PAGEV

TURKISH PLASTIC PACKAGING MATERIALS INDUSTRY FOLLOW-UP REPORT

2019/6

PREFACE

The plastics industry is one of the most important actors of the Turkish economy. Today, the contribution of the plastics industry to the country's economy is gradually increasing with the total production exceeding 9 million tons, and 35 billion dollars worth of turnover, the approaching direct exports of 5 billion dollars and the annual growth of 12% for the last 10 years. Our industry, with its production capacity, has reached the second place in Europe and the sixth place in the world. As PAGEV, we continue to lead the industry successfully in the framework of the "Unifiyng Power" mission of the Turkish Plastics Industry.

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

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

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

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

Best regards,

Yavuz EROĞLU
PAGEV President

–EXECUTIVE SUMMARY–

Production of plastic packaging products share between 40-53% in total plastics products manufacturing of leading countries. This ratio is about 40% in Turkey, while the world average is 46% respectively. More than 1/3 of all products in developed countries is packaged with a plastic materials so that after the paper and cardboard is having the biggest market share. In terms of volume, 55% of the packaging is flexible and 45% is rigid However, this position is reversed in terms of value. Annual consumption value of rigid packaging is 30 billion euros in the European while flexible packaging shares the value of around 10 billion euros.

Turkey, shows a faster development than the EU Countries the economies of which are more developed and relatively sophisticated packaging markets have reached saturation points. Growing urbanization trend, the lengthening of the average life expectancy, women's increasing population of working life, the contribution of consumption habits and the expectations of consumers; developed the self-service in the central and consumer direct selling hypermarket, promotes the spread of supermarkets and supermarket chains in the entire country.

This support the development of use of retail systems packaging. Likewise, consumers in markets achieve the possibility of finding with many more varieties of cheap but good quality and reliable products, price and quality.

Apart from customer service, sale promotions, special discounts, free product coupons directs customers preferably to purchase from the store. To sum up; the chain of shopping malls and retail sales racks and feed the order accordingly packaged product demand.

In the plastics packaging materials industry in the first half of 2019 on amount basis; 31% of production was exported and 15% of domestic consumption was met by imports.

On the other hand in the same period on value base; 25% of production was exported and 16% of domestic consumption was met by imports.

CONTENTS

1.	**PRODUCTION CAPACITY**	**01**
2.	**PRODUCTION**	**02-03**
3.	**FOREIGN TRADE**	**03-10**
3.1.	IMPORTS	**04-05**
3.2.	IMPORTS BY COUNTRIES	**06**
3.3.	EXPORTS	**06-07**
3.4.	EXPORTS BY COUNTRIES	**08**
3.5.	FOREIGN TRADE SURPLUS	**09**
3.6.	IMPORT AND EXPORT PRICES	**10**
3.7.	VALUE ADDED CREATED BY EXPORTS	**10**
4.	**DOMESTIC CONSUMPTION**	**11**
5.	**SUPPLY AND DEMAND EQUILIBRIUM**	**12-13**
6.	**CONCLUSION**	**14**

1. PRODUCTION CAPACITY

In Turkish plastic packaging industry, lots of companies manufacture lots of different products, and manufacturing capacities of companies in terms of products cannot be defined over a certain unit.

Turkish plastic packaging industry is made up of flexible plastic by 67%, textile plastics by 18%, and hard plastic packaging products by 15%.

According to PAGEV data base, about 1,450 companies are operating in plastics packaging matrials industry, 61% of which located in Istanbul. More than 10 companies that operate in 14 the provinces account for 83% of total companies.

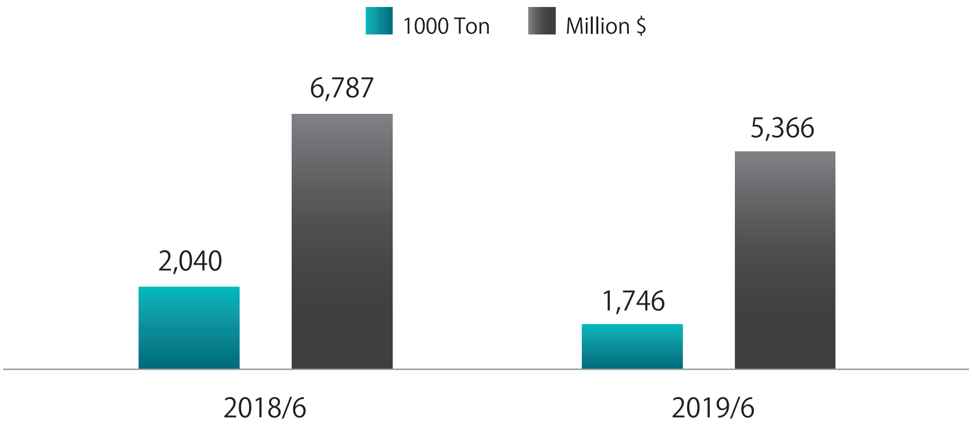
Province	Number of Companies	% Share
İstanbul	871	61
İzmir	84	6
Konya	57	4
Ankara	51	4
Bursa	51	4
Gazıantep	42	3
Kocaeli	40	3
Adana	27	2
Denizli	23	2
Mersin	17	1
Kayseri	16	1
Manısa	15	1
Samsun	13	1
Antalya	11	1
Others	105	7
Total Industry	1,423	100

