



PLASTIC INDUSTRY

Economic Research Department

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Ayşe Özden

Manager

aozden@atbank.com.tr

Laden Bulut

Assistant Specialist

lbulut@atbank.com.tr

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1. ECONOMIC OUTLOOK

In the third quarter of 2018, the Fed raised its interest rates to 2.00-2.25% with the vote of the members as expected, creating a strong expectation that interest rates will increase once within the rest of the year. While FED's interest rate hikes continue to be a risk factor for global markets, the European Central Bank's announcement that it will end its bond buying program at the end of this year. Those steps from central banks have put pressure on emerging economies, particularly those with high external financing needs, pointing out that tight global liquidity conditions in the upcoming period.

In the first half of 2018, the trade battles that began with the US taxes on imports of aluminum and steel continue to be the main agenda of the global economy and continue to cause foreign fund outflows from emerging economies, especially from China. Oil prices continue to be under pressure with US embargo to Iran and concerns over trade wars.

In the second quarter of the year, the US economy continues to support the normalization of monetary policy, with annual growth performance of 4.1%. The European economy, which left elections and political tensions behind, grew 2.2% year-on-year in the second quarter. China's growth, on the other hand, lost some momentum and became 6.7% in the second quarter of the year. In developed economies, inflation is approaching the 2% target and the Central Bank's normalization steps are more in the foreground, trade war worries, rising global interest rates and slowing growth in emerging countries, especially in China, are also limiting the global growth.

The IMF has revised its global trade volume growth estimates for the current year and 2019, while stressing that the tension in international trade affects global economic growth in the July update of the World Economic Outlook report, leaving global growth forecasts unchanged.

IMF Estimations				
July Estimations (%)			Change (% point)	
	2018	2019	2018	2019
Growth				
World	3,9	3,9	0,0	0,0
Developed Economies	2,4	2,2	-0,1	0,0
United States	2,9	2,7	0,0	0,0
Eurozone	2,2	1,9	-0,2	-0,1
United Kingdom	1,4	1,5	-0,2	0,0
Japan	1,0	0,9	-0,2	0,0
Developing Economies	4,9	5,1	0,0	0,0
Russia	1,7	1,5	0,0	0,0
China	6,6	6,4	0,0	0,0
Brazil	1,8	2,5	-0,5	0,0
Turkey	4,2	3,9	-0,2	-0,1
Inflation				
Developed Economies	2,2	2,2	0,2	0,3
Developing Economies	4,4	4,4	-0,2	0,1
Increase in World Trade	4,8	4,5	-0,3	-0,2

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In the domestic side, Turkey's economy grew by 5.2% in the first quarter of 2018 mainly driven by positive performance of domestic consumption and export. On the back of the quarterly data, Turkish economy grew by 6.2% in the first half of this year. Leading indicators for the third quarter of the year point to a loss of momentum in economic activity. In this slowdown, factors such as the significant depreciation of the TL in the first half of the year on an annual basis, the increase in foreign currency borrowing costs, the widening current account deficit, double-digit inflation and the rise in TL interest rates have been effective, while the announcements coming from the new cabinet pointed out that the tight stance will be maintained in public finance supporting the slowing tendency of the trend.

On the inflation side, headline inflation rose to 18% in the first eight months of the year. Producer inflation increased by 32% year-on-year, indicating that the cost pressure on consumer prices will continue in the coming period. On the current balance side, the 12-month cumulative current account deficit in the first half of 2018 has increased to USD 54.6 billion. We anticipate that the contraction in the current account deficit will continue until the end of the year due to the slowdown in domestic demand, contraction in foreign trade and the recovery in the tourism industry.

Credit ratings agency Fitch lowered Turkey's credit rating to "BB +" level to "BB" level and changed the credit outlook to 'negative'. The downside risks on macroeconomic stability have been strengthened by such factors as the jump in the inflation, the increase in the current account deficit, the difficulties in external financing conditions and the negative effect of the rapid depreciation of the TL on the private industry.

From the first quarter of 2018, the TL is among the most depreciating currencies against the Dollar. In this depreciation, the stretched diplomatic relations with the United States come to the forefront while increasing debt burden, current account financing needs and high inflation play a role domestically. The Central Bank of Turkey increased its policy rate to 24.0% against the decrease in TL.

	Macroeconomics Estimates							
	2012	2013	2014	2015 T	2016	2017	2018T	2019T
GDP (TL bn)	1.570	1.810	2.044	2.338	2.591	3.105	3.660	4.261
GDP (\$ billion)	858	950	935	862	857	851	719	636
GDP Growth (real, %, YoY)	4,8	8,5	5,2	6,1	2,9	7,4	3,0	1,0
CPI	6,2	7,4	8,2	8,8	8,5	11,9	21,0	15,8
Unemployment (%)	9,2	9,7	9,9	10,3	11,0	10,9	11,0	11,5
Trade Balance (USD bn)	-84,0	-99,8	-84,5	-63,3	-56,0	-76,7	-62,6	-49,3
Exports-FOB (\$ billion)	152,5	151,8	157,7	143,9	142,6	157,1	180,5	200,4
Imports-CIF (\$ billion)	235,0	251,6	242,2	207,2	198,6	233,8	243,1	249,7
Current Account Balance (\$ billion)	-48,8	-65,0	-43,6	-32,2	-32,6	47,1	-39,4	-25,0
Current Account Balance (% of GDP)	-5,7	-6,8	-4,7	-3,7	-3,8	5,5	-5,5	-3,9
Cent. Gov. Cons. Budget Balance (%of GDP)	-1,9	-1,0	-1,1	-1,0	-1,1	-1,5	-2,0	-1,5
Cent. Gov.Cons. Budg Primary Surp(% of GDP)	1,2	1,7	1,3	1,3	1,0	0,3	-0,2	0,3
CBRT policy rate (%)	5,5	6,8	8,3	7,5	8,0	8,0	24,0	20,0
\$/TL exchange rate (year-end)	1,78	2,13	2,32	2,92	3,53	3,79	6,45	6,95
€/TL exchange rate (year-end)	2,35	2,94	2,82	3,17	3,71	4,55	7,54	8,34

2. EXECUTIVE SUMMARY

Especially after the first quarter of the 20th century, the plastic industry has found use in many different areas and many sub-industries have become indispensable parts of human life by providing input. The plastics industry contributes both to the economic growth of the countries and to the creation of employment.

