



TURKISH
PLASTICS INDUSTRY REPORT
2016

PAGEV



EXECUTIVE SUMMARY

It can not be said that the world 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. For this reason, the uncertainty which is to be increased is generally predicted to lead to the escape of danger and the use of a cautious resource. For this reason, it is estimated that the world economy will again slow down and the problem of not growing.

The increase in plastic domestic consumption and indirect exports have been the engine of production increase in plastic products in January - November of 2016. Production is expected to reach to 8.9 million tons and 33.9 billion dollars at the end of 2016 with an increase of 4 % on amount and 3.3 % on value basis. Imports are expected to realize as 589 thousand tons and 2.93 billion dollars, exports as 1 million 550 thousand tons and 4 billion 118 million dollars.

Domestic consumption including indirect export is expected to increase to 7.9 million tons and 30 billion dollars by the end of 2016, increasing by 5 % on amount and by 4.3 % on value basis compared to 2015. 17 % on amount and 12 % on value basis will be exported while 9 % of total domestic consumption including indirect exports will be met by imports.

Political and economic risks show that the growth in the Turkish economy in 2017 will be lower than planned. Turkey is at the forefront of the economies that are at risk of fragility in 2017 as well as in 2016. High current account deficit, high inflation, a slowdown in growth rate, increasing financing need and the release of hot money are among the risks that the Turkish economy will face in 2017 as well.



1. ECONOMIC SITUATION

1.1. WORLD ECONOMY

The main developments affecting Turkish economy in this period are as follows;

- ✓ After the republican candidate Donald Trump won presidential elections in the United States, global markets experienced sharp fluctuations.
- ✓ Recent macroeconomic indicators suggested that economic activity in the US has been stabilizing. The economic growth in the third quarter came in above expectations at 3.2 %.
- ✓ Trump's economic policy proposals have led to increases both in the US dollar and US treasury yields. The possibility that the Fed may have to raise interest rates faster than anticipated in the upcoming period has grown.
- ✓ OPEC decided to cut oil production at the meeting held on the end of November. Russia has also declared that it would cut its oil production in line with this decision. These developments supported oil prices in the recent period.
- ✓ Even though the UK Prime Minister has announced that EU withdrawal process would begin in March 2017, the UK Supreme Court has ruled that the steps to be taken in withdrawal process should be submitted to the Parliament for approval.
- ✓ The growth in the Euro Area was 0.3 % qoq in the third quarter, indicating that the economic activity displayed a relatively moderate outlook despite the Brexit decision. However, after the constitutional referendum in Italy, political uncertainties in the region have intensified.
- ✓ The OECD revised its global growth forecast for 2017 upward. The Organization stated that fiscal policies, designed in a way that they provide more support to the economy and target a more inclusive growth, should be seen as an important tool to avoid low growth trap.
- ✓ The OECD predicted that the US economy will grow by 2.3 % next year and the Euro Area economy by 1.6 % while raising the global growth forecast for 2017 from 3.2 % to 3.3 %. The OECD emphasized that the expanding monetary policies implemented have created an opportunity window for countries to focus on fiscal policies. Accordingly, it has been assessed that public spending in many OECD countries may be increased by 0.5 % of GDP over a period of several years which may not pose a problem in mid-term on budget performance. The OECD noted that fiscal policies should be viewed as an important means of escape from the low growth rate by re-auditing to provide more support to the economy and to target more inclusive growth.
- ✓ China's economy grew by 6.7 % year-on-year in the third quarter after the first two quarters. This situation has shown that the growth in the country is following a steady course.
- ✓ The IMF has not changed its global growth forecast in the Global Economic Outlook report. The organization revised downward the growth estimates for the developed countries for 2016 while revising the growth estimates for the emerging countries upward.



- ✓ While the IMF, Brexit, the US elections and the protectionist policies of the countries have been under pressure on the global economy, there has been no change in the forecast for global economic growth. According to IMF, the global economy will grow by 3.1 % in 2016 and by 3.4 % in 2017. However, the IMF predicts that the developed countries will grow more slowly and the developing countries will grow faster in 2016 than the July forecast.
- ✓ Due to weak growth performance in the first half of the year, the IMF lowered its 2016 growth forecast for the US by 0.6 percentage points to 1.6 % pulling the 2017 growth expectation for Euro Area from 2.5 % to 2.2 %. On the other hand, IMF has revised its growth forecasts for Turkish economy for the years 2016 and 2017 to 3.3 % and 3.3 %.

Generally speaking; while the factors driving down global economic growth in 2015 and 2016 are expected to continue in 2017, the main objective is to ensure the sustainability of 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.

1.2. DEVELOPMENTS IN TURKISH ECONOMY

Estimate of Gross Domestic Product; (2009 = 100) decreased by 1.8 % in the third quarter of 2016 compared to the same quarter of the previous year. Growth figures, which were 4.7 percent for the first quarter and 3.1 percent for the second quarter, were updated at 4.5 percent.

Gross domestic product forecast by production method has been 655 billion 400 million TL in current prices in the third quarter of 2016.

When the activities that constitute the gross domestic product are examined, the total value added of the agriculture sector decreased by 7.7 % in the chain volume index in the third quarter of 2016 compared to the same quarter of the previous year, the total value added of the industrial sector decreased by 1.4 %, the total value added of the construction sector increased by 1.4 % and the total added value of the services sector decreased by 8.4 %.

GDP, which is \$ 861.5 billion in 2015, is estimated to be \$ 627.7 billion in the first three quarters of 2016 and is expected to reach a maximum of \$ 837 billion by the end of 2016.



As the Turkish economy continues to grow due to domestic demand, public support for the growth of the country is increasing. According to the announced Medium-Term Program, Turkey is planned to grow by 3.2 % in 2016, 4.4 % in 2017 and 5 % in 2018.

In the January - November period of 2016, exports decreased by 1.7 % compared to the same period of 2015 and realized as 129.9 billion dollars. In the mentioned period, imports decreased by 4.8 % and realized as 180.2 billion. As a result, foreign trade deficit decreased by 11.8 % and reached to 50.4 billion dollars and the import coverage rate of exports increased to 72 %.

In November, the share of manufacturing industry products in total exports was 92.1 % while the share of high technology products in manufacturing industry products exports was 3.7 % and the share of medium high technology products was 33.9 %.

The share of manufacturing industry products in total imports was 82.9 %. In November 2016, the share of high technology products in manufacturing industry products imports was 16.8 % and the share of medium high technology products was 46.5 %. These initiatives in low-tech activities accounted for 52.3 % of employment.

The deterioration in the labor market continues in 2016. In August, employment increased by 323 thousand persons and unemployment rate by 435 thousand persons on an annual basis. Thus, the unemployment rate increased by 1.2 points to 11.3 % compared to the previous year. Seasonally adjusted unemployment rate also reached its highest level since March 2010 with 11.4 %. In addition to the weak performance in the tourism sector, the slowing observed in economic activity is thought to be effective in this development.

Industrial production fell 1.9 % in the third quarter. Despite a modest increase in August, calendar-adjusted industrial production declined by 3.1 % year-on-year in September. The contraction in manufacturing industry has played an important role in this development. In this period, 16 sub-sectors of the manufacturing industry declined in 24 of them. With this data, industrial production in the third quarter decreased by 1.9 %. The weak course in industrial production negatively affected the growth forecasts for the third quarter of the year. Nevertheless, the expectation that economic activity could be recovered in the last quarter with the relaxation of macroeconomic measures and the support of public spending is preserved.

The Manufacturing Industry Purchasing Managers Index (PMI) fell to 48.8 in November due to the retrenchment of production and new orders sub-indices. Thus, the index has remained below 50 threshold levels in the ninth month.



According to the seasonally adjusted figures, real sector confidence reached its highest level in November this year while consumer confidence decreased by 6.9 % on a monthly basis. Real sector confidence has supported the rapid increase in the sub-item of order quantity in the last 3 months. Among the sub-items of consumer confidence, the sharp decline in the probability of buying housing in the next 12 months was noteworthy.

A mixed outlook has also been observed in sectoral confidence indices. The service sector confidence index has recovered somewhat in recent months while the retail and construction sectors are showing a downward trend.

In November 2016, consumer price index rose by 0.52 % compared to the previous month and remained below the market expectation. Domestic PPI (domestic producer price index) has realized the fastest increase since January 2014 with 2 % in the mentioned period.

The annual inflation of the consumer price index, which has declined for the last four months, has dropped to its lowest level since May at 7 %. Annual WPI inflation, which was 2.84 % in October, increased rapidly to 6.41 % in this period. The increase in oil prices in November and the depreciation in TL were decisive in the course of the domestic producer price index.

The recent rise in exchange rates is expected to continue to exert pressure on inflation not only because of the cumulative effects of the rise but also because of the declining oil prices after OPEC members decided to cut down on oil production.

As of the first 10 months of the year, budget expenditures have increased by 13.8 % on an annual basis and budget revenues by 12.5 %. In the same period, budget deficit nearly doubled from last year level and reached TL 12.1 billion. In this period, primary surplus declined by 21.2 % year-on-year to TL 32.4 billion well above the OECD estimate. It is anticipated that the budgetary outlook will continue to expand as the government begins to use the space it owns to support growth. In addition, the fact that the views on tax reductions can be made to stimulate domestic demand are coming to an end, suggesting that budget revenues may be under pressure in the coming period.

With the US presidential election won by Donald Trump on November 8th, there were severe fluctuations in global markets. The expectation that Trump will follow a loose fiscal policy has strengthened the view that the Fed could raise interest rates faster than anticipated. In this framework, the US dollar appreciated against other developed country currencies, reaching the peak of the last 14 years. Developing country currencies have also been adversely affected by the strength of the US dollar. Portfolio flows to developing countries showed the most negative



performance to the buyer from 2008 along with accelerating capital outflows following the US elections.