Table 1: Plastics Packaging Materials Manufacturers By Provinces
Source : PAGEV Data Base

2. PRODUCTION

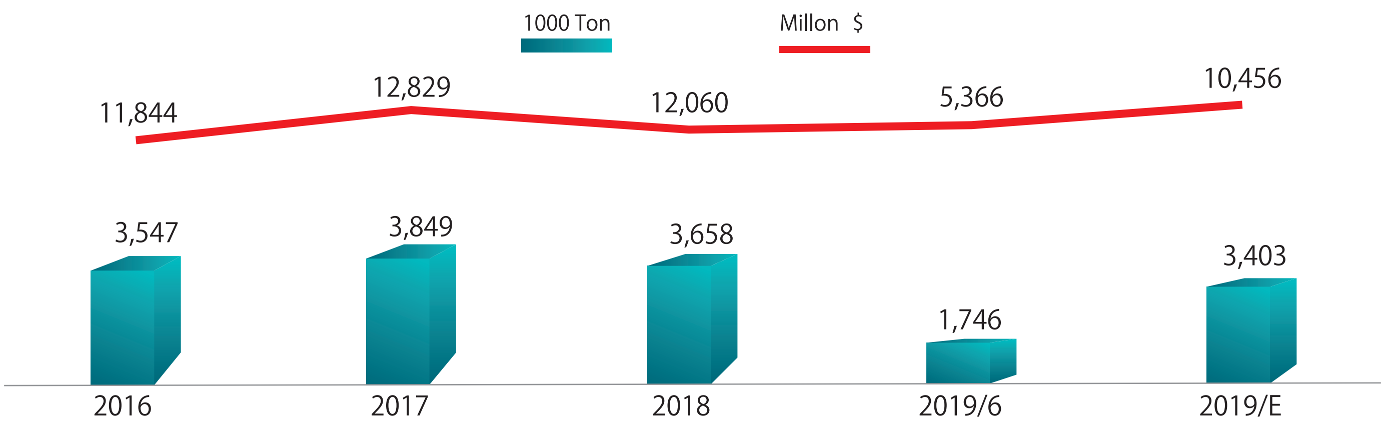
Production of plastic packaging materials increased by CAGR of 2.4% on amount basis in the last 5 years covering 2014-2018 period, while it decreased by CAGR of 1.6% on value basis and realized as 3.66 million tons and 12.06 billion dollars in 2018.

Production of plastic packaging materials was realized as 1 million 746 thousand tons and 5.4 billion dollars in the first half of 2019 decreasing by 14% on amount and 21% on value basis compared to the peer period of 2018.



Graphic 1: Peer Period Comparision of Plastics Packaging Materials Production
Source: TurkStat and ITC Trade Statistics

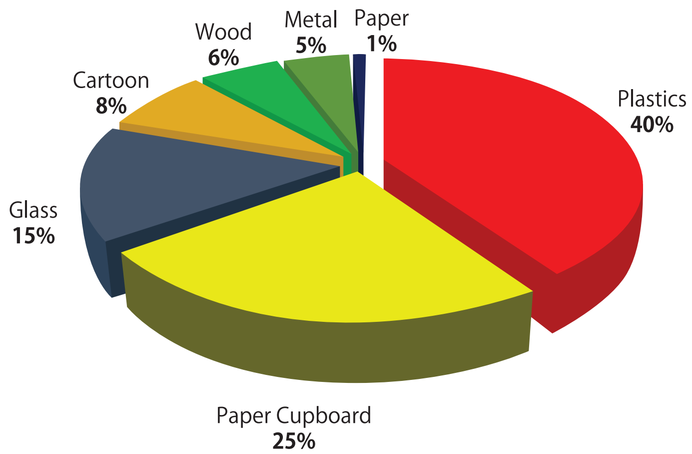
Plastic packaging production is expected to increase to 3.4 million tons and 10.5 billion dollars at the end of 2019 decreasing by 7% on amount and 13% on value basis compared to 2018.



Graphic 2: Plastic Packaging Materials Production
Source: TurkStat and ITC Trade Statistics

Production of plastic packaging materials share 40% in the total production of the packaging materials in Turkey.

2. PRODUCTION



Graphic 3: Shares of Materials in Total Packaging Production in Turkey
Source: ASD

3. FOREIGN TRADE

Plastics packaging foreign trade can be examined by 5 custom duty code numbers specified as follows with HS Codes of 39.19, 39.20, 39.21 ve 39.23

HS CODE	Definitions
39.19	Adhesive plate, sheet, strip, slide, etc. from plastic; flat
39.20	Other plate, sheet, pellicule and slides from plastic
39.21	Other plates, sheets, pellicules, foils and slides from plastic
39.23	Plastic products for moving furniture, tap, cap, capsule

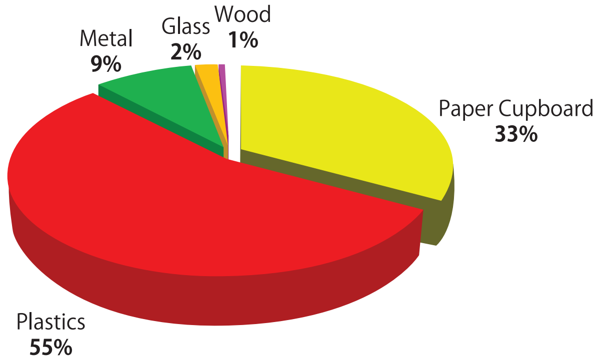
Table 2: Plastic Packaging Industry By HS Codes
Source: TurkStat and ITC Trade Statistics

3. FOREIGN TRADE

3.1. IMPORTS

Although Turkish plastic packaging is sufficient to meet the requirements of requirements of the domestic manufacturing industry with its structural and technological aspects, the materials are imported come with their own packaging materials.

