

***TURKISH
PHARMACEUTICAL
MARKET
2014***

TURKISH PHARMACEUTICAL MARKET 2014



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Contents

Introduction

A. Turkish Pharmaceutical Market.....	1
a. Originator vs. Generic Products.....	3
b. Import vs. Local Products	5
c. New Product Entries to the Market.....	6
d. Pharma Pricing Regulation	7
e. Retail Price Ranges	10
f. Average Prices	13
g. Therapeutic Groups	13
B. Foreign Trade	15
C. Conclusion and Assessment.....	18

List of Charts

Chart 1- Turkish Pharmaceutical Market.....	2
Chart 2- Originator-Generic Products (Value)	4
Chart 3- Originator-Generic Products (Volume).....	4
Chart 4- Market Share of Originator-Generic Products (Value).....	4
Chart 5- Market Share of Originator-Generic Products (Volume)	4
Chart 6- Import-Local Products (Value).....	5
Chart 7- Import-Local Products (Volume)	5
Chart 8- Market Share of Import-Local Products (Value)	6
Chart 9- Market Share of Import-Local Products (Volume).....	6
Chart 10- Retail Price Distribution	10
Chart 11- Price Distribution of Generic Products	10
Chart 12- Price Distribution of Originator Products	11
Chart 13- Price Distribution of Import Products	12
Chart 14- Price Distribution of Local Products	12
Chart 15- Therapeutic Groups (Value).....	14
Chart 16- Therapeutic Groups (Volume)	14
Chart 17- Pharmaceutical Industry within Turkish Foreign Trade	16
Chart 18- Real Change in Net Sales (2009-2013).....	19
Chart 19- Operating Profitability / Net Sales (2009-2013).....	19
Chart 20- Net Profitability / Equity (2009-2013).....	20
Chart 21- Real Change in Equity (2009-2013)	20

List of Tables

Table 1- Overall Market Sub Distributions	3
Table 2- Sub Distributions of Originator-Generic Products	5
Table 3- Sub Distributions of Import-Local Products	6
Table 4- Quantitative Distribution of the Products in Market	7
Table 5- Reference Price Ratios	8
Table 6- Discount Rates	9
Table 7- Average Price Distribution (TL).....	13
Table 8- Average Price Change	13
Table 9- Import and Export of Pharmaceutical Products (million USD).....	15
Table 10- Import on Basis of Countries.....	17
Table 11- Export on Basis of Countries	17
Table 12- Public Pharmaceutical Expenditures and Prescription Data.....	18

INTRODUCTION

Pharmaceutical manufacturing, with its direct implications on the quality of human life and its technologically-rich manufacturing requirements, has been named an industry of strategic importance for Turkey for both its social and economic impacts. Growing in tandem with the expansion of the country's medical needs, the landscape of the Turkish pharmaceutical industry has changed quickly over the course of the past ten years, following the reform of the country's healthcare sector under the Turkish Ministry of Health's "Health Transformation Program" which began a decade ago.

The operational experience of the Turkish pharmaceutical manufacturer includes decades of history which has given way to an industry strongly committed to upholding international quality standards. On par with products produced in developed markets, owing to the quality of the country's human capital and state-of-the-art technology, the footprint of Turkish pharmaceuticals now extends to 170 countries, among which include member nations of the European Union (EU), the Commonwealth of Independent States (CIS), North Africa and the Middle East.

Established in 1964, the Pharmaceutical Manufacturers Association of Turkey (IEIS) is committed to improving the business conditions of its members and contributing to the development of healthcare policies within Turkey. Though the core of IEIS's 60 members, which include national and multinational companies alike, consists of pharmaceutical producers, the IEIS closely follows the interests of all segments of the pharmaceutical industry in seeking to realize the organization's larger goal of furthering the global presence of an industry that is strongly focused on both export-led growth and the production of value-added products through its R&D activities.

In this report prepared by IEIS, the changes observed in the Turkish pharmaceutical industry over the course of the past five years are analyzed in detail. Market construction includes both prescription and non-prescription medicines licensed by the Ministry of Health, as well as medical devices that take the form of pharmaceuticals, infant medical formulas, and food supplements approved by the Ministry of Food, Agriculture and Livestock.