The plastics industry, which has sustained its rapid development for 50 years in the world, increased its plastic production, which was 1.5 million tons of plastics in 1950, to 335 million tons in 2016 with a growth rate of 24% compared to the production of 2010. In 2017, it is predicted that production will increase by 4% compared to 2016 and it will be realized as 348 million tons. On the foreign trade side, the world plastic goods exports and imports increased in quantity and value in 2016 compared to the previous year. It is also estimated that the increase in imports and exports will continue in 2017. While China is taking the first place in the world plastic products exports, USA is the front for the import of plastic products in the world.

In 2017 Turkey's economy grew by 7.4%, while the Turkish plastics industry grew by 8% over the economy of Turkey with the contribution of domestic demand. The industry, where about 7,500 producer companies operate, contributed USD 14.2 billion to the country's economy. In the year of 2017, the Turkish plastics industry produced 9.9 million tons of finished steel products with an increase of 7.6% in terms of quantity compared to the previous year, while it increased by 7.4% to 37.7 billion USD in terms of value. **Thus, with the successful production performance caught in 2017, the Turkish plastics industry maintained its second place in Europe and its sixth place in the world.** While the plastic packaging was the first place in production, the packaging was followed by plastic construction materials. With the growth, machinery and equipment investments in the industry reached 932 million dollars.

When the foreign trade figures of the Turkish plastics industry are evaluated, it is seen that the industry which is dependent on 88% of imports in raw materials gives foreign trade surplus in plastic products industry and foreign trade deficit in plastic raw materials industry. High dependency on imports of raw materials, taxation on imports, difficulties in moving to value added product processes, high competition and low profit margins are fundamental problems of the industry. *The vision of the plastics industry in 2023 is mentioned as to realize 36% of the chemical export target of 50 billion USD with 18 billion USD exports. In order to reach the targets of the industry, it is necessary to focus on producing high value-added products, to increase energy efficiency in production technologies and to diversify in export markets.*

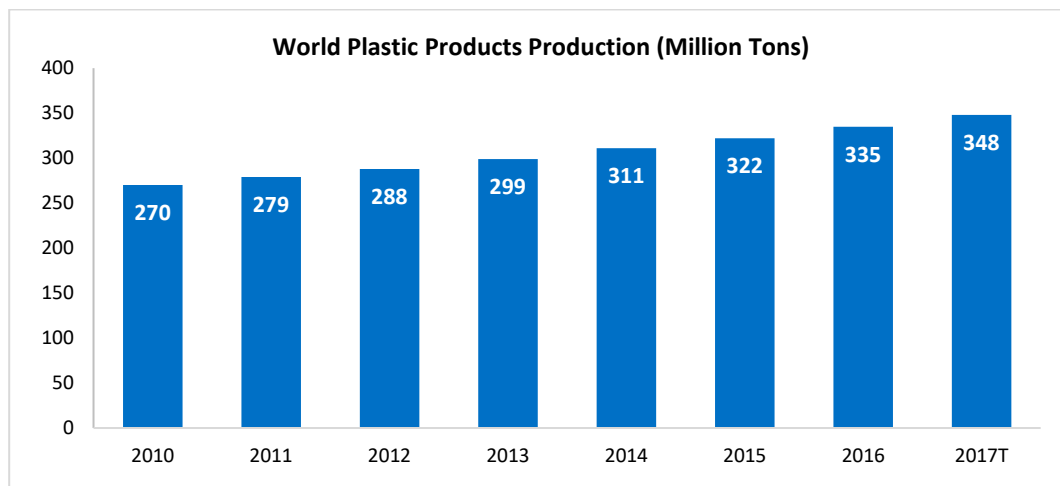
The Turkish plastics industry, which made a good start in 2018, displayed 6.2% growth performance in the first half of the year. It is expected that the the production capacity will reach 10.5 million tons and the turnover will reach 40.3 billion dollars. The measures to be taken in order to prevent the weakening tendency in global trade in trade activities and also to prevent exchange rate fluctuations and high financing costs on the investment side are important in terms of balancing the risks in the industry.

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3. WORLD PLASTIC INDUSTRY

Particularly after the first quarter of the 20th century, the plastic industry has found use in many different areas and many sub-industries have become indispensable parts of human life by providing input. The plastics industry contributes to the economic growth and the employment provision of countries, and the fact that innovative, environmentally conscious and energy efficient products and production processes are crucial in the development of the industry.

The plastics industry, which has sustained its rapid development for 50 years in the world, increased its plastic production, which was 1.5 million tons of plastics in 1950, to 335 million tons in 2016 with a growth rate of 24% compared to the production of 2010. In 2017, it is predicted that production will increase by 4% compared to 2016 and it will be realized as 348 million tons.



Source: Statista / Global Plastic Production from 1950 to 2017

27.7%, 17.2%, 15%, 6%, 4% and 3% of the world's total plastic end products production is estimated to reach 348 million tons in 2017 were produced by China, all of Europe, USA, Germany, India and Thailand, respectively and these countries accounted for around 52% of world plastic production. The share of Middle East and African countries in total production is 8% and the share of Latin America is 7%.

In the world plastic raw material imports, quantity-based, China took first place with a share of 19.2%, it is followed by Germany (5.8%), USA (4.3%), Italy (4.1%) and Turkey (3.6%). In the value-based world plastic raw material imports, while China (17.3%) is heading and it is followed by Germany (6.3%), the US (5.3%), Italy (4%) and Turkey (3, 3%). In the world's total plastic raw material exports on quantity-based, the top 5 countries are the US, S. Arabia, Germany, S. Korea and Belgium, and the US, Germany, Belgium, South Korea and the Netherlands on value based.

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4. THE PLASTIC INDUSTRY OF TURKEY

A) Production

• Plastics End Products Production

The production of plastics end products of the Turkish plastics industry in 2017 reached 9.9 million tons with an increase of 7.6% in volume and 37.7 billion USD in value by 7.4%. In 2017, average capacity utilization was 75%, which is below the average capacity utilization of general manufacturing industry by 79%. It is observed that plastic packaging materials are taking the lead with about 3.8 million tons in total plastic products production of 9.9 million tons in 2017 and plastic packaging materials production was followed by plastic construction materials with 2 million 117 thousand tons.

In the first six months of 2018, Turkish plastics production increased by 6.7% on a volume basis to 5.2 tons compared to the same period of the previous year, while value added increased by 7.4% to 19.9 billion USD.