The TL, which has been under pressure by foreign developments, has been negatively affected by other geopolitical and political developments in the domestic market. The uptrend in USD/TL, which started with an upward trend in November, exchange rates accelerated and has seen the and historical high following the US elections

1.3. TURKISH ECONOMY EXPECTATIONS FOR 2017

It can not be said that the world 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. For this reason, the uncertainty which is to be increased is generally predicted to lead to the escape of danger and the use of a cautious resource. For this reason, it is estimated that the world economy will again slow down and the problem of not growing.

It is possible to imagine that the Turkish economy will have a similar year. In 2017, negativity hanging from previous years will be effective and it is possible that the adversaries will participate in these negativities.

In recent years, the Turkish economy has been dragged into a spiral of recession. The Turkish economy, which emerged from the 2008 crisis quickly and brightly, was driven into a serious recession after 2011 and the growth momentum was lost. Factors such as the deterioration of the political climate in Turkey, the concentration of geopolitical risks, the slowdown in the world economy and the loss of spending and demand resulting from it, have been among the main causes of this process. As a result, an economic climate economics dominated by private sector confidence declined considerably, a general spending anxiety developed and in this context private investment expenditures almost ceased. These negative causes in 2016 will not change significantly in 2017.

It is seen that the continuation of not growing in the Turkish economy is the most important problem transferred from 2016 to 2017. It is seen that the growth that started faster than the year 2016 lost momentum in the second quarter and that the growth in the third quarter returned negative. The developments indicate that the fourth quarter will pass at a low rate. In general, it is estimated to be completed at an annual growth rate of 2 % or below of 2016. It is extremely difficult to compensate for this tempo in 2017. This factor, which causes the loss of confidence and the risk perception to increase, will cause the investment appetite to remain low in 2017 and thus lead to a loss of growth.



The most important factors that will affect the development of the Turkish economy in 2017; it is estimated that the growth will depend on the increase in domestic demand and the increase in domestic demand will depend on public expenditures. The increase in exports will depend on the recovery in the EU economy, growth in the Chinese economy and regional risks.

Political and economic risks show that the growth in the Turkish economy in 2017 will be lower than planned. Turkey is at the forefront of the economies that are at risk of fragility in 2017 as well as in 2016. High current account deficit, high inflation, a slowdown in growth rate, increasing financing need and the release of hot money are among the risks that the Turkish economy will face in 2017 as well.

It is expected that the growth of domestic demand in the Turkish economy will be the driving force in 2017. In terms of sectors, domestic demand is expected to increase in line with the expected increase in contribution to economic growth as well as the low course of commodity prices, the recovery tendency in the EU countries and the positive developments in 2016 to lift sanctions against Iran. On the other hand, problems in export markets, geopolitical developments and volatility that can be observed in financial markets are the main risk factors.

Especially fluctuations in foreign exchange rates are emerging as an element that increases the fragility of the sectors by increasing the costs. It is foreseen that 2017 will be a year that focuses on sectors on escaping from the risks, other than on growth, as in 2016.

Some policies that are expected to be implemented by Trump are expected to affect the plastic industry. It will not be surprising that China, which has an annual plastics exports to the US of 14 billion dollars, focuses on the markets such as the Middle East and Africa and both the production and the sales of products with America's exclusion from the American market with its high protection policy against the Chinese goods.

It is estimated that Trump will implement a higher interest policy with the Fed channel. This means that the US dollar will be more valued against the domestic currencies in countries that need finance like Turkey.

The increase in US dollars will mean that export prices will increase in TL while plastic raw materials, which are 80 % exogenously dependent on 85 % of the energy, will have an effect that increases production costs and therefore reduces profit margins. The rise in the dollar could also have a negative impact on the indirect exports of the sector, as the plastics industry would negatively impact the other exporting sectors provided by the finished and semi-finished products.

Trump's anticipated protectionist and high interest policies may ultimately have an impact on the plastics industry which could reduce their competitive production and export opportunities.

(Sources: T. İş Bank and Akbank Economic Publications, Ministry of Development, TurkStat)

		2014	2015	2016
GDP	USD Billion	799,0	789,4	350,5 (June)
Growth Rate	%	2,9	4,0	3,1 (June)
Inflation (Consumer Price Index)	%	8,2	8,8	7,10 (November)
Producers Price Index	%	6,4	5,7	6,41 (November)
Unemployment	%	10,4	10,3	11,4 (August)
Exports	USD Billion	157,6	143,9	129,8 (November)
Imports	USD Billion	242,2	207,2	180,2 (November)
Foreign Trade Deficit	USD Billion	-84,6	63,3	50,4 (November)
Exports / Imports	%	65,1	69,5	72
Current Balance	USD Billion	-46,5	- 32,2	-32,4 (September)
Current Balance / GDP	%	-5,8	- 4,5	
Budget Balance / GDP	%	-1,3	-1 ,3	
Total Debt Stocs	TL Billion	614,1	612,1	725,4 (October)
USD / TL	TL	2,3290	2,9207	3,4225 (October)
EURO / TL	TL	2,8297	3,1867	3,6397 (October)

Table 1: Turkey's Main Economic Indicators

Source: TURKSTAT, Ministry of Economy, Undersecretariat of Treasury, Central Bank Turkey

2. DEVELOPMENTS IN PLASTICS EN PRODUCTS INDUSTRY

2.1. PRODUCTION

In the first 11 months of 2016, 8.2 million tons and 31.1 billion dollars of plastic products have been produced. With the same trend, production is expected to reach 8.9 million tons and 33.9 billion dollars at the end of 2016, respectively. In this case, it is estimated that total plastic end products production will increase by 3.3 % on the quantity basis and by 3.5 % value basis by the end of 2016.

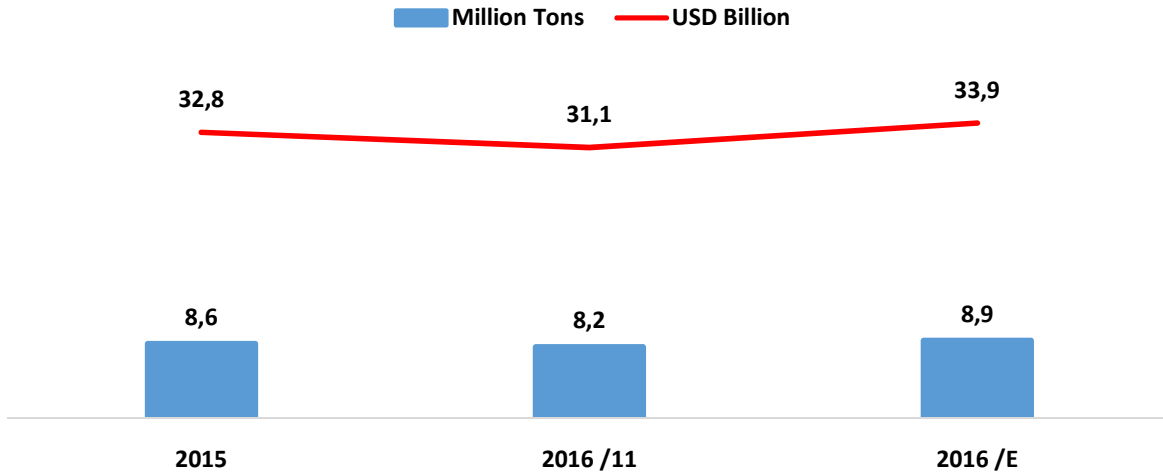


Figure 1: Plastics End Products Production

2.2. CAPACITY UTILIZATION

The average capacity utilization in the plastics industry in January - November period of 2016 was 66 %, which was 1 point behind the average capacity utilization of the general manufacturing industry by 67 %.

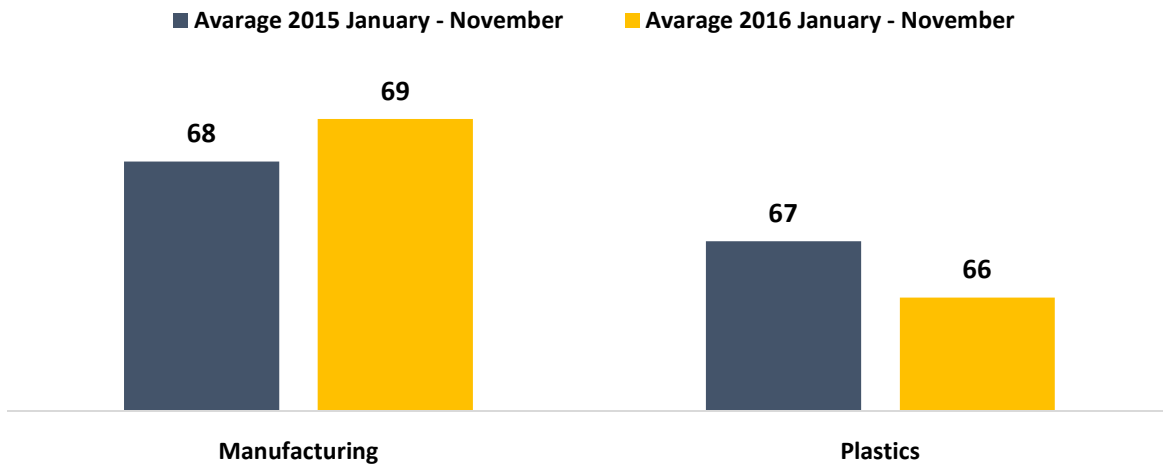


Figure 2: Capacity Utilization in Plastics Industry (%)

Source: TurkStat, TCMB

2.3. SECTORAL DISTRIBUTION OF PLASTIC PRODUCTION

It is observed that plastic packaging materials with about 3.26 million tons were followed by plastic construction materials by 1.79 million tons in total plastic products production, which was 8.2 million tons in January - November of 2016.

