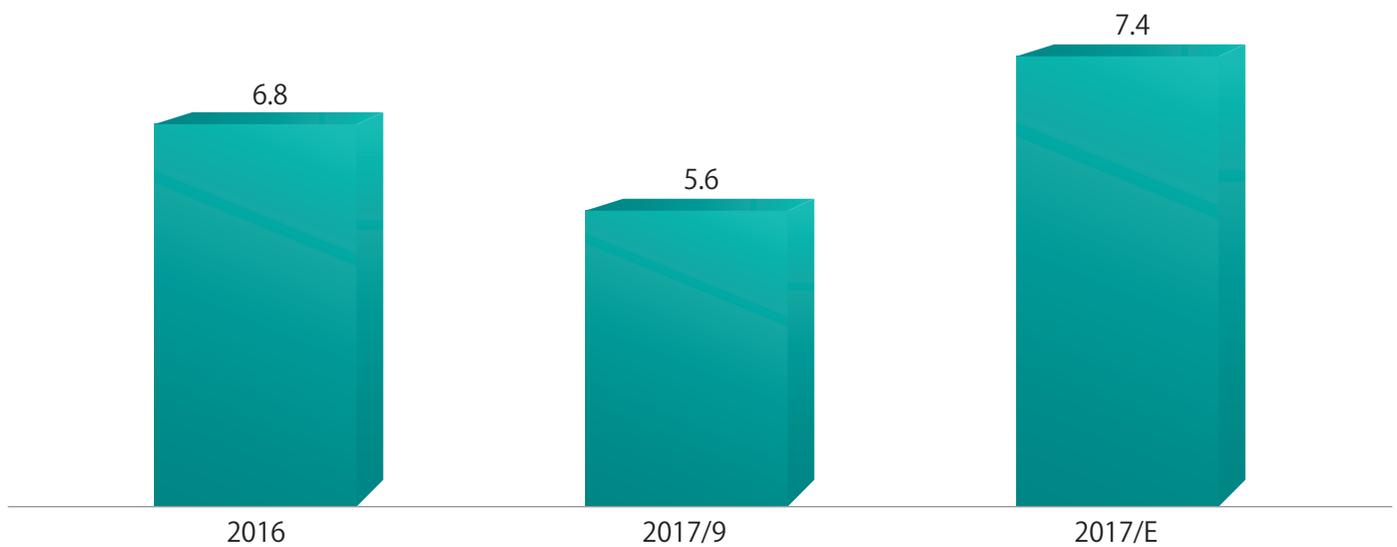
Source: Turk Stat & ITC Trade Statistics

## 3. PLASTICS RAW MATERIALS INDUSTRY

### 3.3. DOMESTIC CONSUMPTION

By the end of September 2017, domestic consumption of plastic raw materials was 5.6 million tons and it is

expected to increase to 7.4 million tons at the end of the year increasing by 8.8% compared to 2016.



**Graphic 19: Plastics Raw Materials Domestic Consumption (Million Ton)**

Source: Turk Stat & ITC Trade Statistics

## 3. PLASTICS RAW MATERIALS INDUSTRY

### 3.4. SUPPLY AND DEMAND EQUILIBRIUM AND 2017 ESTIMATES

#### 3.4.1. COMPARISON OF PEER PERIODS

In the plastics raw material industry during the January-September 2017 period, compared to 2016 in amount basis;

- Production remained at the same level, imports increased by 22.5%, exports by 19.5%, domestic consumption by 19.1% and foreign trade deficit by 22.9%
- The share of imports in the total supply rose from 87% to 88% and the import coverage ratio of exports declined from 12% to 11%.

#### 3.4.2. 2017 EXPECTATIONS

By the end of 2017 compared to 2016 on volume basis;

- The production will remain at the same level,
- Imports are expected to increase by 10.9%, exports by 10.3%, domestic consumption by 9.3% and foreign trade deficit by 11%,
- It is expected that the share of imports in total supply will increase from 87% to 88%, while the ratio of exports coverage of imports will remain at the same level of 11%.

HS CODE	2016/9	2016	2017/9	2017/E	2017/2016 (9)	2017/2016 (E)
Production	761	1,014	761	1,014	-0.1	-
Imports	4,429	6,523	5,424	7,232	22.5	10.9
Exports	515	744	616	821	19.5	10.3
Domestic Consumption	4,675	6,793	5,569	7,426	19.1	9.3
Foreign Trade Surplus	-3,914	-5,779	-4,809	-6,412	22.9	11.0
Exports/Production (%)	68	73	81	81		
Imports/Domestic Consumption (%)	85	87	88	88		
Exports/Imports (%)	12	11	11	11		

**Table 25: Supply and Demand Equilibrium in Plastics Raw Materials (1000 Tons)**

Source: Turk Stat & ITC Trade Statistics



## 4. CONCLUSION

The most important problem of the Turkish plastics industry which is the high tax problem of in importing raw materials, has not changed in 2016. The important thing is to produce high value added raw materials in Turkey. Taxes that we pay when importing raw materials purchased by everyone, such as polypropylene and polyethylene that the sector cannot meet the domestic demand, negatively affect our competition. It is known that when we eliminate these negativities, the added value that our industry provides to the Turkish economy will increase even more.

Turkish plastics industry grows rapidly and share more in global Plastics Industry. The 2023 export vision of the industry is to accrue at least 17 billion dollars of the 50 billion dollar export target of the chemical industry. In order for to increase the current export prices plastics industry export, which is less than 6 billion dollars, to 17 billion dollars, the industry must export 6 million tonnes of product and escalate total manufacturing to 28 million tonnes by 2023 with an annual growth of 14% in order to meet domestic demand.

Negative developments in Turkish and the world economy, makes it difficult to compete with the standstill or even declining sales prices and narrow profit margins.