Plastic End Products Production	2012	2013	2014	2015	2016	2017	2018/6*	2018T**
Million Tons	7,6	8,3	8,3	8,6	9,2	9,9	5,2	10,5
Billion USD	31,1	35,2	35,2	32,8	35,1	37,7	19,9	40,3

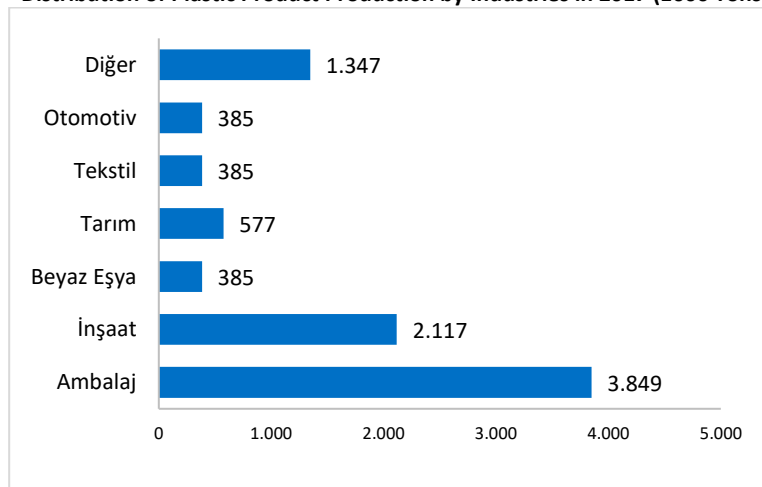
*First 6 Months of 2018

** 2018 Year-End Prediction

Source: PAGDER, TÜİK

Turkey's plastics industry, which makes a good start in the first half of 2018, grow at 6.2% for the first six months of 2018. In addition, by the end of 2018, it is predicted that the production capacity will reach 10.5 million tons and the turnover to reach 40.3 billion USD.

Distribution of Plastic Product Production by Industries in 2017 (1000 Tons)



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Automotive, white goods, construction-building and plastic packaging industry will need for construction plastics which are used in infrastructures, superstructures and insulation areas and the need for automotive plastics will increase. We are also looking forward to increasing demand for plastic construction materials when large-scale infrastructure investments, transportation and energy projects are evaluated.

We expect that the plastic packaging materials industry, which constitutes the most important item of the industry by taking a 40% share in the plastics industry, will perform well depending on the demand that continues in 2018. The increase in demand for plastic packaging materials industry, which is an industry that can grow even during periods of economic slowdown, can be expected due to the ease of use, long-term storage, light weight and cost advantages. On the other hand, it is seen that compared with other countries, Turkey's per capita packaging consumption remained at low levels compared to countries such as Japan and the United States. This shows that the consumption per capita can be increased by focusing on the investments in the packaging industry in the coming period.

Foreign investors' interest in the packaging industry is ongoing. Among the acquisitions that have taken place in the industry over the last 10 years; the Austrian Dunapack's Dentaş, the South African company Mondi's Tire Kutsan, Constantia's Asaş, and Australian Amcor's purchase of Ratopak Ambalaj can be considered. Also at the beginning of 2017, one of the leading companies in the packaging industry of Turkey, Koroza was sold to private equity firm, Actera Group. According to a report released in April, Bedminster Capital also authorized the sale of 80% of Propak Ambalaj shares.

Accordingly, it is noted that four buyer groups, including European Constantia Flexibles, are interested in the sales process of Propak and the deal is expected to close soon. In the plastic packaging industry, which will continue to grow in the upcoming period, with the mechanisms to encourage company mergers and acquisitions in order to increase international competitiveness, it is targeted that exports of plastic packaging products will reach 5.5 billion USD in 2023.

It is observed that plastic packaging materials are taking the lead with about 3.8 million tons in total plastic products production of 9.9 million tons in 2017 and plastic packaging materials production was followed by plastic construction materials with 2 million 117 thousand tons.

- **Plastic Raw Material Production**

The industry, which realized 3.5 million tons of plastic raw material production in 2017, realized a total of 1.8 million tons of production in the first 6 months of 2018. As of 2018, 31% of the total plastic raw materials produced in Turkey was LDPE, 9% was HDPE, 15% was PVC, 12% was PP, 10% was PS, and 23% was PET.

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B) Consumption:

- **Plastic End Products Consumption:** As of 2017, domestic consumption of 8.9 million tons and 36.4 billion USD was realized in the plastic end products industry. Domestic consumption of plastics end products increased by 8.5% on amount base and 7,3% in terms of value in 2017 with respect to 2016.

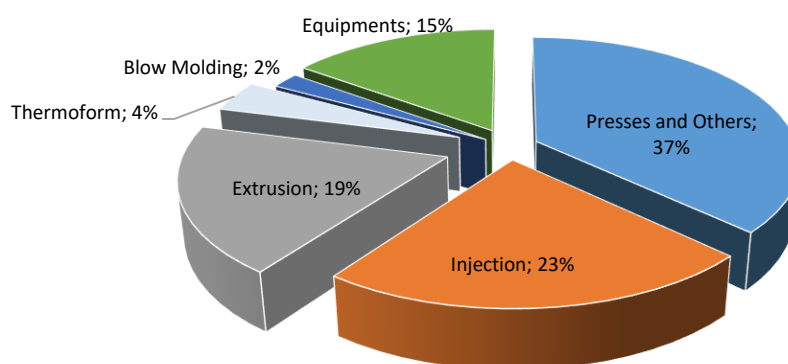
Domestic Consumption	2013	2014	2015	2016	2017
Million Tons	7,3	7,3	7,6	8,2	8,9
Billion USD	33,5	33,3	31,4	33,9	36,4

C) Machinery and Equipment Investment:

In the period of 2013-2017 an average of 850 million dollars of machinery and equipment investment has been realized in plastics industry 36% of total investment is made by presses and other machines, 22% by injection, 18% by extrusion, 5% by thermoform, 2% of them were blow molding and 17% were parts and parts.

While the investment of machinery equipment in the plastics industry was realized as 932 million dollars in 2017, by the end of 2018, it is estimated that the investment of the machinery equipment of the industry will reach 1 billion USD.

Distribution of Machinery and Equipment Investment of Plastic Industry in 2012-2016 Period (%)



Source: PAGEV

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D) Foreign Direct Investments

Between 2002 - 2017 periods, about 1.6 billion USD of direct foreign capital investment has been realized in plastics industry and this amount investment constitutes 1% of all foreign investments in Turkey and 4.7% of the foreign direct investments in manufacturing industry.