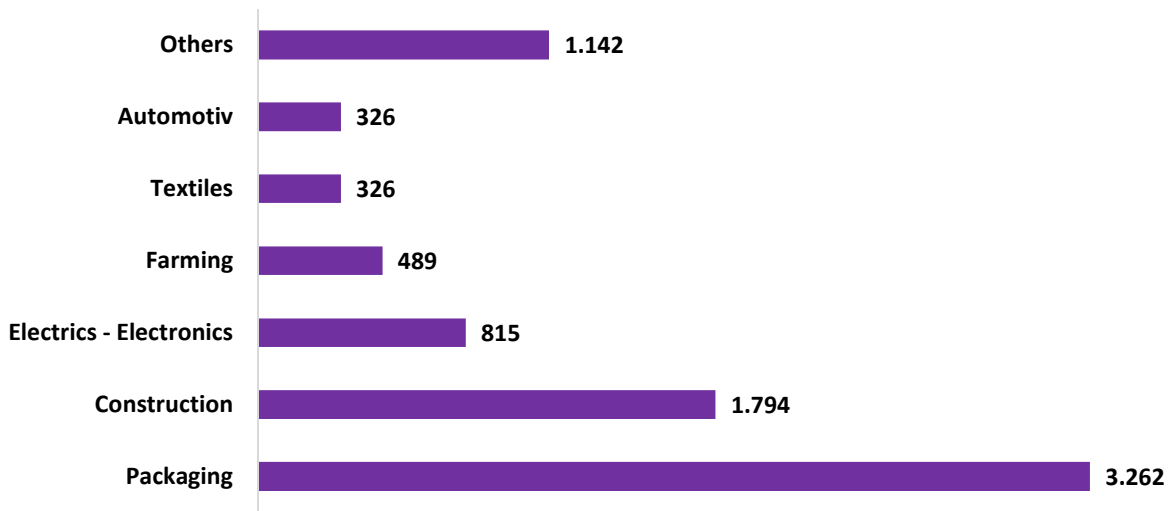


Figure 3: Production by Subsectors – 2016/11 (1000 Tons)

2.4. MACHINERY INVESTMENTS OF PLASTICS INDUSTRY

In the period of 2011-2015, an average of 821 million dollars of machinery and equipment investment has been realized in the plastics industry, 36 % of total investment is made by presses and other machines, 23 % by injection, 18 % by extrusion, 5 % by thermoform, 3 % of them are blow molding and 14 % of them are parts and components.

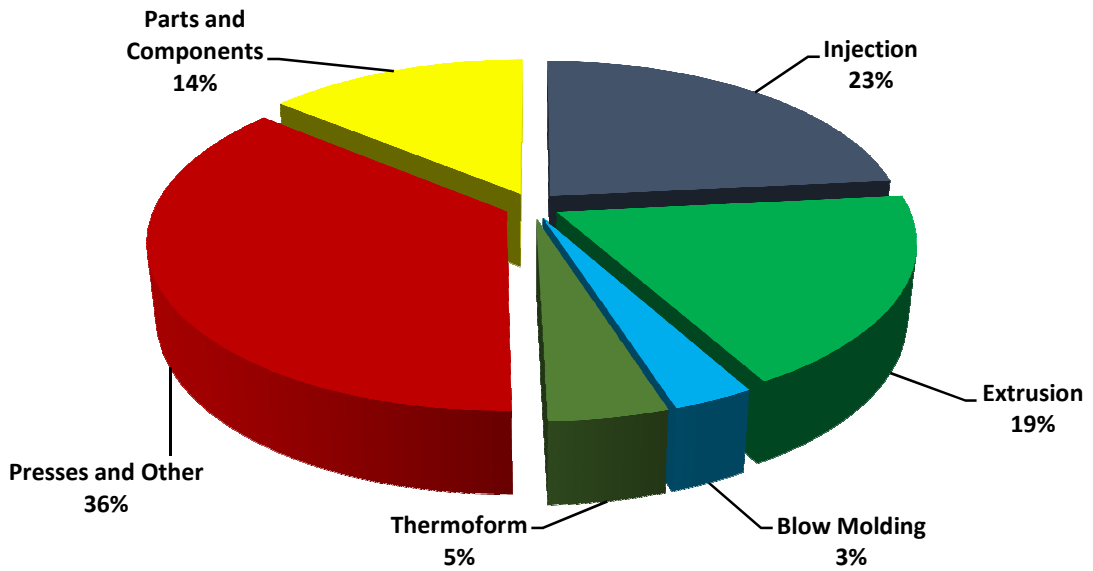


Figure 4: Total Machinery Investments of Plastics Industry in 2011 – 2015 Period

The investment of machinery and equipment in the plastics sector was realized as 789 million dollars in January - November of 2016. By the end of 2016, the sector's machinery and equipment investment is expected to rise to 861 million dollars and will increase by 2.6 % compared to 2015.

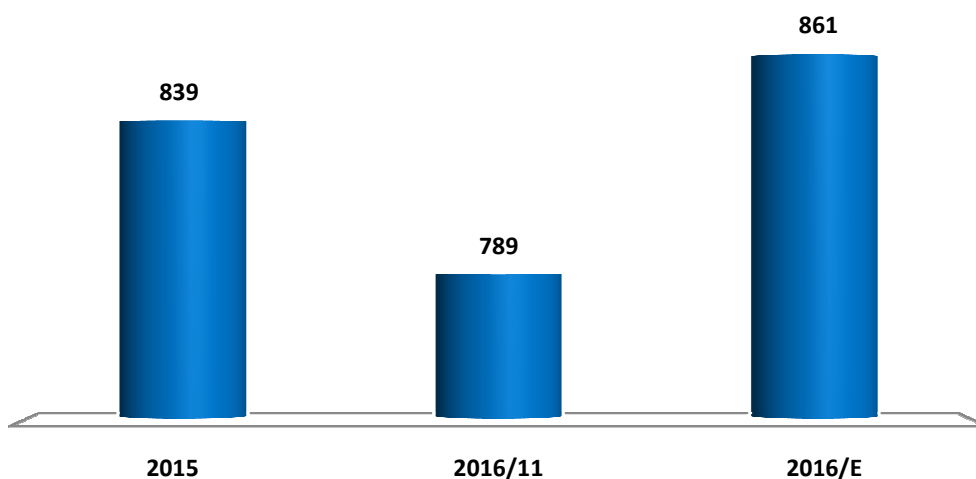


Figure 5: Machinery and Equipment Investments of Plastics Industry (USD Million)

Source: TurkStat

In the January - November period of 2016, 34 % of the total machinery investment of USD 789 million in the sector was made by presses and other machines, 21 % by injection machines, 20 % by parts and components and 17 % by extrusion machines. Thermoforming and blow molding machines accounted for 5 % and 3 % shares of total investment.

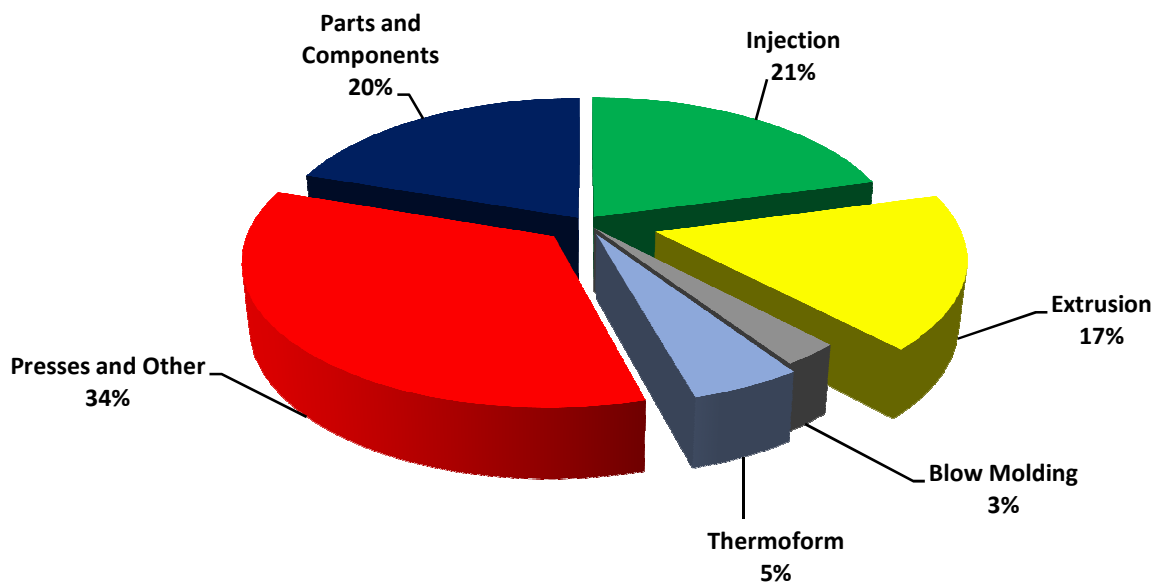


Figure 6: Machinery and Equipment Investments of Plastics Industry (2016/11)

2.5. PLASTICS END PRODUCTS IMPORTS

In the January - November period of 2016, 540 thousand tons and 2 billion 683 million dollars of plastics end products were imported. With the same trend, it is estimated that total plastic goods imports will reach 589 thousand tons and 2 billion 926 million dollars at the end of the year.