A. Turkish Pharmaceutical Market

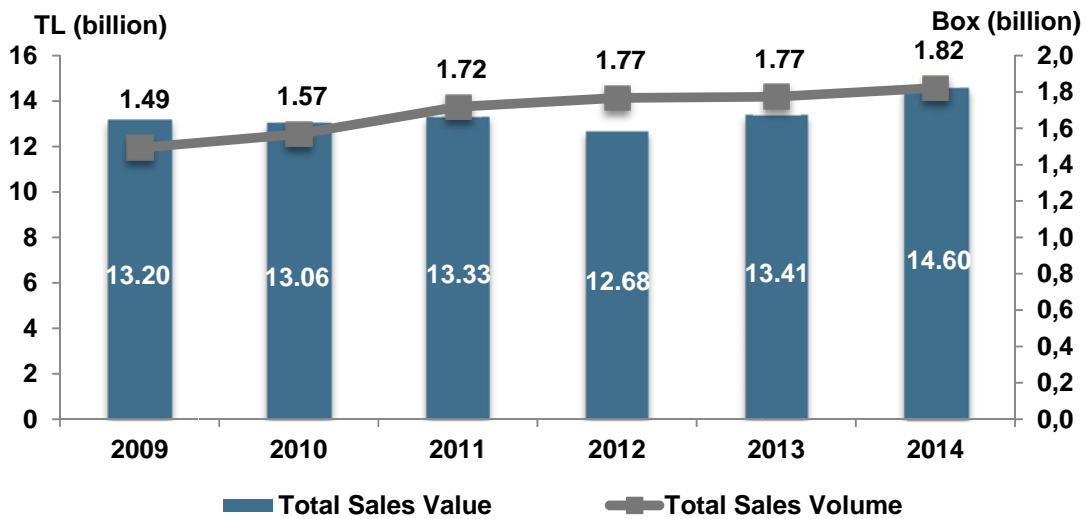
The Turkish market for pharmaceuticals reached a size of 14.6 billion Turkish lira in 2014, growing by 8.8% from the previous year. Unit sales rose by 2.7% over this same period, reaching a value of 1.82 billion units. The price of newly-introduced products which stood higher than the average price of pharmaceuticals currently on the market was the main contributor to growth.

When compared against preceding years, the market growth in 2014 is phenomenal, since the total growth has remained only at 10.6% over a five year period. In 2009, the Turkish pharmaceutical market stood 1.4 billion Turkish liras smaller than that of today. If weighed against wholesale inflation over this five year period, the Turkish market for pharmaceuticals declined by 23.1%, in real terms.

Touching on what is perhaps the defining characteristic of the Turkish market of today, and highlighting the impact that the country's Health Transformation Program has had on public health, pharmaceutical sales as measured by volume grew by 22.1% from 2009 until 2014. Chiefly spurred by improved medical access and growth in annual doctor visits per capita, public consumption of pharmaceuticals grew rapidly over this period. Yet the Turkish government has actively sought to counter balance the impact that this unit growth has had on its pharmaceutical budget through strict price controls.

This is observed most acutely in the declines that have been seen in the average price levels of pharmaceuticals which regressed from 2009 until 2014, falling from 8.84 TL to 8TL – a decline of nearly 9.4% in nominal terms.

Chart 1- Turkish Pharmaceutical Market



Source: IMS, İEİS

Over this same five-year period, the profile of the Turkish market for pharmaceuticals underwent restructuring, observed across two events. First, the presence of the multinational pharmaceutical companies expanded rapidly. 33 multinational pharmaceutical companies entered the Turkish market over the course of the past five years, bringing the total number of foreign entities within the domestic market to 106. Collectively, these 106 companies constitute 67% of total domestic market share. Second, market concentration intensified. While in 2009 45 companies made up 90% of the total market for pharmaceuticals, five years later, 60 companies now control this same proportion, 70% of which are multinationals.

Combined, the effect of lower levels of prices has been to reshape the portfolio dynamics of Turkish pharmaceutical manufacturers: in 2014, the value of the prescription drug market shrank to below 90% of total market value, of which, reimbursed prescriptions accounted for just 85.6%, a decline from 91.6% in 2009.

Table 1- Overall Market Sub Distributions

	UNIT		TL	
	2009	2014	2009	2014
Overall Market	100%	100%	100%	100%
Prescription Drugs	90.2%	88.1%	93.5%	89.2%
Prescription Reimbursed	88.7%	86%	91.6%	85.6%
Prescription Non- reimbursed	1.5%	2%	1.8%	3.6%
Non-prescription Drugs	2.3%	2%	0.8%	0.9%
Non-prescription Reimbursed	2.3%	1.7%	0.8%	0.7%
Non-prescription Non- reimbursed	0.04%	0.36%	0.01%	0.2%
Other*	7.5%	10%	5.7%	10%
Other Reimbursed	3.8%	6%	2.2%	3.7%
Other Non- reimbursed	3.7%	3.9%	3.5%	6.2%

Source: IMS, İEİS

*Other products: Medical baby formulas and some medical devices in pharmaceutical form, and food supplements approved by the Ministry of Food, Agriculture and Livestock.

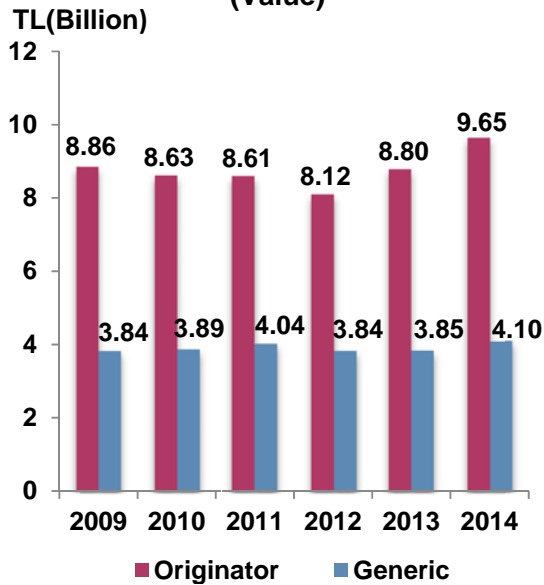
a. Originator vs. Generic Products

The originator drug market, which stood at a value of 8.8 billion TL in 2013, reached 9.65 billion TL in 2014. An increase of 9.7% from the previous year, this growth was primarily spurred by increased sales of imported originator products, which in itself grew by 10.3%. Turkey's generic market grew by 6.4% from the previous year, reaching a size of 4.1 billion TL in 2014, predominately led by an increase in domestically produced generic products, which rose by 7.3% over the previous year. Volume growth for both of these product categories stood less; originator and generic products increased by 2.7% and 2.5%, respectively, in 2014.