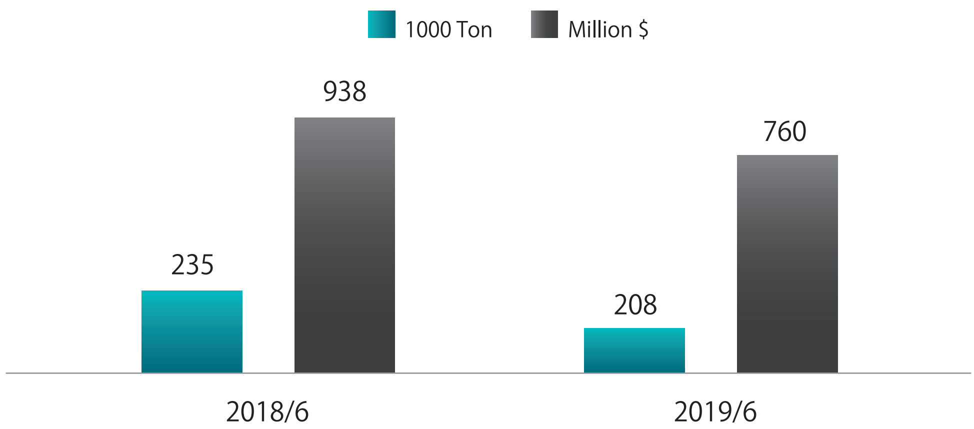
As new products begin to be manufactured in Turkey, their packaging materials will be produced in Turkey and market volume will grow accordingly. The share of total imports of plastic packaging industry is 55% in total packaging imports.



Graphic 4: Packaging Materials Imports By Types
Source: ASD

Imports of plastic packaging materials remained almost the same on amount basis in the last 5 years covering 2014 - 2018 period, while they decreased by 2.9% on value basis and realized as 420 thousand tons and 1.68 billion dollars in 2018.

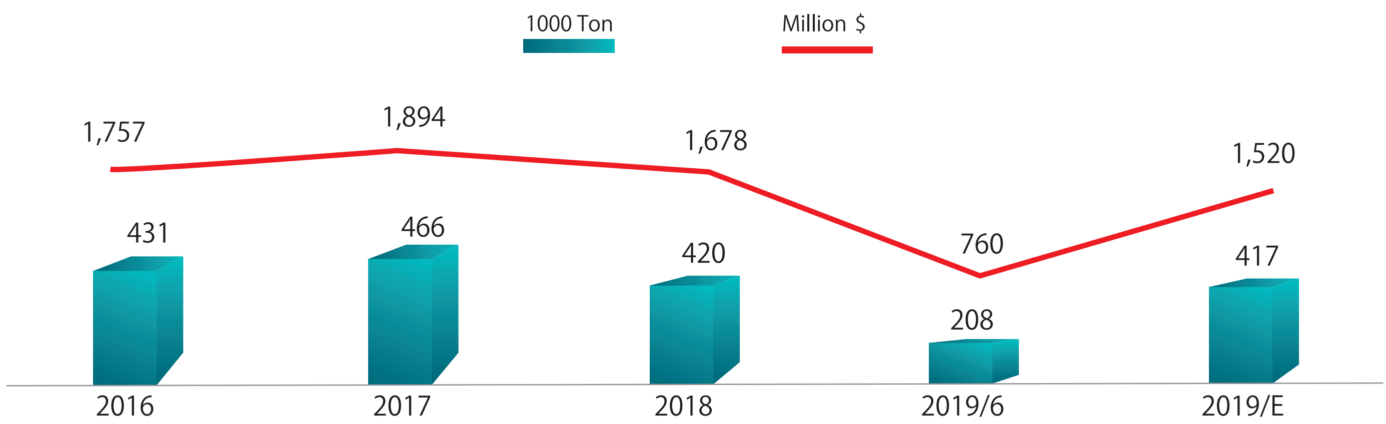
In the first 6 months of 2019, plastic packaging material imports amounted to 208 thousand tons and 760 million dollars, decreasing by 11% on amount and 19% on value basis compared to the peer period of 2018.