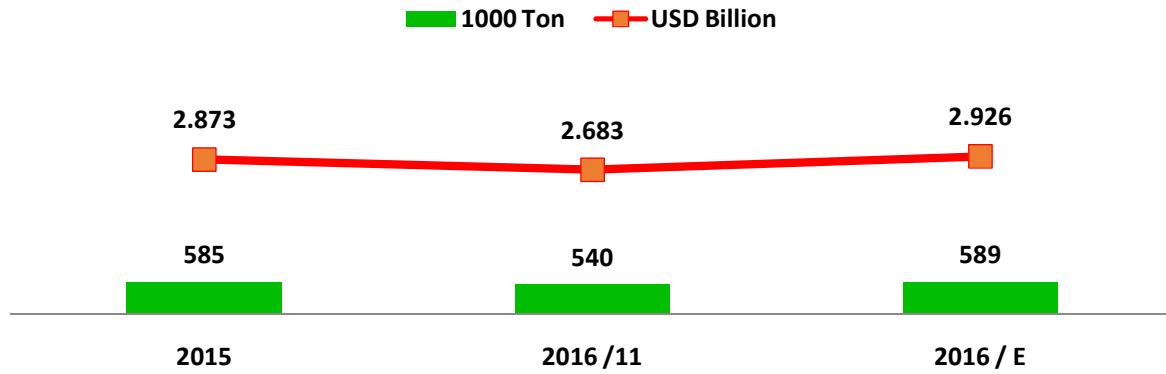


Figure 7: Plastics End Products Imports

Source: TurkStat

In January - November of 2016, the highest imports by volume and value basis were realized in the product group of 3920 HS Code (other plates, sheets, pellets, foils and slides made of plastic). Imports of products in this HS Code number accounted for 42 % of the total imports of plastic products and 31 % of value-based imports.

HS CODE	PLASTIC PRODUCTS DEFINITIONS	2015	2016/11	2016/E	% Increase 2016/2015 (E)
3916	Monofilament, bar, profiles from plastic-cross section over 1mm	12	12	14	10
3917	Tubes, pipes, hoses from plastic; gasket, elbow, union etc	24	24	26	8
3918	Floor coverings from plastic – incl. wall and ceiling coverings	28	21	23	-20
3919	Adhesive plate, sheet, strip, slide, etc. from plastic; flat	57	53	58	0
3920	Other plate, sheet, pellicule and slides from plastic	256	227	248	-3
3921	Other plates, sheets, pellicules, foils and slides from plastic	65	59	64	-2
3922	Bathtub, shower, sink, bidet, water-closet pan and hardware from plastic	5	4	4	-10
3923	Plastic products for moving furniture, tap, cap, capsule	47	56	61	29
3924	Table, kitchen and other household furniture, toiletry form plastic	12	10	10	-10
3925	Construction materials from plastic	10	10	10	5
3926	Other goods from plastic	68	65	71	4
	Total imports	585	540	589	1

Table 2: Plastics End Products Imports by HS Codes (1000 Tons)

Source: TurkStat

HS CODE	PLASTIC PRODUCTS DEFINITIONS	2015	2016/11	2016/E	% Increase 2016/2015 (E)
3916	Monofilament, bar, profiles from plastic-cross section over 1mm	52	52	56	8
3917	Tubes, pipes, hoses from plastic; gasket, elbow, union etc	197	189	207	5
3918	Floor coverings from plastic – incl. wall and ceiling coverings	69	82	89	29
3919	Adhesive plate, sheet, strip, slide, etc. from plastic; flat	323	306	333	3
3920	Other plate, sheet, pellicule and slides from plastic	922	831	907	-2
3921	Other plates, sheets, pellicules, foils and slides from plastic	254	229	250	-2
3922	Bathtub, shower, sink, bidet, water-closet pan and hardware from plastic	49	38	41	-15
3923	Plastic products for moving furniture, tap, cap, capsule	221	248	270	22
3924	Table, kitchen and other household furniture, toiletry form plastic	81	62	67	-17
3925	Construction materials from plastic	47	37	40	-15
3926	Other goods from plastic	658	610	665	1
	Total imports	2.873	2.683	2.926	2

Table 3: Plastics End Products Imports by HS Codes (USD Million)

Source: TurkStat

2.6. IMPORTS OF PLASTIC PRODUCTS BY COUNTRIES

Every year, Turkey imports plastic products from more than 100 countries. In the January - November period of 2016, the number of countries importing plastic products was 138. Imports from 10 countries in 2015 accounted for 72 % of total imports on amount basis, 76 % on a value basis and the share of total imports in the first 10 countries remained at the same levels in January - November 2016.

China is the country where most imports of plastic products were made. China shared 27 % of total imports on a quantity basis and 21 % on a value basis while Germany, Italy, South Korea and France constituted the countries which Turkey imports the largest plastic products after China.

2015					2016/11				
Countries	1000 Tons	USD Million	Ton - %	\$ - %	Countries	1000 Tons	USD Million	Ton - %	\$ - %
China	158	633	27	22	China	144	554	27	21
Germany	94	538	16	19	Germany	86	499	16	19
Italy	47	235	8	8	Italy	47	230	9	9
S. Korea	33	188	6	7	S. Korea	31	194	6	7
France	26	165	4	6	France	26	170	5	6
USA	11	123	2	4	USA	12	117	2	4
U.K.	13	102	2	4	U.K.	11	88	2	3

Belgium	18	80	3	3	Belgium	14	65	3	2
Spain	11	58	2	2	Japan	5	60	1	2
Netherland	10	49	2	2	Spain	10	56	2	2
10 Countries	419	2,170	72	76	10 Countries	386	2.032	72	76
Others	165	703	28	24	Others	154	650	28	24
TOTAL	585	2,873	100	100	TOTAL	540	2.683	100	100

Table 4: Plastics End Products Imports by the Main 10 Countries

Source: TurkStat

2.7 PLASTICS END PRODUCTS EXPORTS

In the January - November period of 2016, 1 million 421 thousand tons and 3 billion 775 million dollars of plastics end products were exported. With the same trend, it is expected that exports of plastics end products will realise as 1 million 550 thousand tons and 4 billion 118 million dollars by the end of the year, declining by 2 % on amount basis and 5 % by value basis compare to 2015.

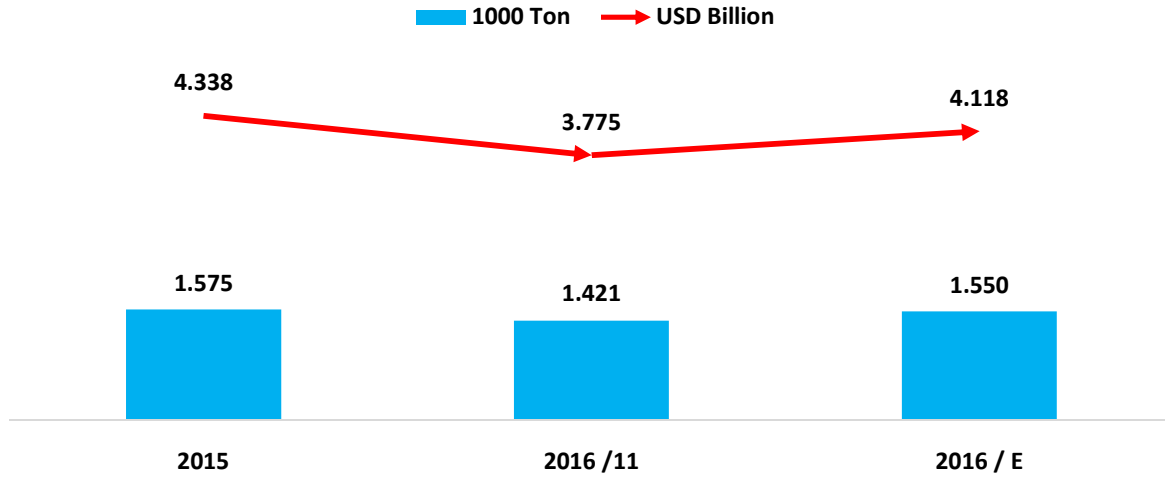


Figure 8: Plastics End Products Exports

Source: TurkStat

In the January - November period of 2016, the largest exports of 3920 (other plates, sheets, pellets and lamellae in plastic) and 3923 (plastics products, containers, caps, capsules for goods transport packaging) in volume and value basis were realized in the product groups. The exports of these products accounted for 46 % on amount basis and 42 % on value basis of total exports.

HS CODE	PLASTIC PRODUCTS DEFINITIONS	2015	2016/11	2016/E	% Increase 2016/2015 (E)
3916	Monofilament, bar, profiles from plastic-cross section over 1mm	156	134	147	-6
3917	Tubes, pipes, hoses from plastic; gasket, elbow, union etc	283	197	214	-24
3918	Floor coverings from plastic – incl. wall and ceiling coverings	15	12	13	-10
3919	Adhesive plate, sheet, strip, slide, etc. from plastic; flat	19	18	20	1
3920	Other plate, sheet, pellicule and slides from plastic	339	339	370	9
3921	Other plates, sheets, pellicules, foils and slides from plastic	129	127	139	8
3922	Bathtub, shower, sink, bidet, water-closet pan and hardware from plastic	24	22	24	-1
3923	Plastic products for moving furniture, tap, cap, capsule	324	308	336	4
3924	Table, kitchen and other household furniture, toiletry form plastic	111	110	120	8
3925	Construction materials from plastic	106	86	94	-11
3926	Other goods from plastic	69	67	73	7
	Total imports	1.575	1.421	1.550	-2

Table 5: Exports of Plastics End Products by HS Codes (1000 Tons)

Source: TurkStat

HS CODE	PLASTIC PRODUCTS DEFINITIONS	2015	2016/11	2016/E	% Increase 2016/2015 (E)
3916	Monofilament, bar, profiles from plastic-cross section over 1mm	297	231	252	-15
3917	Tubes, pipes, hoses from plastic; gasket, elbow, union etc	718	508	555	-23
3918	Floor coverings from plastic – incl. wall and ceiling coverings	30	23	26	-14
3919	Adhesive plate, sheet, strip, slide, etc. from plastic; flat	115	105	114	-1
3920	Other plate, sheet, pellicule and slides from plastic	915	849	926	1
3921	Other plates, sheets, pellicules, foils and slides from plastic	386	368	402	4
3922	Bathtub, shower, sink, bidet, water-closet pan and hardware from plastic	107	92	100	-7
3923	Plastic products for moving furniture, tap, cap, capsule	809	743	811	0
3924	Table, kitchen and other household furniture, toiletry form plastic	346	324	354	2
3925	Construction materials from plastic	264	199	217	-18
3926	Other goods from plastic	351	331	361	3
	Total imports	4.338	3.775	4.118	-5

Table 6: Exports of Plastics End Products by HS Codes (1000 \$)

Source: TurkStat

2.8. PLASTICS END PRODUCTS EXPORTS BY COUNTRIES

Turkey exports plastic end products to more than 200 countries. Plastic products were exported to 205 countries in January - November of 2016. In 2015, 10 countries accounted for 46 % on amount and 45 % on value basis of total exports. In January - November of 2016, the share of total exports in 10 countries increased to 47 % while on amount basis the value base remained at the same level. Iraq, Germany, UK, France and Israel formed the most exported plastic markets as it was in 2015 in January - November 2016.