Industries	Million USD	Share in Total %	Share in Manufacturing Industry
Food-beverage-tobacco	8.427	5,8	24,5
Chemistry	5.322	3,7	15,5
Refined petroleum products	4.327	3,0	12,6
Basic metal industry	3.653	2,5	10,6
Computer-electronic and optical products	3.562	2,4	10,4
Textile- clothing- leather	2.094	1,4	6,1
Non-metallic products	1.823	1,3	5,3
Plastic	1.629	1,1	4,7
Transport vehicles	1.406	1,0	4,1
Paper	788	0,5	2,3
Machine-equipment	720	0,5	2,1
Furniture	551	0,4	1,6
Wood & Timber Products	98	0,1	0,3
Total Manufacturing	34.400	23,6	
Total Investment	145.494	100	

Source: PAGEV

E) Foreign Trade:

Exports:

- **Plastics End Products Exports**

In 2017, 1.6 million tons and 4.3 billion USD of plastic end products were imported and imports of plastic products increased by 5.4% on amount and by 5.6% in value terms compared to 2016. In 2017, the highest imports by amount and value basis were realized in the product group of 3920 HS Code (other plates, sheets, pellets, foils and slides from plastic) and the group of 3923 (Plastic products for moving furniture, tap, cap, capsule). The imports of this group accounted for %46 on amount and %43 on value basis of total imports.

In the first six months of 2018, plastic end products exports of the Turkish plastics industry amounted to 856.2 thousand tons with an increase of 7.2% on a quantity basis and an increase of 12.8% with a value basis to 2.35

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billion USD. In the period of January-June 2018, while Germany, Egypt, Russia and Italy were the first five countries among the countries where the plastic industry exports the most plastic products, plastic kitchen products were the sub-industry that achieved the biggest increase in exports by 17%.

Plastics End Products Exports (1000 Tons)					
HS CODE	Description	2016	2017	%Increase/Decrease	2018/6*
3916	Monofilament, bar, profiles from plastic-cross section over 1mm	146	162	10,7	81
3917	Tubes, pipes, hoses from plastic; gasket, elbow, union etc.	215	211	-1,7	98
3918	Floor coverings from plastic – incl. wall and ceiling coverings	13	13	-5,5	7
3919	Adhesive plate, sheet, strip, slide, etc. from plastic; flat	20	20	1,0	10
3920	Other plate, sheet, pellicles and slides from plastic	369	384	3,9	210
3921	Other plates, sheets, pellicles, foils and slides from plastic	140	146	4,2	74
3922	Bathtub, shower, sink, bidet, water-closet pan and hardware from plastic	24	26	7,1	14
3923	Plastic products for moving furniture, tap, cap, capsule	335	366	9,3	200
3924	Table, kitchen and other household furniture, toiletry form plastic	121	142	16,8	79
3925	Construction materials from plastic	94	86	-8,9	41
3926	Other goods from plastic	74	80	9,1	43
Total		1.551	1.634	5,4	856

First Six Months of 2018 Year

Source: TURKSTAT, PAGDER

Plastics End Products Exports by HS Codes (Million \$)					
HS CODE	Description	2016	2017	%Increase/Decrease	2018/6*
3916	Monofilament, bar, profiles from plastic-cross section over 1mm	250	269	7,6	139
3917	Tubes, pipes, hoses from plastic; gasket, elbow, union etc.	553	523	-5,4	274
3918	Floor coverings from plastic – incl. wall and ceiling coverings	26	27	4,9	14
3919	Adhesive plate, sheet, strip, slide, etc. from plastic; flat	113	99	-12,5	53
3920	Other plate, sheet, pellicles and slides from plastic	923	976	5,7	545
3921	Other plates, sheets, pellicles, foils and slides from plastic	402	416	3,5	218
3922	Bathtub, shower, sink, bidet, water-closet pan and hardware from plastic	100	104	4,2	58
3923	Plastic products for moving furniture, tap, cap, capsule	809	890	10,0	502
3924	Table, kitchen and other household furniture, toiletry form plastic	356	399	12,1	223
3925	Construction materials from plastic	217	219	0,7	112
3926	Other goods from plastic	359	418	16,4	215
Total		4.109	4.340	5,6	2.353

First Six Months of 2018 Year

Source: TURKSTAT, PAGDER

We think that the recovery in the EU countries, with whom we have realized about 45% of total plastic product exports, and the bilateral relations with Russia will be reflected positively on the industry's foreign trade performance.

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Plastics End Products Exports by the Main 10 Countries								
2016			2017			2018 (January-June)		
Countries	1000 Tons	Million USD	Countries	1000 Tons	Million USD	Countries	1000 Tons	Million USD
Iraq	199	373	Iraq	222	404	Iraq	97	184
Germany	87	299	Germany	85	310	Germany	46	174
UK	78	197	UK	78	206	UK	46	122
France	52	168	Israel	89	198	Israel	50	112
Israel	74	167	France	51	166	France	30	104
Romania	54	142	Romania	55	149	Italy	31	85
Italy	52	136	Bulgaria	46	148	Romania	29	81
Iran	43	132	Italy	54	143	Spain	28	68
Bulgaria	44	126	Georgia	51	111	Bulgaria	23	66
Georgia	46	103	Iran	34	110	USA	21	60
10 Countries	729	1.842	10 Countries	766	1.944	10 Countries	400	1.056
Other	821	2.267	Other	868	2.396	Other	456	1.297
Total	1.551	4.109	Total	1.634	4.340	Total	856	2.353

Source: TURKSTAT, PAGDER

- **Plastic Raw Material Exports**

Exports of plastic raw materials increased by 11.9% in quantity and 23.7% in value terms in 2017 compared to 2016, reaching 833 thousand tons and 1.1 billion USD respectively. Plastic raw materials are exported to about 165 countries in 2017, Germany, Italy, Egypt, Iran, and Russia have been featured in top 5 countries in Turkey's exports of plastic raw materials. In the first 6 months of 2018, 400 thousand tons and 606 million USD plastic raw materials were exported.