Graphic 5: Peer Period Comparision og Plastic Packaging Materias Imports
Source: TurkStat and ITC Trade Statistics

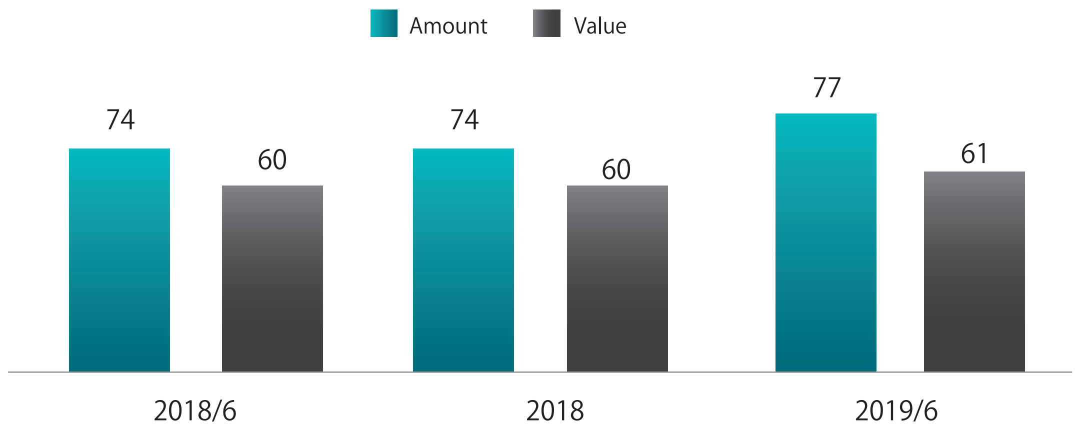
Imports of plastic packaging materials are expected to increase to 417 thousand tons and 1 billion 520 million dollars at the end of 2019 decreasing by 1% on amount and 9% on value basis compared to 2018.

3. FOREIGN TRADE



Graphic 6: Plastic Packaging Material Imports
Source: TurkStat and ITC Trade Statistics

While the share of imports of plastic packaging materials in total plastics imports was 74% on amount and 60% on value basis in 2018, the shares increased to 61% on amount and 77% on value basis in the first 6 months of 2019.



Graphic 7: Share of Plastics Packaging Imports in Total Plastics End Products Imports (%)
Source: TurkStat and ITC Trade Statistics

3. FOREIGN TRADE

3.2. IMPORTS BY COUNTRIES

Plastic packaging materials are imported from more than 80 countries. The share of 10 countries in total imports amounted to 67% on amount and 73% on value basis in the first half of 2019.

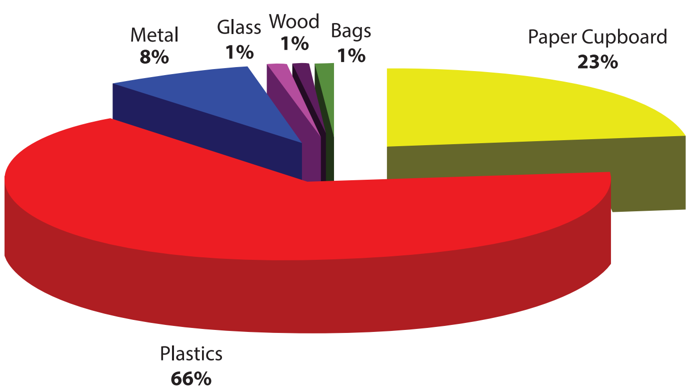
Germany, China, Italy, South Korea and France made up the first 5 biggest import partners with 57% share in the total imports of the plastics packaging materials in the the first half of 2019.

Countries	1000 Ton	Million $	Ton -%	$ -%
Germany	30	150	14	20
China	48	121	23	16
Italy	18	70	9	9
South Korea	10	49	5	6
France	9	44	4	6
USA	3	33	2	4
Belgium	6	28	3	4
United Kingdom	4	23	2	3
Çorlu Free Zone	8	19	4	2
Switzerland	2	17	1	2
Top 10 Countries	139	553	67	73
Other	69	207	33	27
Total	208	760	100	100

Table 3: The first 10 Countries in Plastic Packaging Materials Imports (2019/6)
Source: TurkStat

3.3. EXPORTS

The share of total exports of plastics packaging industry is % 66 in total packaging imports.

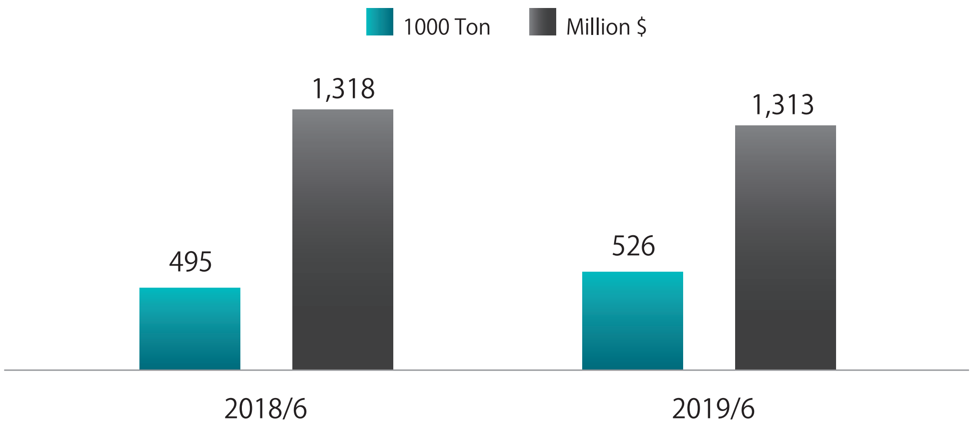


Graphic 8: Share of Plastics in Total Packaging Materials Exports
Source: ASD

Exports of plastic packaging materials in the last 5 years covering 2014 - 2018 period, increased by CAGR of 8.9% amount and by CAGR of 2.9% on value basis and realized as 1 million 14 thousand tons and 2.64 billion dollars in 2018.