Countries	2015				Countries	2016/11			
	1000 Tons	USD Million	Ton - %	\$ - %		1000 Tons	USD Million	Ton - %	\$ - %
Iraq	227	464	14	11	Iraq	182	341	13	9
Germany	82	266	5	6	Germany	81	276	6	7
U.K.	75	218	5	5	U.K.	72	181	5	5
France	51	172	3	4	France	48	155	3	4
Israel	61	151	4	3	Israel	67	151	5	4
Azerbaijan	53	149	3	3	Romania	51	132	4	4
Iran	41	139	3	3	Italy	48	126	3	3
Romania	52	134	3	3	Iran	39	121	3	3
Italy	44	126	3	3	Bulgaria	41	116	3	3
Russian Fed.	37	123	2	3	Georgia	43	95	3	3
10 Countries	724	1,943	46	45	10 Countries	670	1.695	47	45
Others	851	2,395	54	55	Others	751	2.080	53	55
TOTAL	1,575	4,338	100	100	TOTAL	1.421	3.775	100	100

Table 7: Plastics End Products Exports by the Main 10 Countries

Source: TurkStat

2.9. PLASTICS END PRODUCTS FOREIGN TRADE PRICES

Unit import prices for plastic products have always remained above the unit export prices since 2000.

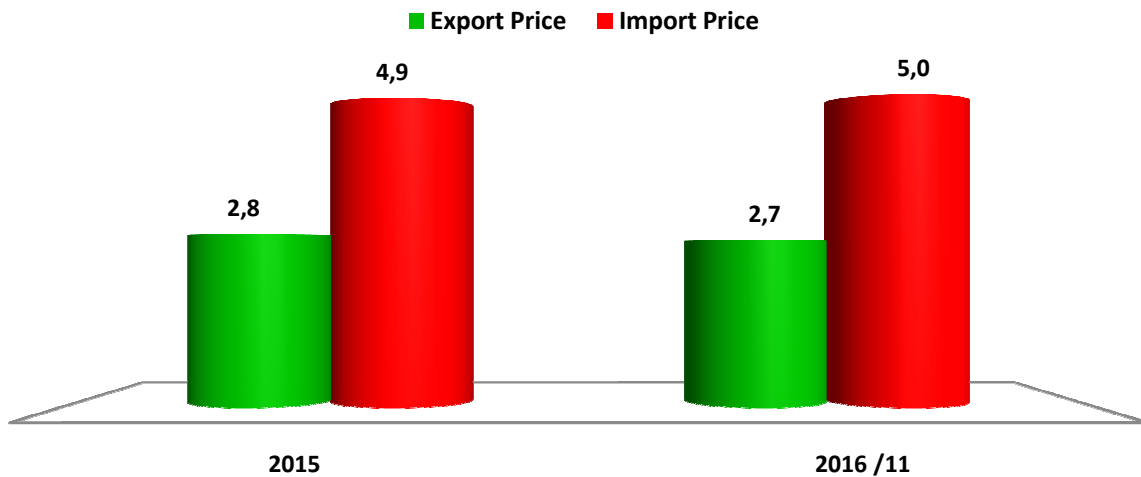


Figure 9: Average Unit Foreign Trade Prices For Plastics End Products

In January - November 2016, the average import prices of plastic products were 5.0 \$/kg and the average export prices were 2.7 \$/kg. The average import price increased by 1 % and the average export price decreased by 4 % compared to the year 2015.

HS Code	Import Prices			Export Prices		
	2015	2016/11	% Increase	2015	2016/11	% Increase
3916	4,26	4,17	-2	1,90	1,72	-9
3917	8,25	7,98	-3	2,54	2,59	2
3918	2,47	3,97	61	2,01	1,93	-4
3919	5,62	5,78	3	5,95	5,82	-2
3920	3,60	3,66	1	2,70	2,50	-7
3921	3,88	3,90	0	3,00	2,89	-4
3922	9,93	9,35	-6	4,42	4,16	-6
3923	4,69	4,45	-5	2,50	2,41	-3
3924	6,94	6,43	-7	3,11	2,95	-5
3925	4,67	3,81	-18	2,48	2,31	-7
3926	9,66	9,38	-3	5,10	4,93	-3
Average	4,91	4,97	1	2,75	2,66	-4

Table 8: Average Unit Foreign Trade Prices For Plastics End Products (\$/kg)

2.10. FOREIGN TRADE SURPLUS IN PLASTICS END PRODUCTS

Turkey always gives surplus in foreign trade of plastic end products. The foreign trade surplus of 882 thousand tons and 1 billion 92 million dollars realized in the January - November period of 2016. If it follows by the same trend, foreign trade surplus is expected to be 962 thousand tons and 1 billion 191 million dollars at the end of the year decreasing by 3 % on amount and by 19 % compare to 2015.

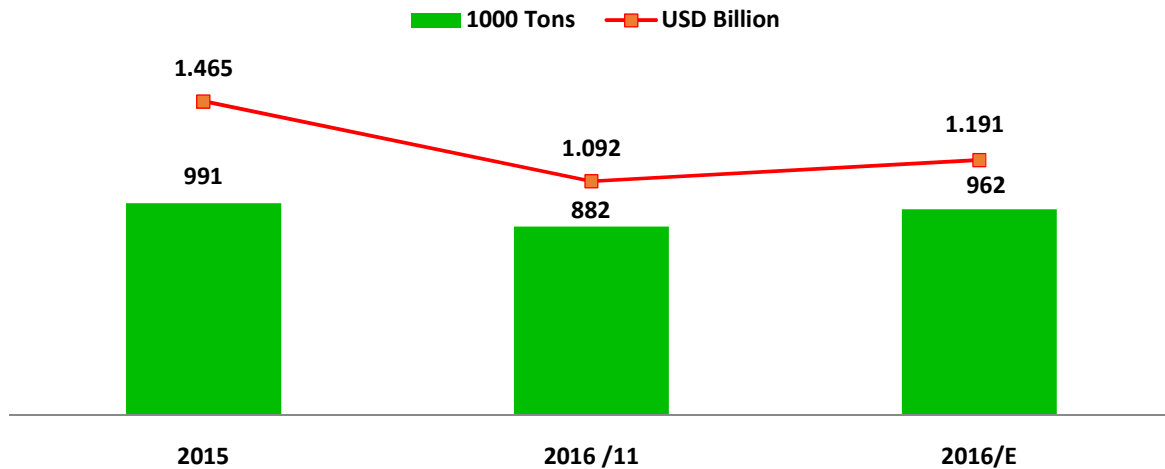


Figure 10: Surplus in Foreign Trade of Plastics End Products

2.11. DOMESTIC CONSUMPTION IN PLASTICS END PRODUCTS

In the January - November period of 2016, domestic consumption of 7.3 million tons and 30 billion dollars was realized. If consumption continues at the same trend, it will be 7.9 million tons and 32.7 billion dollars at the end of the year and it is estimated that domestic consumption will increase by 4 % compared to 2015.

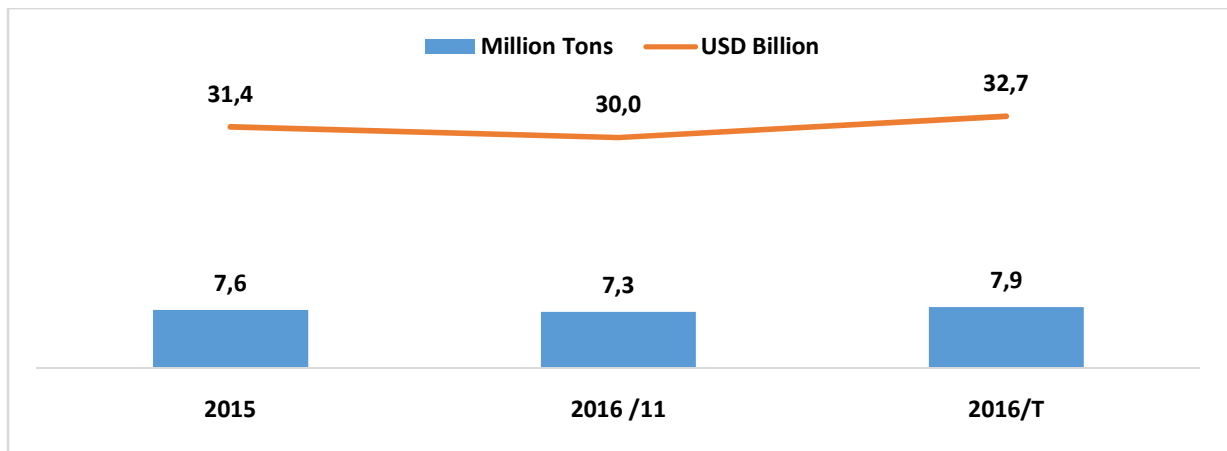


Figure 11: Plastics End Products Domestic Consumption

In the January - November period of 2016, approximately 3.65 million tons of total 7.3 million tons of plastics domestic consumption was exported indirectly by the exporting sectors such as automotive, packaging, construction and electronics as well as semi - finished products and finished products. The remaining 3.65 million tons was consumed directly by the consumer in the domestic market.