Top 10 Countries in Plastic Raw Material Exports								
2016			2017			2018 (January-June)		
Countries	1000 Tons	Million USD	Countries	1000 Tons	Million USD	Countries	1000 Tons	Million USD
Germany	65	86	Germany	68	102	Germany	39	64
Italy	59	74	Italy	76	85	Egypt	28	35
Egypt	56	54	Egypt	56	61	Russia	16	33
Iran	25	50	Iran	26	59	Romania	22	31
Russia	19	37	Russia	25	51	Italy	24	31
Bulgaria	45	34	Bulgaria	48	51	Iran	10	26
Israel	29	30	Spain	30	39	Algeria	11	19
Iraq	22	29	Iraq	25	37	Uzbekistan	8	19
Greece	38	28	Israel	33	36	Bulgaria	17	18
Spain	23	26	Romania	26	34	Israel	14	18
10 Countries	381	448	10 Countries	413	566	10 Countries	188	293
Other	363	471	Other	486	649	Other	212	313
Total	744	919	Total	833	1.137	Total	400	606

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Plastic Raw Material Exports (1000 tons)					
HS CODE	Description	2016	2017	%Increase/ Decrease	2018/6*
3901	Ethylene polymers (initial forms)	72	117	62,0	16
3902	Propylene and polymers of other olefins (initial forms)	26	27	5,3	13
3903	Styrene polymers (initial forms)	26	31	18,6	27
3904	Other olefin polymers with vinyl chloride/homogenous	20	19	-3,0	9
3905	Vinyl acetate/polymers of other vinyl esters (initial forms)	52	53	2,2	29
3906	Acrylic polymers (initial forms)	174	180	3,5	94
3907	Polyacetals, other polyethers, epoxide-alkyd resins (initial forms)	216	242	12,1	116
3908	Polyamides (initial forms)	14	15	10,4	9
3909	Amino resins, phenolic resins, polyurethanes (initial forms)	80	82	2,3	50
3910	Silicones (initial forms)	6	6	-2,1	3
3911	Petroleum resins, coumarone, indene/coumarone-indene resin, polyterpenes	1	1	72,4	1
3912	Cellulose and chemical derivatives (initial form)	40	42	7,0	26
3913	Natural polymers, modified natural polymers, derivatives (initial forms)	0	0	-9,9	0,1
3914	Polymer based ion exchangers (initial form)	0	0	-18,2	0,1
3915	Wastes, residuals and scraps from plastic	17	15	-10,0	8
	Total	744	833	11,9	400

Source: TURKSTAT, PAGDER
First Six Months of 2018 Year

Plastic Raw Material Exports (Million \$)					
HS CODE	Description	2016	2017	%Increase/ Decrease	2018/6*
3901	Ethylene polymers (initial forms)	95	150	57,4	21
3902	Propylene and polymers of other olefins (initial forms)	32	35	7,7	18
3903	Styrene polymers (initial forms)	30	43	42,8	42
3904	Other olefin polymers with vinyl chloride/homogenous	21	21	0,8	10
3905	Vinyl acetate/polymers of other vinyl esters (initial forms)	42	42	0,4	28
3906	Acrylic polymers (initial forms)	186	208	12,1	116
3907	Polyacetals, other polyethers, epoxide-alkyd resins (initial forms)	322	398	23,6	223
3908	Polyamides (initial forms)	24	30	26,6	21
3909	Amino resins, phenolic resins, polyurethanes (initial forms)	86	120	40,2	72
3910	Silicones (initial forms)	22	20	-9,5	11
3911	Petroleum resins, coumarone, indene/coumarone-indene resin, polyterpenes	2	4	58,0	3
3912	Cellulose and chemical derivatives (initial form)	43	47	10,0	32
3913	Natural polymers, modified natural polymers, derivatives (initial forms)	1	1	2,8	0,6
3914	Polymer based ion exchangers (initial form)	1	1	11,8	0,2
3915	Wastes, residuals and scraps from plastic	13	17	31,9	9
	Total	919	1.137	23,7	606

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Imports:

- Plastics End Products Imports

In 2017, Turkey's imports of plastic products compared to 2016 increased by 5.6% in terms of quantity and by 6% in terms of value, and realized 622 thousand tons and 3.1 billion USD. While the number of countries importing plastic products in 2017 is over 100, it is observed that in our total plastic goods imports China has a share of 26% on a quantity basis and 19% on value basis, followed by Germany, Italy, South Korea and France respectively.

Plastics Raw Materials Imports (1000 Tons)					
HS CODE	Description	2016	2017	%Increase/ Decrease	2018/6*
3916	Monofilament, bar, profiles from plastic-cross section over 1mm	14	13	-6,7	6
3917	Tubes, pipes, hoses from plastic; gasket, elbow, union etc.	26	28	5,4	17,5
3918	Floor coverings from plastic – incl. wall and ceiling coverings	22	24	9,0	10,5
3919	Adhesive plate, sheet, strip, slide, etc. from plastic; flat	58	61	6,4	31
3920	Other plate, sheet, pellicles and slides from plastic	249	271	9,0	134
3921	Other plates, sheets, pellicles, foils and slides from plastic	64	70	9,7	38
3922	Bathtub, shower, sink, bidet, water-closet pan and hardware	4	5	1,4	2
3923	Plastic products for moving furniture, tap, cap, capsule	61	63	4,4	32
3924	Table, kitchen and other household furniture, toiletry form plastic	11	9	-14,4	5
3925	Construction materials from plastic	10	9	-9,5	5
3926	Other goods from plastic	71	68	-3,3	36
	Total	589	622	5,6	317

Plastics Raw Materials Imports (Million \$)					
HS CODE	Description	2016	2017	%Increase/ Decrease	2018/6*
3916	Monofilament, bar, profiles from plastic-cross section over 1mm	57	57	0,7	29
3917	Tubes, pipes, hoses from plastic; gasket, elbow, union etc.	209	238	13,8	141
3918	Floor coverings from plastic – incl. wall and ceiling coverings	89	88	-0,6	33
3919	Adhesive plate, sheet, strip, slide, etc. from plastic; flat	331	341	3,0	173
3920	Other plate, sheet, pellicles and slides from plastic	907	999	10,1	467
3921	Other plates, sheets, pellicles, foils and slides from plastic	250	270	8,0	147
3922	Bathtub, shower, sink, bidet, water-closet pan and hardware	42	42	2,1	15
3923	Plastic products for moving furniture, tap, cap, capsule	269	284	5,7	151
3924	Table, kitchen and other household furniture, toiletry form plastic	68	60	-11,9	31
3925	Construction materials from plastic	39	41	5,0	20
3926	Other goods from plastic	668	684	2,4	353
	Total	2.928	3.105	6,0	1.559

Source: TURKSTAT, PAGDER
First Six Months of 2018 Year

In the first half of 2018, imports of plastic products of 317 thousand tons and 1.6 billion USD were made. In the first half of 2018 compared to the same period of the previous year, there have been remarkable increases in imports and exports. In this period, the increase in exports has been 12.8% in value.