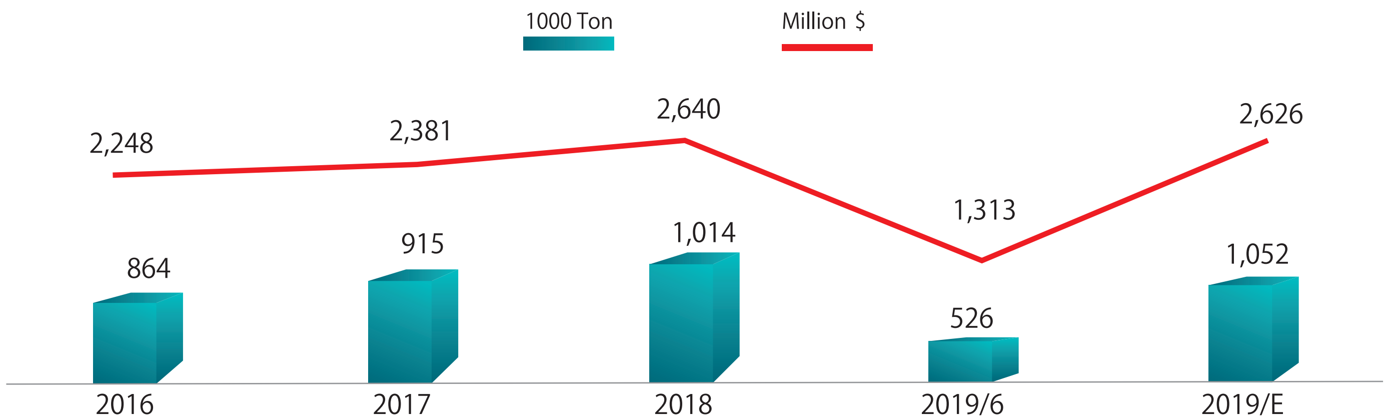
3. FOREIGN TRADE

Exports of plastic packaging materials realised as 526 thousand tons and 1.3 billion dollars in the first 6 months of 2019 increasing by 6% on amount basis and remained almost the same on value basis compared to the peer period of 2018.



Graphic 9: Peer Period Comparision of Plastics Packaging Materials Exports
Source: TurkStat and ITC Trade Statistics

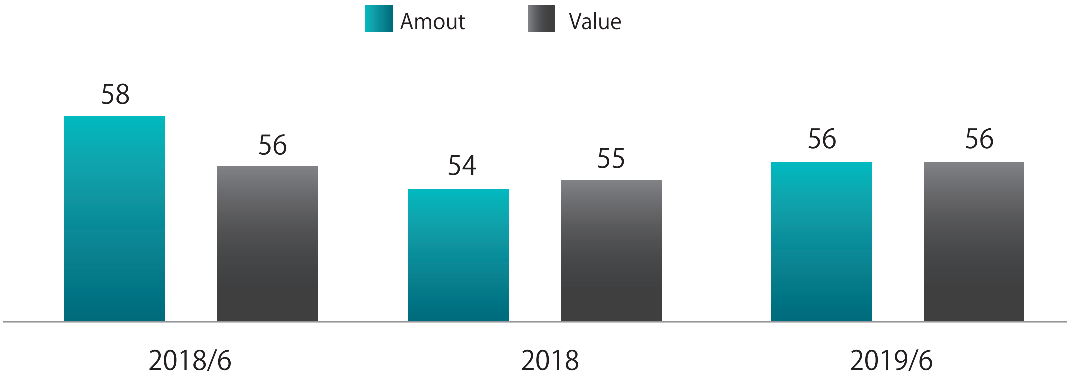
Exports of plastic packaging materials are expected to increase to 1 million 52 thousand tons and 2.63 billion dollars by the end of 2019 increasing by 4% on amount and decreasing by 1% on value basis.



Graphic 10: Plastics Packaging Materials Exports
Source: TurkStat and ITC Trade Statistics

3. FOREIGN TRADE

Share of plastic packaging materials exports in total plastics industry exports which was 54% on amount and 55% on value basis, increased to 56% on amount and value basis in the first half of 2019.



Graphic 11: Share of Plastic Packaging Exports in Total Plastics End Products Exports (%)
Source: TurkStat and ITC Trade Statistics

3.4. EXPORTS BY COUNTRIES

Turkey exports plastic packaging products to more than 150 countries and 10 major export partners had 52% on amount and 49% share on value basis in the first half of 2019. In this period, UK, Germany, Iraq, Israel and USA kept their status of top 5 export markets with 32% share.