2.12. PLASTICS END PRODUCTS SUPPLY AND DEMAND EQUILIBRIUM

The increase in plastic domestic market consumption and indirect exports has also been the engine of production increase in plastic products in January - November of 2016. In summary,

- ✓ Production realised as 8.16 million tons and 31 billion dollars. Production is expected to increase to 8.9 million tonnes and 33.9 billion dollars by the end of 2016, increasing by 4 % on a volume and by 3.3 % on value base compared to 2015.
- ✓ Imports realized as 540 thousand tons and 2.68 billion dollars. By the end of 2016, it is expected that imports will increase to 589 thousand tons and 2.93 billion dollars increasing by 1 % on amount and by 1.9 % on value basis compared to 2015.
- ✓ Exports were realized as 1 million 421 thousand tons and 3.78 billion dollars. Exports are expected to increase to 1 million 550 thousand tons and 4 billion 118 million dollars by the

end of the year decreasing by 2 % on amount and by 5 % on value basis compared to the year 2015.

- ✓ Domestic consumption including indirect exports realized as 7 million 273 thousand tons and 24.2 billion dollars. It is expected that domestic consumption will increase to 7.9 million tons and 30 billion dollars by 2016 increasing by 5 % on amount and 4.3 % on value basis compared to the year 2015.
- ✓ The foreign trade surplus realized as 882 thousand tons and 1 billion 92 million dollars. At the end of the year, it is expected that foreign trade surplus will decrease by 3 % on amount and by 18.7 % on value basis compared to the year 2015.
- ✓ 17 % in quantity basis and 12 % in value basis of domestic production has been exported.
- ✓ 7 % on amount and 9 % on a value basis of total domestic consumption, including indirect exports, was imported.
- ✓ The import coverage ratio of exports realized as 263 % on amount and 141 % on value basis.

	2015	2016/11	2016 (E)	% Increase (E) 2016/2015
Production	8.568	8.155	8.896	4
Imports	585	540	589	1
Exports	1.575	1.421	1.550	-2
Domestic Consumption	7.577	7.273	7.934	5
Foreign Trade Surplus	991	882	962	-3
Exports/Production (%)	18	17	17	
Imports / Domestic Consumption (%)	8	7	7	
Exports/Imports (%)	269	263	263	

Table 9: Supply and Demand Equilibrium in Plastics End Products (1000 Tons)

	2015	2016 /10	2016 (E)	% Increase (E) 2016/2015
Production	32.846	31.100	33.927	3,3
Imports	2.873	2.683	2.926	1,9
Exports	4.338	3.775	4.118	-5,1
Domestic Consumption	31.381	30.008	32.736	4,3
Foreign Trade Surplus	1.465	1.092	1.191	-18,7
Exports/Production (%)	13	12	12	
Imports / Domestic Consumption (%)	9	9	9	
Exports/Imports (%)	151	141	141	

Table 10: Supply and Demand Equilibrium in Plastics End Products (USD Million)

3. TURKISH PLASTICS RAW MATERIALS INDUSTRY

3.1. PLASTICS RAW MATERIALS PRODUCTION

Total plastic raw material production is estimated to be around 930 thousand tons in January-November 2016 period.

	1000 Tons
LDPE	288
PET	223
PVC	130
PP	121
PS	84
HDPE	84
TOTAL	930

Table 11: Plastics Raw Materials Production (2016/11)

Source: PETKİM and Other Producers

In Turkey, 31 % of the total plastic raw materials produced in the January - November period of the year 2016 is LDPE. On the other hand, 9 % of total production has been formed by HDPE, 14 % by PVC, 13 % by PP, 9 % by PS and 24 % by PET.

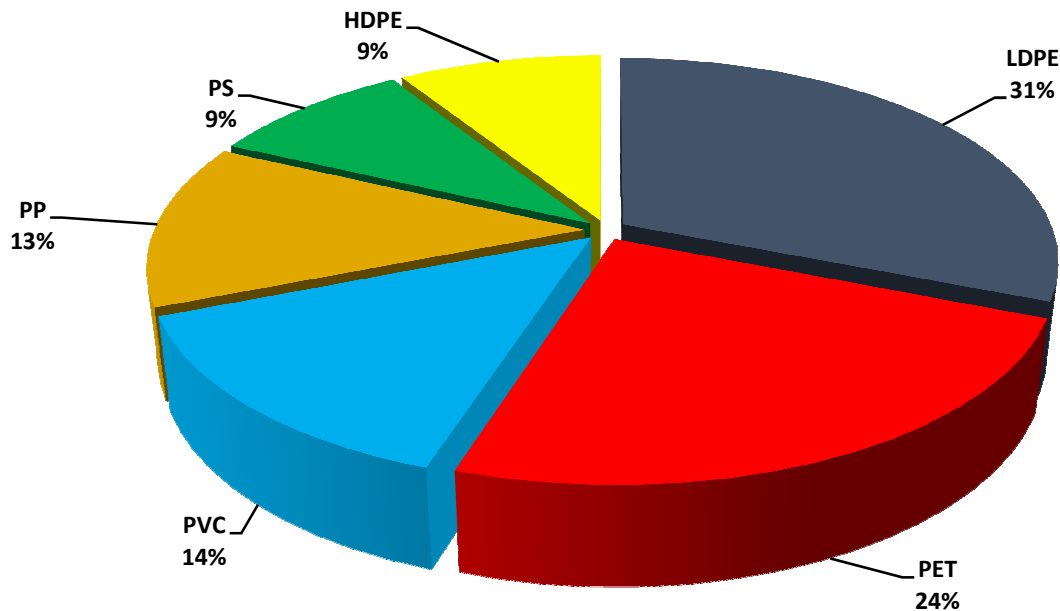


Figure 12: Plastics Raw Materials Production (2016/11)

Source: PETKİM and Other Producers

3.2. PLASTICS RAW MATERIALS IMPORTS

In January - November period of 2016, 6 million 2 thousand tons and 8 billion 19 million dollars of plastic raw materials were imported. Imports of plastic raw materials are expected to increase by 4 % on volume basis, decrease by 7 % and realise as 6 million 548 thousand tons and 8 billion 748 million dollars at the end of 2016.

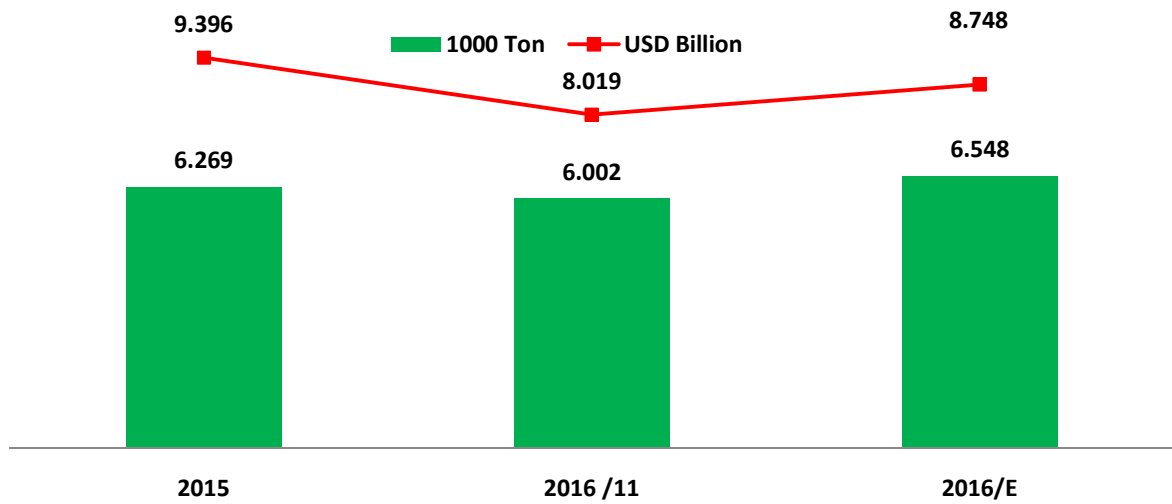


Figure 13: Plastics Raw Materials Imports

Source: TurkStat

In January - November of 2016, the highest imports were realized by polyethylene and polypropylene on amount and value basis. The imports of these two raw materials have received a total share of 54 % on amount basis and 57 % on value basis of total plastic raw material imports.