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While the increase in the value of imports in terms of the amount of exports indicates the increase in the general level, it is observed that the increase in the export unit prices is higher than the import unit prices (PAGDER).

Plastics End Products Imports by the Main 10 Countries								
2016			2017			2018 (January-June)		
Countries	1000 Tons	Million USD	Countries	1000 Tons	Million USD	Countries	1000 Tons	Million USD
China	157	602	China	162	604	China	87	297
Germany	94	547	Germany	93	558	Germany	46	296
Italy	52	252	Italy	54	273	Italy	24	133
South Korea	35	212	South Korea	40	230	France	15	103
France	28	185	France	28	186	South Korea	18	101
USA	13	128	USA	13	127	USA	5	62
UK	12	96	UK	15	109	UK	8	54
Belgium	15	70	Belgium	17	78	Belgium	9	45
Japan	5	66	Spain	14	75	Spain	8	40
Spain	11	60	Japan	6	70	Japan	2	33
10 Countries	422	2.219	10 Countries	441	2.310	10 Countries	223	1.164
Others	168	710	Other	196	847	Other	94	395
Total	589	2.928	Total	637	3.157	Total	317	1.559

Source: TURKSTAT, PAGDER
First Six Months of 2018 Year

• Plastic Raw Material Import

It is observed that the high dependence of Turkey's plastic industry on imports of plastic raw materials supply continues. In 2017, imports of plastic raw materials amounted to 7.2 million tons with an increase of 9.9% in terms of quantity compared to 2016, while value added increased by 16.8% to USD 10.2 billion. In 2017, the highest imports were realized in polyethylene and polypropylene on a quantity basis. The imports of these two raw materials have received 55% share of total plastic raw material imports on quantity basis. Raw material imports, which account for 87% of total supply, were 3.8 million tons and 5.7 billion USD in the first half of 2018.

In addition to the import dependency of raw materials in the industry, one of the main problems is the inability to switch to high value-added products, and the other is the competition problems in the global market parallel to this. In order to avoid these problems, the traditional production model which does not add value to the industry should be transformed into the production of advanced plastics and the incentive opportunities for the industry should be revised.

Rather than putting taxes on imports of raw materials, measures should be implemented to reduce production and investment costs and market research studies should be conducted to increase efficiency in export markets and to speed up the orientation to new markets.

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Plastics Raw Materials Imports (1000 Tons)					
HS CODE	Description	2016	2017	%Increase/ Decrease	2018/6*
3901	Ethylene polymers (initial forms)	1.710	1.814	6,1	918
3902	Propylene and polymers of other olefins (initial forms)	2.021	2.136	5,7	1.124
3903	Styrene polymers (initial forms)	509	535	5,1	264
3904	Other olefin polymers with vinyl chloride/homogenous	758	860	13,4	437
3905	Vinyl acetate/polymers of other vinyl esters (initial forms)	45	47	4,5	24
3906	Acrylic polymers (initial forms)	208	224	7,9	111
3907	Polyacetals, other polyethers, epoxide-alkyd resins (initial forms)	688	829	20,5	425
3908	Polyamides (initial forms)	94	100	6,0	53
3909	Amino resins, phenolic resins, polyurethanes (initial forms)	218	235	8,1	120
3910	Silicones (initial forms)	32	37	15,3	22
3911	Petroleum resins, coumarone, indene/coumarone-indene resin, polyterpenes	33	34	5,7	18
3912	Cellulose and chemical derivatives (initial form)	39	43	10,3	25
3913	Natural polymers, modified natural polymers, derivatives (initial forms)	4	3	-14,0	2
3914	Polymer based ion exchangers (initial form)	5	7	26,9	4
3915	Wastes, residuals and scraps from plastic	160	262	64,1	242
	Total	6.523	7.166	9,9	3.787

Plastics Raw Materials Imports (Million \$)					
HS CODE	Description	2016	2017	%Increase/ Decrease	2018/6*
3901	Ethylene polymers (initial forms)	2.282	2.442	4,3	1.261
3902	Propylene and polymers of other olefins (initial forms)	2.529	2.722	16,0	1.586
3903	Styrene polymers (initial forms)	814	881	26,1	480
3904	Other olefin polymers with vinyl chloride/homogenous	821	903	28,1	451
3905	Vinyl acetate/polymers of other vinyl esters (initial forms)	103	111	4,9	62
3906	Acrylic polymers (initial forms)	336	364	20,6	211
3907	Polyacetals, other polyethers, epoxide-alkyd resins (initial forms)	1.285	1.400	23,4	826
3908	Polyamides (initial forms)	242	267	24,9	163
3909	Amino resins, phenolic resins, polyurethanes (initial forms)	509	554	34,9	331
3910	Silicones (initial forms)	128	141	20,9	101
3911	Petroleum resins, coumarone, indene/coumarone-indene resin, polyterpenes	89	97	7,0	56
3912	Cellulose and chemical derivatives (initial form)	151	164	10,3	101
3913	Natural polymers, modified natural polymers, derivatives (initial forms)	20	22	-6,9	15
3914	Polymer based ion exchangers (initial form)	15	16	17,3	10
3915	Wastes, residuals and scraps from plastic	67	76	53,8	70
	Total	9.393	10.160	16,8	5.724