Countries	1000 Ton	Million $	Ton -%	$ -%
United Kingdom	48	108	9,0	8,2
Germany	30	99	5,8	7,6
Iraq	49	91	9,4	6,9
İsrael	32	63	6,0	4,8
USA	23	57	4,4	4,4
Italy	22	52	4,3	3,9
France	17	48	3,2	3,7
Spain	23	46	4,4	3,5
Romania	15	38	2,8	2,9
Netherlands	12	37	2,2	2,8
Top 10 Countries	271	639	51,5	48,6
Other	255	674	48,5	51,4
Total	526	1,313	100.0	100.0

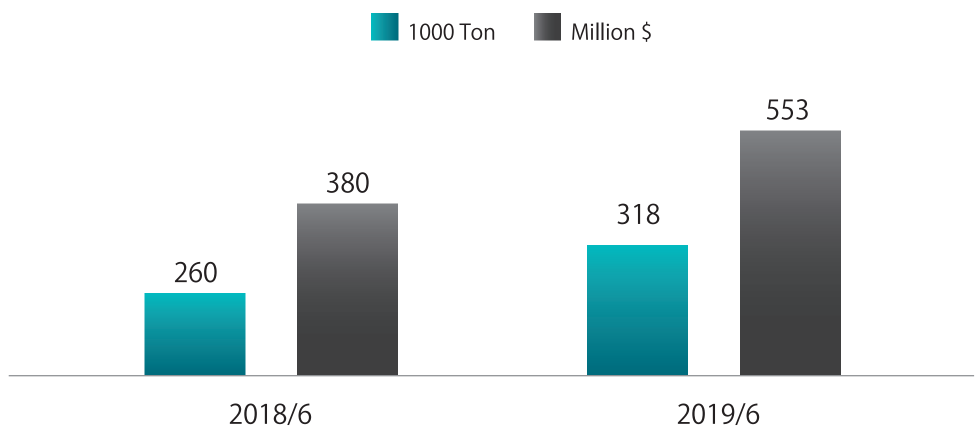
Table 4: Major Export Partners For Plastic Packaging Materials (2019/6)
Source: TurkStat and ITC Trade Statistics

3.5. FOREIGN TRADE SURPLUS

Turkey has foreign trade surplus in terms of amount and value in total foreign trade of plastic packaging products.

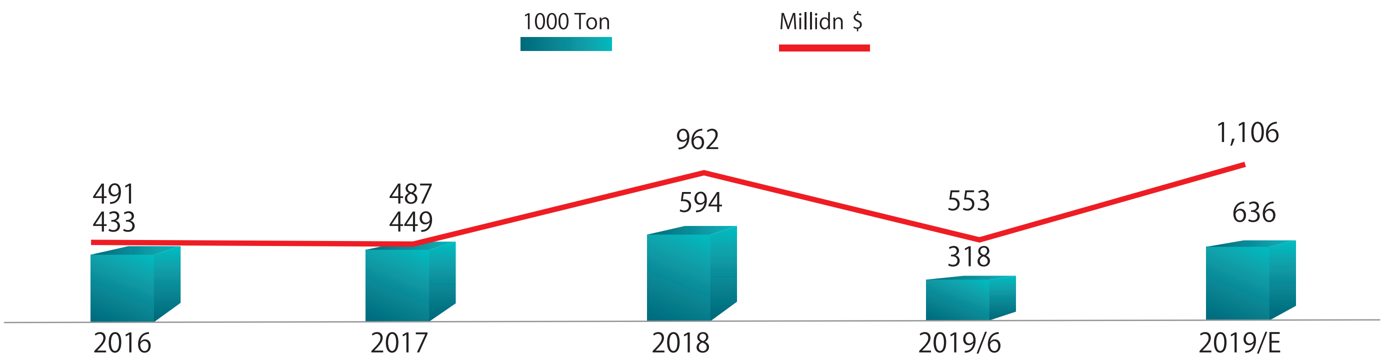
The foreign trade surplus of plastic packaging materials increased by CAGR of 18.9% on amount and CAGR of 19.9% on value basis in the last 5 years covering 2014 - 2018 period and realized as 594 thousand tons and 962 million dollars in 2018.

The foreign trade surplus of plastic packaging materials was realized as 318 thousand tons and 553 million dollars in the first 6 months of 2019 increasing by 22% on amount and 46% on value basis compared to the same period of 2018.



Graphic 12: Plastic Packaging Materials Foreign Trade Surplus
Source: TurkStat and ITC Trade Statistics

The foreign trade surplus is expected to increase to 636 thousand tons and 1 billion 106 million dollars at the end of 2019 increasing by 7% on amount and 15% on value basis compared to 2018.



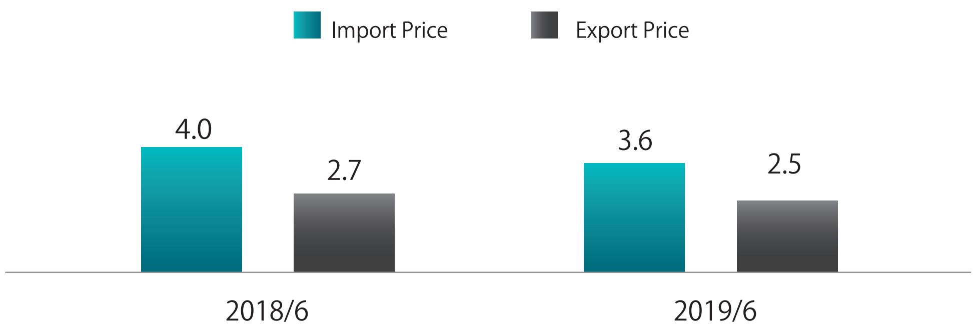
Graphic 13: Plastics Packaging Materials Foreign Trade Surplus
Source: TurkStat and ITC Trade Statistics

3.6. IMPORT AND EXPORT PRICES

Average import prices of plastic packaging products have been over the average export prices in Turkey. This shows that Turkey imports plastic packaging products with higher added-value while exporting products with lower added-value.