HS Code	CN Description	2015	2016/11	2016/E	% Increase 2016/2015 (E)
3901	Ethylene polymers (initial forms)	1.600	1.567	1.710	7
3902	Propylene and polymers of other olefins (initial forms)	1.943	1.865	2.034	5
3903	Styrene polymers (initial forms)	512	473	516	1
3904	Other olefin polymers with vinyl chloride/halogenous	834	693	756	-9
3905	Vinyl acetat/polymers of other vinyl esters (initial forms)	42	42	46	9
3906	Acrylic polymers (initial forms)	198	191	208	5
3907	Polyacetals, other polyethers, epoxide-alkyd resins (initial forms)	628	633	691	10
3908	Polyamides (initial forms)	87	86	94	8
3909	Amino resins, phenolic resins, polyurethanes (initial forms)	217	202	221	2

3910	Silicones (initial forms)	30	29	32	7
3911	Petroleum resins, coumarone, indene/coumarone-indene resin, polyterpenes	29	30	33	14
3912	Cellulose and chemical derivatives (initial form)	39	36	39	2
3913	Natural polymers, modified natural polymers, derivatives (initial forms)	3	3	4	23
3914	Polymer based ion exchangers (initial form)	6	5	5	-8
3915	Wastes, residuals and scraps from plastic	104	146	159	53
	Plastic raw materials total	6.269	6.002	6.548	4

Table 12: Plastics Raw Materials Imports by Custom Tariff Statistics Position (1000 Tons)

Source: TurkStat

HS Code	CN Description	2015	2016/11	2016/E	% Increase 2016/ 2015 (E)
3901	Ethylene polymers (initial forms)	2.406	2.151	2.346	-2
3902	Propylene and polymers of other olefins (initial forms)	2.650	2.165	2.361	-11
3903	Styrene polymers (initial forms)	795	650	709	-11
3904	Other olefin polymers with vinyl chloride/halogenous	816	642	701	-14
3905	Vinyl acetat/polymers of other vinyl esters (initial forms)	100	99	108	8
3906	Acrylic polymers (initial forms)	370	278	303	-18
3907	Polyacetals, other polyethers, epoxide-alkyd resins (initial forms)	1.174	1.049	1.144	-3
3908	Polyamides (initial forms)	213	195	213	0
3909	Amino resins, phenolic resins, polyurethanes (initial forms)	447	381	415	-7
3910	Silicones (initial forms)	111	108	118	6
3911	Petroleum resins, coumarone, indene/coumarone-indene resin, polyterpenes	89	84	91	2
3912	Cellulose and chemical derivatives (initial form)	150	138	151	0
3913	Natural polymers, modified natural polymers, derivatives (initial forms)	23	22	24	4
3914	Polymer based ion exchangers (initial form)	14	12	13	-9
3915	Wastes, residuals and scraps from plastic	36	46	50	40
	Plastic raw materials total	9.396	8.019	8.748	-7

Table 13: Plastics Raw Materials Imports by Custom Tariff Statistics Position (USD Million)

Source: TurkStat

It is seen that the high import raw materials import dependency of the Turkish Plastics Industry is continuously increasing and accounts for 87 % of the total supply.

3.3. IMPORTS OF PLASTICS RAW MATERIALS BY COUNTRIES

Turkey imports plastic raw materials from more than 100 countries. In January - November of 2016, plastic raw materials were imported from 102 countries. In the January - November period of 2016, 64 % on amount and 66 % on value basis of the total imports were realized from 10 countries.

S. Arabia, S. Korea and Germany have taken the first 3 orders in total plastic raw material imports in January - November of 2016 as 2015. The share of these 3 countries in total plastic raw material imports is around 33 % on amount and 34 % on value basis.

2015					2016/11				
Countries	1000 Tons	USD Million	Ton-%	\$ - %	Countries	1000 Tons	USD Million	Ton-%	\$ - %
S. Arabia	977	1,309	16	14	S. Arabia	981	1.131	16	14
S. Korea	607	973	10	10	S. Korea	612	819	10	10
Germany	411	882	7	9	Germany	393	787	7	10
Belgium	383	606	6	7	Belgium	349	503	6	6
Iran	352	456	6	5	Italy	219	380	4	5
Italy	238	439	4	5	Iran	335	372	6	5
Spain	263	407	4	4	France	269	347	4	4
Netherland	226	404	4	4	Spain	241	338	4	4
France	282	395	5	4	Netherland	207	338	3	4
USA	218	310	4	3	Egypt	249	268	4	3
10 Countries	3,956	6,181	63	66	10 Countries	3.856	5.282	64	66
Others	2,313	3,215	37	34	Others	2.146	2.737	36	34
Total	6,269	9,396	100	100	Total	6.002	8.019	100	100

Table 14: Plastics Raw Materials Imports by Countries

Source: TurkStat

3.4. PLASTICS RAW MATERIALS EXPORTS

690 thousand tons and 851 million dollars of plastic raw materials were exported in the January - November period of 2016. With the same trend, it is estimated that exports will increase to 753 thousand tons and 928 million dollars, increasing by 9 % on amount and decreasing by 1 % at the end of the year.

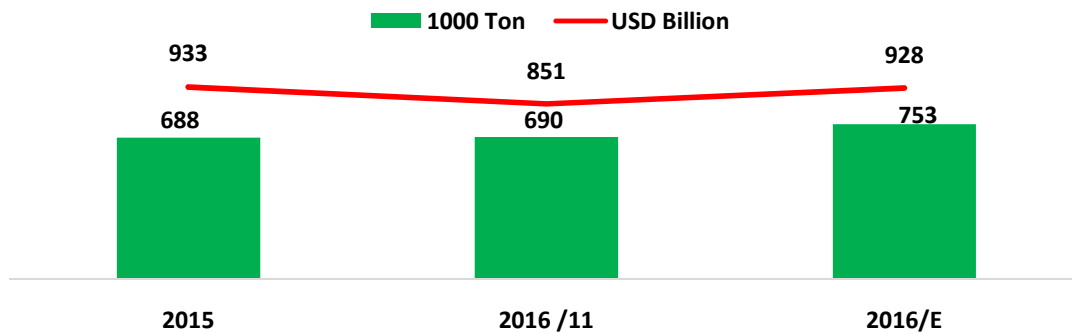


Figure 14: Plastics Raw Materials Exports

Source: TurkStat

In January - November of 2016, the largest exports by volume and value basis were realized in polyesters of 3907 CEN No. and acrylic polymers of 3906 CEN No. The raw materials in this group received a share of 52 % on amount and of 55 % on value basis of total plastics raw materials exports.

HS Code	HS Description	2015	2016/11	2016/E	% Increase 2016/2015 (E)
3901	Ethylene polymers (initial forms)	35	68	74	110
3902	Propylene and polymers of other olefins (initial forms)	28	23	25	-11
3903	Styrene polymers (initial forms)	32	25	27	-15
3904	Other olefin polymers with vinyl chloride/halogenous	18	19	20	14
3905	Vinyl acetat/polymers of other vinyl esters (initial forms)	47	49	53	14
3906	Acrylic polymers (initial forms)	167	164	179	7
3907	Polyacetals, other polyethers, epoxide-alkyd resins (initial forms)	201	197	215	7
3908	Polyamides (initial forms)	13	13	14	6
3909	Amino resins, phenolic resins, polyurethanes (initial forms)	77	75	81	5
3910	Silicones (initial forms)	6	6	6	-2
3911	Petroleum resins, coumarone, indene/coumarone-indene resin, polyterpenes	1	1	1	52
3912	Cellulose and chemical derivatives (initial form)	45	37	40	-11
3913	Natural polymers, modified natural polymers, derivatives (initial forms)	0	0	0	-7
3914	Polymer based ion exchangers (initial form)	0	0	0	7
3915	Wastes, residuals and scraps from plastic	18	16	17	-6
	Plastic raw materials total	688	690	753	9

Table 15: Plastics Raw Materials Exports by HS Codes (1000 Tons)

Source: TurkStat

HS Code	HS Description	2015	2016/11	2016/E	% Increase 2016/2015 (E)
3901	Ethylene polymers (initial forms)	52	90	98	88
3902	Propylene and polymers of other olefins (initial forms)	39	29	32	-18
3903	Styrene polymers (initial forms)	42	28	31	-25
3904	Other olefin polymers with vinyl chloride/halogenous	20	20	22	6
3905	Vinyl acetat/polymers of other vinyl esters (initial forms)	42	39	42	1
3906	Acrylic polymers (initial forms)	199	174	190	-5
3907	Polyacetals, other polyethers, epoxide-alkyd resins (initial forms)	330	295	322	-3
3908	Polyamides (initial forms)	26	22	24	-7
3909	Amino resins, phenolic resins, polyurethanes (initial forms)	91	78	85	-6
3910	Silicones (initial forms)	20	20	21	6
3911	Petroleum resins, coumarone, indene/coumarone-indene resin, polyterpenes	2	2	2	18
3912	Cellulose and chemical derivatives (initial form)	52	40	43	-16
3913	Natural polymers, modified natural polymers, derivatives (initial forms)	1	1	1	-19
3914	Polymer based ion exchangers (initial form)	0	1	1	11
3915	Wastes, residuals and scraps from plastic	16	11	12	-22
	Plastic raw materials total	933	851	928	-1

Table 16: Plastics Raw Materials Exports by HS Codes (USD Million)

Source: TurkStat

3.5. PLASTICS RAW MATERIALS EXPORTS BY COUNTRIES

Turkey exports plastic raw materials to more than 100 countries. Plastic raw materials were exported to 165 countries in January - November of 2016.

In the January - November period of 2016, 10 countries received a share of 51 % on amount and 49 % on value basis. Germany, Italy, Egypt, Iran and Russian Federation formed Turkey's top 5 markets for plastics raw material exports in January - November of 2016.

2015					2016/11				
Countries	1000 Tons	USD Million	% - Ton	% - \$	Countries	1000 Tons	USD Million	% - Ton	% - \$
Germany	66	93	10	10	Germany	59	80	9	9
Egypt	61	66	9	7	Italy	56	71	8	8
Russian Fed.	31	63	5	7	Egypt	52	50	8	6
Iran	21	47	3	5	Iran	22	44	3	5
Italy	37	46	5	5	Russian Fed.	18	35	3	4
Bulgaria	52	39	7	4	Bulgaria	43	32	6	4
Israel	25	29	4	3	Israel	26	27	4	3
Romania	22	28	3	3	Greece	37	27	5	3
Iraq	18	28	3	3	Iraq	19	25	3	3
Uzbekhistan	13	27	2	3	Spain	21	24	3	3
10 Countries	345	466	50	50	10 Countries	354	416	51	49
Others	343	467	50	50	Others	336	435	49	51
Total	688	933	100	100	Total	690	851	100	100

Table 17: Plastics Raw Materials Exports by Countries

Source: TurkStat

3.6. PLASTICS RAW MATERIALS FOREIGN TRADE UNIT PRICES

In the January - November period of 2016, the average import price of plastic raw materials has been realized as 1.34 \$/kg and it has decreased by 11 % compared to 2015.

In the same period, the average unit export price of plastic raw material was realized as 1.23 \$/kg and decreased by 9 % compared to 2015.