The most important problem of the industry that it can't provide sufficient added value. There are mainly two ways to provide higher value-added production and exports. To produce innovative high value-added products or to increase profit margins by reducing costs without compromising quality. To enhance production and export opportunities in a competitive global market without compromising on quality, the industry must produce environmentally friendly at EU standards.

The companies which can't compete with the change in prices due to increasing global competition, must issue the "Costs of the Competition" to the forefront, to increase profitability. To create a successful competition that makes the difference in cost, it is necessary to implement changes in the changing world beyond the known method of saving techniques.

If the sector needs technological products and R&D investments to move to high-tech products and increase added value, the incentive opportunities for the sector need to be revised.

In order to adopt to changes, R&D and P&D should be given first priority and also customer satisfaction must be focused on creating a value chain.

Ascending face of global competition, the only way to develop a competitive advantage is to manage the present and future costs and establish a new cost management system.

The necessary work should be done in order for Turkey to become a production center of advanced plastics that will facilitate life. The traditional production model which does not add value to the sector should be transformed into the production of advanced plastics.

Despite the fact that only 13% of the raw material needs are covered by domestic production, the sector is deprived of the raw material supply facilities with high import prices and tax rates for the protection of domestic production at more economical prices. This reduces competitive export opportunities of sectors in global markets for the protection of the domestic raw material producer. Local producers should be protected by applying incentives to reduce production and investment costs instead of putting taxes on imports of raw materials. If the production of plastic raw materials cannot meet the need, importing obstacles must be removed. The plastic sector should be included in strategic investments regardless of foreign trade data and the minimum investment amount should be determined as 5 million dollars.

Because it is more rational to operate locally in the production of plastic products, the plastic sector must be supported at least on one province of each region. Necessary precautions should be taken for qualified staff in the sector.



## 5. PAGEV PROJECTS

PAGEV which is the "Unifying Power" of the Turkish Plastics Industry develops different projects aiming to solve the problems outlined above. These are in summary: "PAGEV Plastics Center of Excellence" and "International Regional Plastics Production Center".

### 5.1. PAGEV PLASTICS CENTER OF EXCELLENCE

Plastic materials, used in all areas of life, are rapidly taking place of other alternative products, because of their superior properties. In Turkey as well as in all over the world, plastics which useage in all sectors increasing is becoming an indispensable material for the 21 century.

Turkish Plastics Industry which is one of the fastest growing sectors in our country despite being young, is the 6 in the world and the 2 in Europe. Growing with the goal of leadership in Europe, the Turkish Plastics Sector aims to increase the certification and added value of its products.

PAGEV, "Unifying Power" of the Turkish Plastics Industry, is leading the industry with the "PAGEV Plastics Excellence Center" for realizing this purpose. The mission of the PAGEV Center for Plastics Excellence will include the following activities,

- Research and Development
- Test and Laboratory Services
- Certification
- Training
- Competent Consulting

With the Center of Excellence, the test and laboratory support that the plastic industry needs will be provided to the industry. So, many problems that lead to loss of time and energy such as high test costs, overseas shipping, customs clearance, long test times will be removed.

The platforms that will provide information to and knowledge sharing in the industry will be developed by the Center and detailed training programs will be prepared and presented for the benefit of the industry. While working on the newest technologies, the Center of Excellence will work together with industry organizations, universities, research institutes, professional associations and non-governmental organizations to work for the Turkish Plastics Industry to be the world leader with R&D and innovation based work.

Established with the support of the Ministry of Science, Industry and Technology, PAGEV Plastics Center of Excellence will provide to the plastics industry and Turkish economy, especially the development of industrial skills and capabilities that will form the basis of Turkey's national projects.

Upon completion, the Center of Excellence, which will have an area of over 30 thousand m<sup>2</sup>, rises right beside PAGEV Vocational and Technical Anatolian High School in Küçükçekmece, Istanbul. PAGEV Plastics Center of Excellence, which will make Turkey the center of plastic production in the world, will carry out innovative projects.

In addition to this, the Center will create a control mechanism for the products exported abroad. The Center will also contribute to the preservation of the reliability and reputation of the plastic products produced in Turkey. On the other hand, the introduction of poor quality and non-standard goods into the country will be prevented by determining the technical suitability of the plastic products imported from abroad without any definite importation in the laboratories.

With its superior information infrastructure, the Center of Excellence will present the important documents required by the players of the sector more economically and quickly.

By accelerating the development, we will focus on the development of products and production technologies that will increase the competitive power of our firms.

The Center of Excellence, which will develop innovative ideas by following the developments in the world plastic sector, will increase the competitive power of our firms by providing many field consultancy services from the determination of appropriate input materials to the optimization of production process.



## 5. PAGEV PROJECTS

### 5.2. INTERNATIONAL REGIONAL PLASTIC MANUFACTURING CENTER

Although the Turkish Plastics Sector, with its process capacity reaching 9 million tons, has the 6<sup>th</sup> largest plastics production capacity in the world and 2<sup>nd</sup> in Europe, imports more than 85% of the plastic raw material it needs.

One of the most important advantages of the plastics industry in Turkey is that it is located between the Middle East countries which are the main petroleum and plastic raw material producer and the European market which is the main plastic consumer.

PAGEV aims to unify the plastic raw materials potential of Middle East countries with the Turkish Plastics Industry's competent production capability and experience at the international regional plastic production center, which Turkey aims to establish in South East Anatolia Region.

In the center, to be established with the win-win principle, the plastics raw materials producer countries will be supplying cheap and reliable raw materials having a large volume and reliable market while Turkish Plastics Industry will have greater competition possibilities in the global markets with its growing production capacity and falling costs.

# CONNECTING POWER OF PLASTICS INDUSTRY



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