Average import price realized as 3.6 $/kg and average export unit price 2.5 $/kg for plastic packaging materials in the first half of 2019. Import price declined by 10% and export price declined by 7% in this period compared to 2018.

On the other hand, unit export prices were 31% lower than unit import prices in this period.



Graphic 14: Plastic Packaging Materials Average Unit Foreign Trade Prices ($/Kg)
Source: TurkStat and ITC Trade Statistics

3.6. VALUE ADDED CREATED BY EXPORTS

In the first 6 months of 2019, 1.2 dollars per kg value added was created in the export of plastic packaging materials. The ratio of value added to unit export price is around 48%.

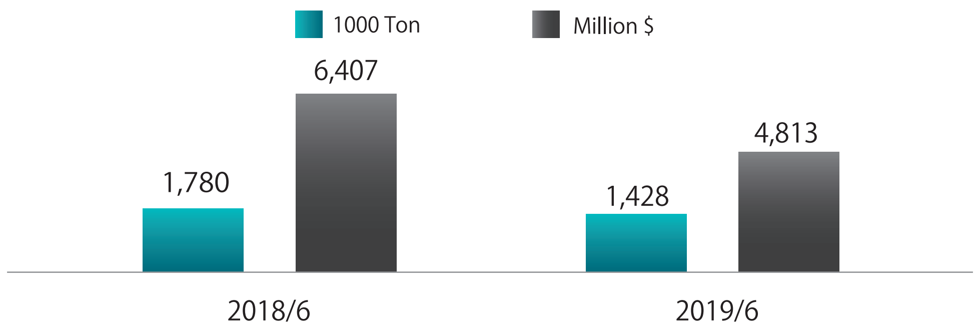
While the added value created in exports remained at the same level compared to the peer period of 2018, the ratio of value added to the export price decreased by 1 point.

	2018	2019/6
Export Price	2.7	2.5
Raw Matrials Price	1.5	1.3
Value Added	1.2	1.2
Value Added/Export Price (%)	49	48

Table 5: Value Added Created By Plastics Packaging Materials Exports ($/kg)
Source: TurkStat and ITC Trade Statistics

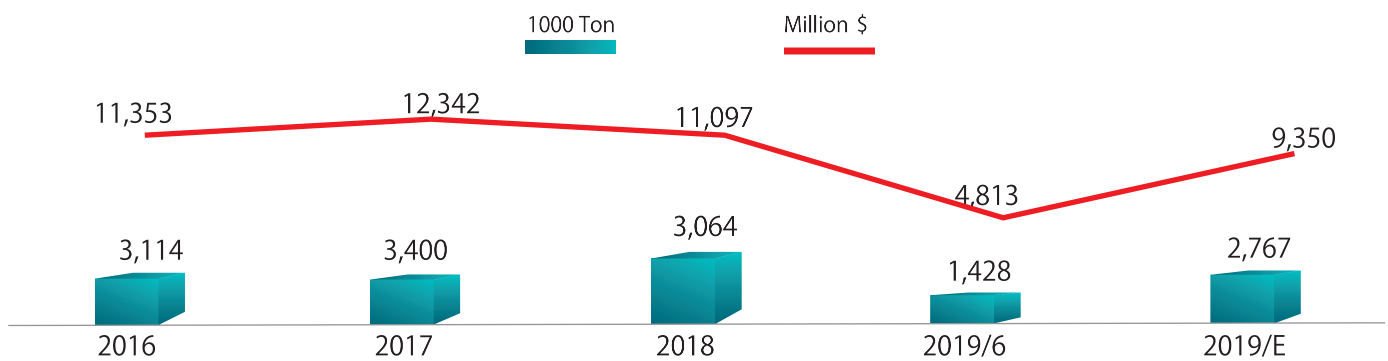
4. DOMESTIC CONSUMPTION

Domestic consumption of plastic packaging materials increased by CAGR of 0.4% on amount and decreased by CAGR of 2.7% on value basis in the last 5 years covering 2014 - 2018 period and realized as 3.1 million tons and 11.1 billion dollars in 2018.



Graphic 15: Peer Period Comparision of Domestic Consumption of Plastic Packaging Matrials
Source: TurkStat and ITC Trade Statistics

The domestic consumption of plastic packaging materials is expected to be 2.8 million tons and 9.4 billion dollars at the end of 2019 and decreasing by 10% on amount and decreasing by 16% on value basis compared to 2018.



Graphic 16: Plastic Packaging Materials Domestic Consumption
Source: TurkStat and ITC Trade Statistics

5. SUPPLY AND DEMAND EQUILIBRIUM

Turkey, shows a faster development than the EU Countries the economies of which are more developed and relatively sophisticated packaging markets have reached saturation points. Growing urbanization trend, the lengthening of the average life expectancy, women's increasing population of working life, the contribution of consumption habits and the expectations of consumers; developed the self-service in the central and consumer direct selling hypermarket, promotes the spread of supermarkets and supermarket chains in the entire country.

This support the development of use of retail systems packaging. Likewise, consumers in markets achieve the possibility of finding with many more varieties of cheap but good quality and reliable products, price and quality.