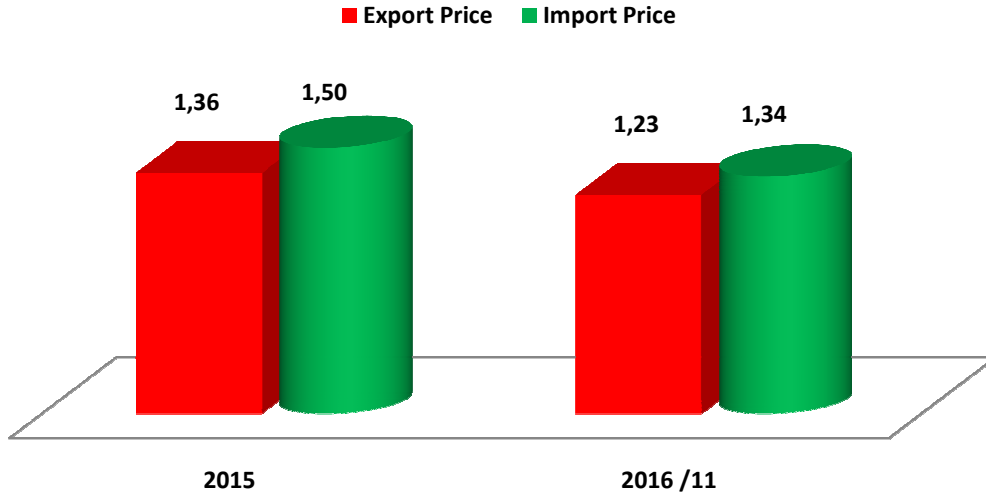


Figure 15: Plastics Raw Materials Average Foreign Trade Prices (\$/kg)

In January - November of 2016, Turkey's average import prices of plastic raw materials were realized at about 9 % above export prices. In other words, Turkey imports larger value added plastic raw materials and exports lower value added raw materials.

HS Code	Import Prices			Export Prices		
	2015	2016/11	% İncresae	2015	2016/11	% İncresae
3901	1,50	1,37	-9	1,48	1,32	-11
3902	1,36	1,16	-15	1,38	1,27	-8
3903	1,55	1,37	-12	1,31	1,15	-12
3904	0,98	0,93	-5	1,15	1,07	-7
3905	2,36	2,35	0	0,90	0,80	-11
3906	1,87	1,46	-22	1,19	1,06	-11
3907	1,87	1,66	-11	1,64	1,50	-9
3908	2,45	2,27	-7	1,98	1,74	-12
3909	2,06	1,88	-9	1,18	1,05	-11
3910	3,74	3,71	-1	3,18	3,47	9
3911	3,13	2,80	-10	3,95	3,06	-22
3912	3,91	3,83	-2	1,16	1,09	-6
3913	7,64	6,50	-15	6,12	5,32	-13
3914	2,45	2,42	-1	3,09	3,21	4
3915	0,34	0,31	-8	0,89	0,74	-17
Average	1,50	1,34	-11	1,36	1,23	-9

Table 18: Plastics Raw Materials Average Import and Export Prices by HS Codes (\$/kg)

3.7. PLASTICS RAW MATERIALS FOREIGN TRADE DEFICIT

Turkey is a country that provides foreign trade deficit in foreign trade of plastic raw materials. In January - November period of 2016, plastic raw material foreign trade deficit was realized as 5 million 312 thousand tons and 7 billion 168 million dollars. It is estimated that the foreign trade deficit in plastic raw materials will be 5 million 795 thousand tons and 7 billion 820 million dollars at the end of 2016 decreasing by 3.8 % on amount and 7.6 % on value basis compared to 2015.

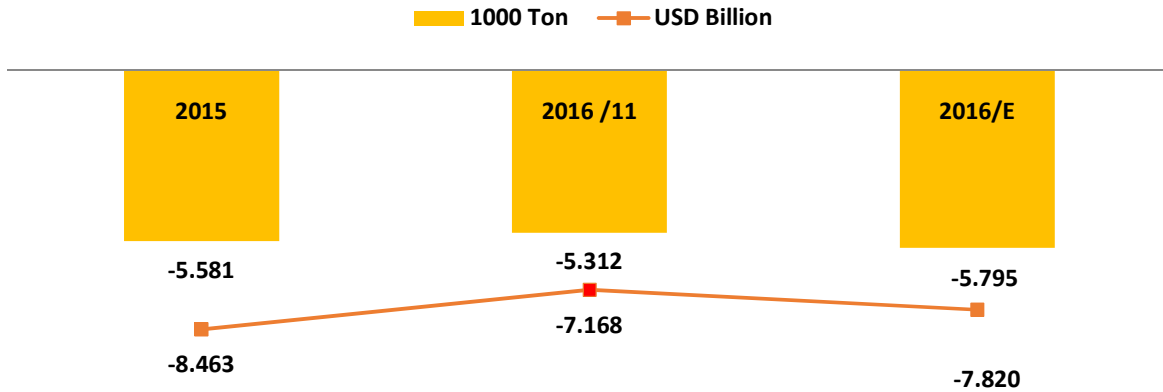


Figure 16: Plastics Raw Materials Foreign Trade Deficit

3.8. PLASTICS RAW MATERIALS DOMESTIC CONSUMPTION

In the January - November period of the year 2016, domestic consumption of plastic raw material was 6.2 million tons and it is expected to increase to 6.8 million tons at the end of the year increasing by 3 % compared to 2015.

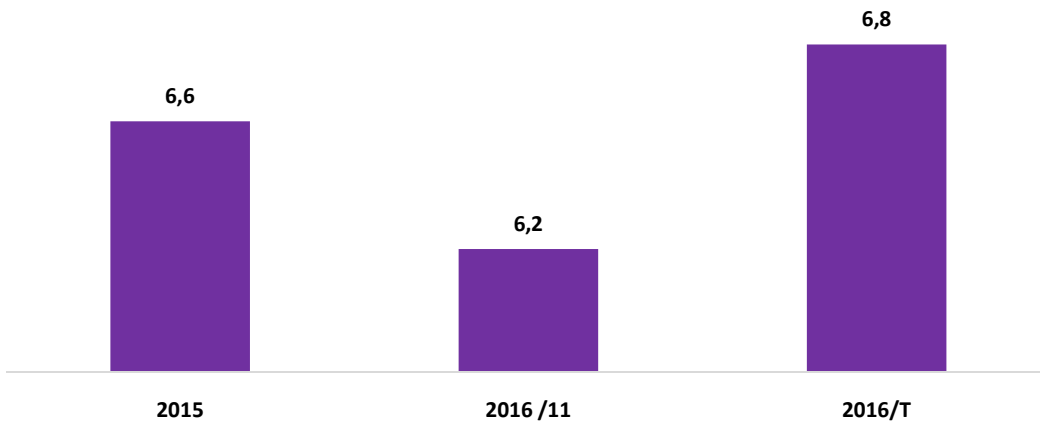


Figure17: Plastics Raw Materials Domestic Consumption (Million Tons)

3.9. SUPPLY AND DEMAND EQUILIBRIUM IN PLASTICS RAW MATERIALS INDUSTRY

Taking the January - November period of 2016 into consideration, plastic raw material at the end of 2016 compared to 2015;

- ✓ Production will maintain at its 2015 level,
- ✓ Imports will increase to 6.55 million tons increasing by 4 %,
- ✓ Exports will increase to 753 thousand tons increasing by 9 %,
- ✓ Domestic consumption will increase to 6.8 million tons increasing by 3 %,
- ✓ The foreign trade deficit will increase to 5.8 million tons increasing by 3 %,
- ✓ The share of imports in the total supply will be 87 %,
- ✓ The ratio of exports to imports will be 11 %.

	2015	2016/11	2016 (E)	% Increase (E) 2016/2015
Production	1.014	930	1.014	0
Imports	6.269	6.002	6.548	4
Exports	688	690	753	9
Domestic Consumption	6.595	6.241	6.809	3
Foreign Trade Surplus	-5.581	-5.312	-5.795	4
Exports/Production (%)	68	74	74	
Imports / Domestic Consumption (%)	86	87	87	
Exports/Imports (%)	11	11	11	

Table 19: Supply and Demand Equilibrium in Plastics Raw Materials (1000 Tons)

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 can not 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 dollars export target of the chemical industry. In order 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 for increasing profitability. It is necessary to implement changes in the changing world beyond the known method of saving techniques in order to create a successful competition that makes the difference in cost.

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.

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

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 the sector 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 can not meet the need, importing obstacles must be removed. The plastics 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 plastics sector must be supported at least on one province of each region. Necessary precautions should be taken for qualified staff in the sector.

PAGEV which is the "Connective 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".

4.1. 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 is becoming an indispensable material for the 21st century.

Turkish Plastics Industry which is one of the fastest growing sectors in our country despite being young, is the 6th in the world and the 2nd 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, "Connective Power" of the Turkish Plastics industry, is leading the industry with the "PAGEV Plastics Center of Excellence" for realizing this purpose. The mission of the PAGEV Plastics Center of Excellence will include the following activities.

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

With the Center of Excellence, the test and laboratory support that the plastics 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 and knowledge sharing in the industry will be developed by the Center and preparing detailed training programs will be 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.

By PAGEV Plastics Center of Excellence, which will be established by strategic cooperation, it is aimed to grow the plastics industry faster with its traceable targets, scientific quality and high potential for commercialization,

Upon completion of PAGEV Plastics Center of Excellence, which will have an area of over 30 thousand m², 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 plastics 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, PAGEV Plastics 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 plastics 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.



4.2. INTERNATIONAL REGIONAL PLASTICS MANUFACTURING CENTER

Although the Turkish Plastics Sector, with its process capacity reaching 9 million tons, has the 6th largest plastics production capacity in the world and 2nd 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 plastics 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 plastics production center, which Turkey aims to establish in South East Anatolia Region.

In the Center, to be established with the win - win principle, the plastic 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.