Source: TURKSTAT, PAGDER
First Six Months of 2018 Year

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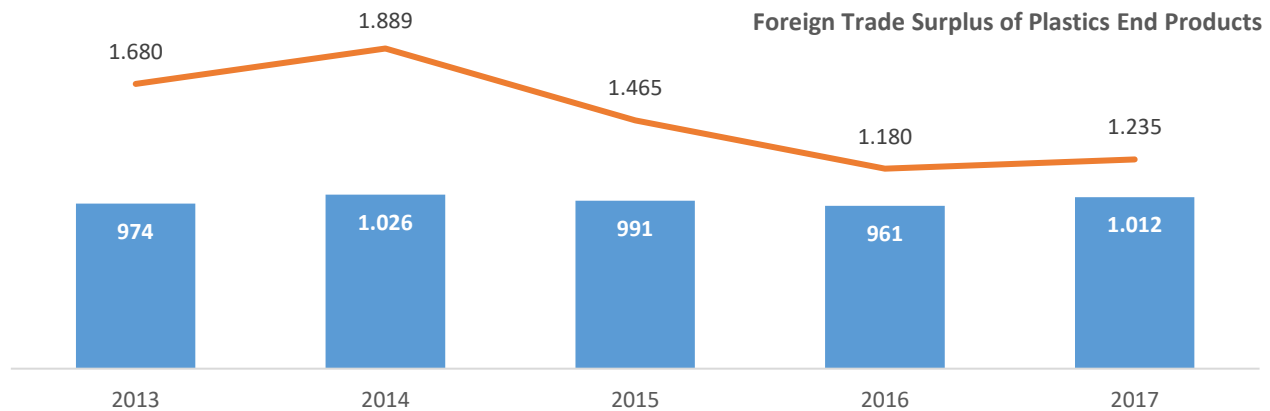
Plastics Raw Materials Imports by Countries (Top 10)								
2016			2017			2018 (January-June)		
Countries	1000 Tons	Million USD	Countries	1000 Tons	Million USD	Countries	1000 Tons	Million USD
S. Arabia	1.064	1226	S. Arabia	1.133	1.368	S. Arabia	623	833
S. Korea	646	865	S. Korea	666	995	S. Korea	347	573
Germany	429	853	Germany	488	973	Germany	269	562
Belgium	385	552	Belgium	419	664	Belgium	242	396
Italy	237	410	Iran	417	485	Iran	214	272
Iran	361	400	France	317	457	Italy	126	260
France	300	386	Italy	245	452	Spain	147	241
Netherlands	228	370	Netherlands	245	428	Netherlands	135	239
Spain	265	370	Spain	273	422	Egypt	171	223
Egypt	269	290	Egypt	311	373	France	147	217
10 Countries	4.184	5.724	10 Countries	4.514	6.616	10 Countries	2.422	3.815
Others	2.338	2.976	Other	2.652	3.544	Other	1.365	1.909
Total	6.523	8.700	Total	7.166	10.160	Total	3.787	5.724

Source: TURKSTAT, PAGDER
First Six Months of 2018 Year

When countries are evaluated on the basis of import plastic raw materials, the first three countries are Saudi Arabia, Germany and South Korea and the share in total imports of plastic raw materials of these three is around 34% on the basis of volume and value.

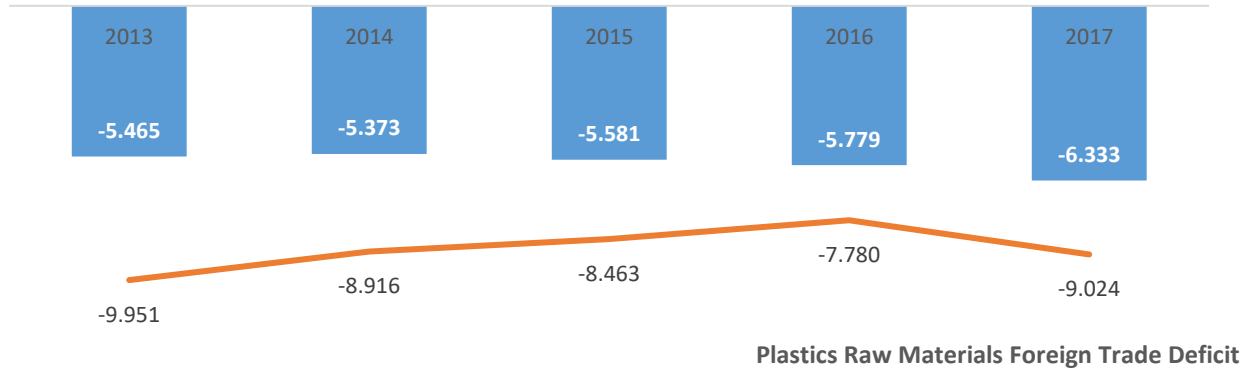
Foreign Trade Balance:

Turkey has foreign trade surplus in foreign trade in plastic products. In 2017, 1 million 12 thousand tons and \$ 1.24 billion foreign trade surplus were given. The foreign trade surplus in 2017 increased by 5.3% in value and by 4.7% in amount compared to the year of 2016.



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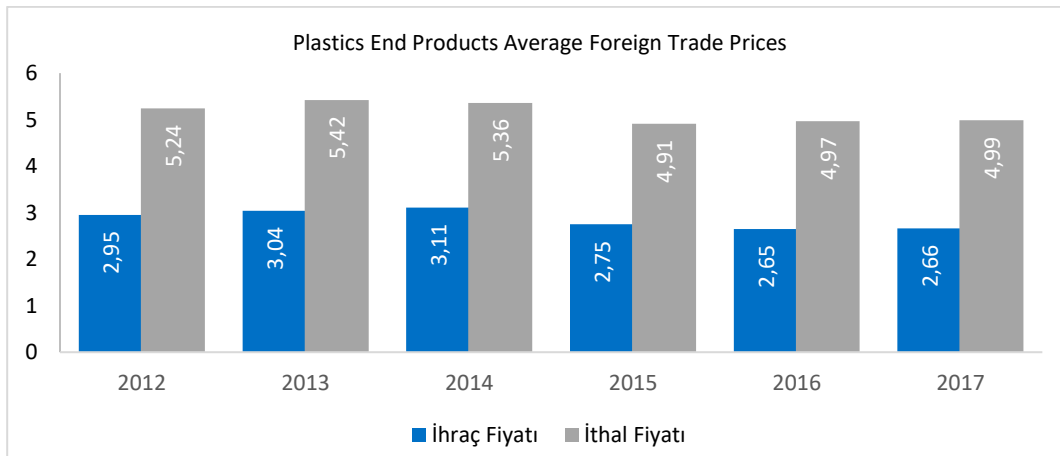
Turkey is a country that gives deficit in plastics raw materials foreign trade. The plastic raw materials foreign trade deficit realized as 6 million 303 thousand tons and 9.24 billion dollars in 2017.



Foreign Trade Prices:

Unit import prices for **plastics end products** have been above unit export prices since 2000. As of the end of March 2017, the average import prices of plastic products were 4.95 USD/kg and the average export prices were 2.60 USD/kg. The average import price decreased by 0.3% and the average export price decreased by 2% compared to 2016.

When unit export prices in world plastic end products export are evaluated by countries; the average export prices of US, UK, Germany, South Korea and Austria are above 5 USD, while Turkey's export price is above Malaysia and India's prices however is also below the 4.6 USD/kg, which is the average export price of the 20 countries that are leading the world plastics end products export.