Apart from customer service, sale promotions, special discounts, free product coupons directs customers preferably to purchase from the store. To sum up; the chain of shopping malls and retail sales racks and feed the order accordingly packaged product demand. (Source: ASD)

In the plastics packaging materials industry in the first half of 2019 on amount basis; 31% of production was exported and 15% of domestic consumption was met by imports.

	1000 Ton				% Increase	
	2018/6	2018	2019/6	2019/T	2019/2018(6)	2019/2018(E)
Production	2,040	3,658	1,746	1,746	-14	-7
Imports	235	420	208	208	-11	-1
Exports	495	1,014	526	526	6	4
Domestic Consumption	1,780	3,064	1,428	1,428	-20	-10
Foreign Trade Deficit/Surplus	260	594	318	318	22	7
Exports/Production (%)	24	28	30	30		
İlmports/Domestic Consumption (%)	13	14	15	15		

Table 6: Supply and Demand Equilibrium in Plastic Packaging Materials Industry
Source: TurkStat and ITC Trade Statistics

5. SUPPLY AND DEMAND EQUILIBRIUM

On the other hand in the same period on value base; 25% of production was exported and 16% of domestic consumption was met by imports.

	1000 Ton				%Increase	
	2018/6	2018	2019/6	2019/T	2019/2018(6)	2019/2018(E)
Production	6,787	12,060	5,366	10,456	-21	-13
Imports	938	1,678	760	1,520	-19	-9
Exports	1,318	2,640	1,313	2,626	0	-1
Domestic Consumption	6,407	11,097	4,813	9,350	-25	-16
Foreign Trade Deficit / Surplus	380	962	553	1,106	46	15
Exports / Production (%)	19	22	24	25		
İlmports / Domestic Consumption (%)	15	15	16	16		

Table 7: Supply and Demand Equilibrium in Plastics Packaging Materials Industry
Kaynak: TUİK ve ITC Dış Ticaret İstatistikleri

6. CONCLUSION

Plastics have become increasingly sophisticated, lightweight and versatile thanks to innovative technologies, replacing traditional packaging such as glass and paper in many areas. Previously, in addition to conventional packaging materials such as paper, glass and wood, recycled natural material films such as cellulose acetate and cellophane transparent cellulose film have been used, plastic packaging has been widely used in the 1950s with the introduction of polyethylene. With the development of polystyrene, polypropylene, PVC, polyester and polyethylene copolymers, the rapid increase in the use of plastic in packaging has begun.

Despite the size and economic importance of the industry, plastic packaging manufacturers are under 2 main considerable pressure. On the one hand, raw material suppliers determine the prices of plastics especially the food industry, great pressure is applied by the customers to lower the prices. In addition, it is known that in many countries, especially in Eastern Europe, especially the manufacturers have the possibility of quality extrusion and printing at lower costs and therefore the competition is rapidly increasing in these countries. On the other hand, Far East competition is increasing especially in the field of barrier materials and printing technology.

It is known that food packaging, which constitutes 55% of the total market in terms of product areas and which is the biggest area of the whole packaging industry, will be the most important growth market for plastic packaging. Demographic developments such as the increase in the number of homes and elderly people living in one and two people contribute to the growth of the market.

Innovation is also an important factor of success in this sector. In the plastic packaging industry, companies that use R&D intensively to develop new products that are easy to use for the market will have a strategic advantage over their competitors. In developed countries, the plastic packaging industry makes use of R&D to open new markets both in the packaging sector and in similar fields.

In recent years, the volume of plastics used for packaging purposes has decreased by approximately 30% on average, and during the same period, films used for palletization have decreased by 78% and containers of yellow oil products by 27%. Looking ahead, it is predicted that the efficiency of multi-material processes will continue to break new ground in areas such as plastics, which are breathable packages for packaging food.

Export in Turkey producing innovative products to increase the value-added must be a global center of excellence. The main actions that can be taken for this purpose are; To produce design products, to produce products with useful models, to produce technological products, to determine the priorities in R&D investments in the plastic packaging sector, to establish R&D and P&D policies, to stand out with R&D in the world, to develop the mechanisms to encourage mergers and acquisitions to increase international competitiveness, to increase university-industry cooperation, to ensure that scientific studies carried out in universities are aimed at the R&D and innovation activities needed by the plastic packaging sector and should be considered.

ÇEVRE Mİ? ENDÜSTRİ Mİ? İKİSİ DE MÜMKÜN.

Plastik Sektörünün Birleştirici Gücü PAGEV, "Sorumlu Endüstri Sorunsuz Çevre" ilkesiyle yola çıkan **PAGÇEV** ile beraber Türk Plastik Sektörü'nün en büyük hayalini gerçekleştirmek ve gelecek nesillere daha yeşil bir dünya bırakmak için **çalışıyor.**

Çevre ve Şehircilik Bakanlığı tarafından Ambalaj Atıklarının Geri Dönüştürülmesi konusunda Yetkilendirilen **PAGÇEV**, piyasaya sürdükleri ambalajların atıklarını geri dönüştürmesi yasayla zorunlu olan firmaların için bu işlemleri kolay hale getiriyor.

Bu kolaylıktan yararlanmak için **PAGÇEV** ile çalışın bu hayale siz de ortak olun.

PAGEV www.pagev.org

PAGÇEV www.pagcev.org

PAGÇEV bir PAGEV GERİ DÖNÜŞÜM İKTİSADİ İŞLETMESİDİR