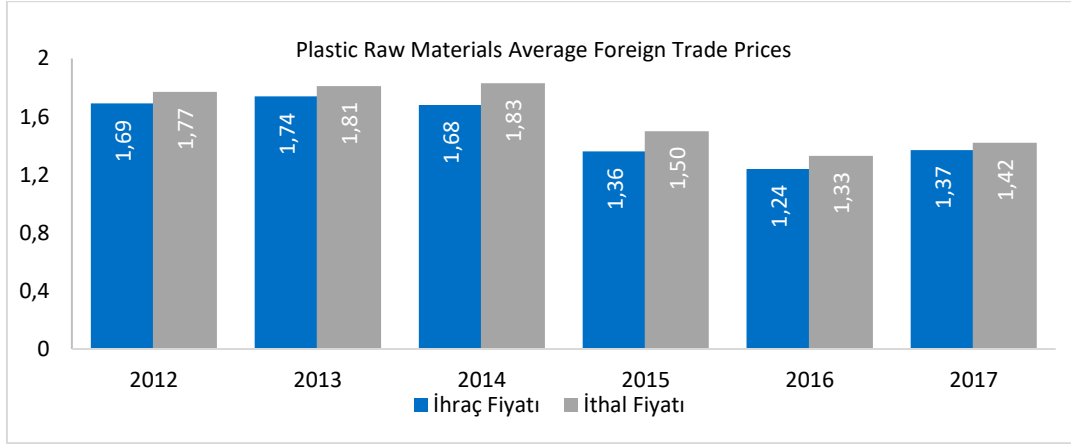


Source: ITC, International Trade Center

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As for plastic raw materials, the average unit import price of plastic raw materials was 1.37 USD/kg and the average unit export price was 1.42 USD/kg at the end of 2017, while the import price increased by 6.8% and the export price increased by 10%.

It is seen that there is a decline in unit export prices not only in the plastic industry but also in all exported goods of Turkey. This undermines the competitiveness of our industries and it brings the need for high value-added production back to the agenda. In the plastics industry in order to overcome this problem, it is necessary to increase plastics end products unit export prices to USD 4/kg from the level of USD 2.60/kg in the first place, high value-added products should be produced by prioritizing research-development and production-development in the industry and customer satisfaction-oriented studies should be continued.



Source: ITC, International Trade Center

F) The Structure of the Plastic Industry:

According to PAGEV data; about 6,500 companies are operating in the plastic industry, 90% of which are SMEs. Approximately 30% of the companies are producing for packaging, 15% for construction, 11% for textiles, 10% for household goods, and 10% for automotive and 9% for the technical parts industries. The fact that the relevant industries generally have an exporting structure and that the export markets of these industries exhibit a stable outlook affects industry expectations positively.

It is observed that the firms prefer mainly Europe, Middle East, Far East countries, North Africa and North America in plastics end products exports. Companies operating in the industry will continue to pursue customer-focused growth strategies by increasing production capacities. Automobile tires and construction materials are among the important products of the plastic and rubber industry. In 2017, the automotive and housing industries are expected to continue their growth trend with the impact of improved domestic demand conditions. We think that rubber and plastic manufacturers who produce intermediary goods in the mentioned industries will be affected positively in this development.

5. THE EVALUATION OF COMPETITIVENESS AND POSITION OF TURKISH PLASTIC INDUSTRY

Internal and External Developments Affecting the Competitiveness of the Industry:

While many industries have realized a decline in 2017, the plastics industry continued its upward momentum grew by 8% over Turkey's economy growth in 2017. Domestic market dynamism and government incentives are at the forefront for the growth of industry since 2016, and we see that the contribution of exports has been added to growth performance in the first half of 2017 and 2018. On the other hand, interest rate burden and creditor pressure are noticeably high in the industry. The double-digit inflation, the depreciation in the TL and the increase in the interest rate are the risk factors in terms of negatively affecting the financial structures of the companies in the industry.

Internal and external economic and political developments as well as structural problems negatively affect the growth performance of the industry. High dependency on raw material imports, tax on imports, difficulties in moving to value added production processes, high competition and low profit margins and high energy costs are the main problems of the industry.

The vision of the plastics industry in 2023 is to realize 36% of the chemical export target of 50 billion USD with 18 billion USD exports. In order to reach the targets of the industry, it is necessary to focus on producing high value-added products, to increase energy efficiency in production technologies and to diversify in export markets.

The Fundamental Problems of the Industry:

- Import dependence on raw materials by %85
- Use of traditional production model that does not add value
- Putting custom duty on imports of raw materials from non-EU countries
- Prohibition of access to secondary use plastic raw material
- Declining sales prices negatively affecting competition and narrowing profit margins
- Decrease of export unit prices
- No specific state subsidy for the industry
- High energy costs
- Lack of qualified intermediate staff
- Difficulties experienced in bureaucratic and legal processes

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The Steps to be taken for The Development of the Industry

- Adoption of the regulations using advanced production techniques instead of traditional production model which does not add added value in the sector
- Increasing research-development and production-development studies
- Establishment of mechanisms to encourage mergers and acquisitions in the sector in order to increase international competitiveness
- Giving the incentives to reduce the production and investment costs to the minimum instead of putting a tax on the importation of raw materials by domestic producers
- Carrying out studies to create market diversity in exports
- More emphasis on training for the transition to high value added products, training qualified personnel
- The development of the external control and market surveillance mechanism is at the forefront.

Industrial Expectations:

We anticipate that the Turkish plastics industry, which has made a good start to 2017 with the impact of economic recovery and consumer and investor confidence correction, will be able to perform better with raw material imports and value added production policies. In the current conjuncture, the slowdown in domestic economy and the developments of sector in the Middle East, EU and China markets will be the focus of the global market. Exchange rate fluctuations and high financing costs on the investment side and measures to be taken in order to prevent the weakening tendency in global trade on trade activities side are important in terms of balancing the risks in the sector.

Although the Turkish plastics sector has a potential to grow in the range of 5.5% to 7.5% in 2018, it is probable that the growth in the sector will be around 5.5% considering the ongoing political and economic risks and uncertainties in our important export markets.

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A&T BANK Economic Research Department

Valikonağı Cad. No: 10 Nişantaşı 34367 İstanbul - Turkey

T :212 - 373 62 00 (PRI) / (212) 225 05 00 (19 Lines)

F :+90 (212) 225 05 26 / (212) 224 99 92

E-mail: erd@atbank.com.tr