To assume that growth in both of these product categories typified annualized growth patterns would be far from the case. Between 2009 and 2014, the value of the market for originator drugs, which declined during the first three years of this period, increased only in 2013 and 2014, allowing for collective market growth to reach 8.9% over the course of the past five years. The market for generic drugs, on the other hand, grew by only 6.7% from 2009 until 2014. Taken as an aggregate, for neither product category was market growth rapid enough to outpace inflation, which led to a collective real decline of 24.3% and 25.8% for originator and generic products, respectively.

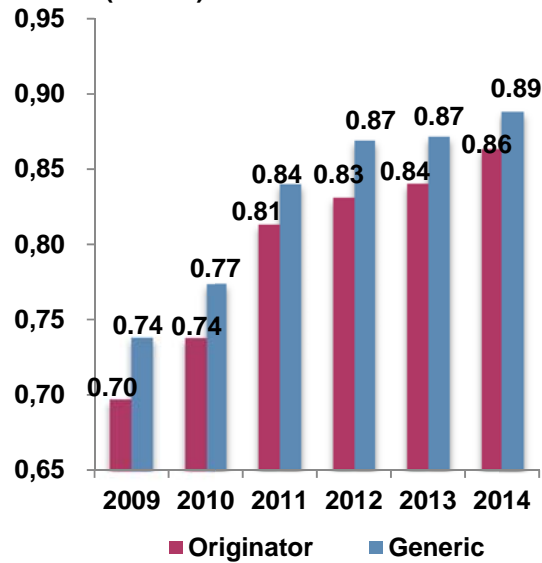
This was reflected in growth of product volumes, which, although increasing by 24% for originator and 21% for generics over this five year period, did little to alleviate the impact of these decreases in market value: again, a product of the decreases in drug prices experienced by the industry.

Chart 2- Originator-Generic Products (Value)



Source: IMS, İEİS

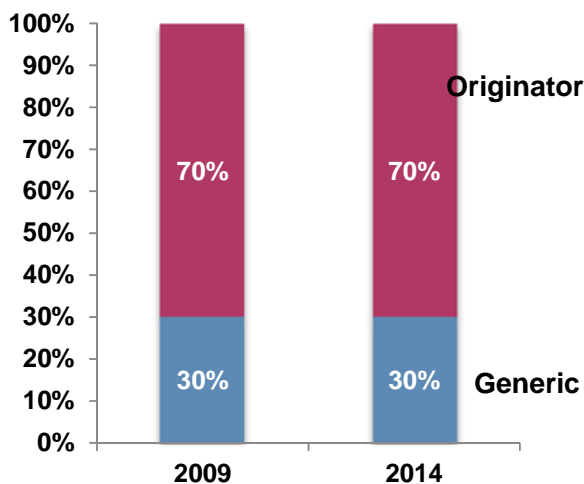
Chart 3- Originator-Generic Products (Volume)



Source: IMS, İEİS

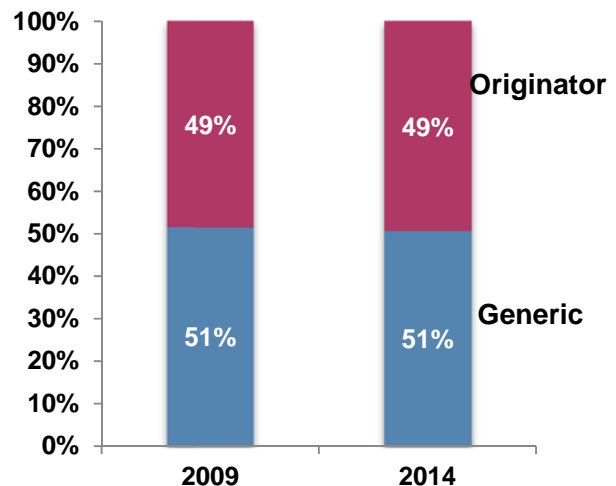
The market share of generic and originator drugs did not change over the course of the past five year period. Originator drugs received 49% of the total market share, but comprised 70% of total market value.

Chart 4- Market Share of Originator-Generic Products (Value)



Source: IMS, İEİS

Chart 5- Market Share of Originator-Generic Products (Volume)



Source: IMS, İEİS

A divide exists between sources of production for pharmaceuticals in Turkey. Originator products show a tendency towards importation. Typically, generic products are produced domestically.

Table 2- Sub Distributions of Originator-Generic Products

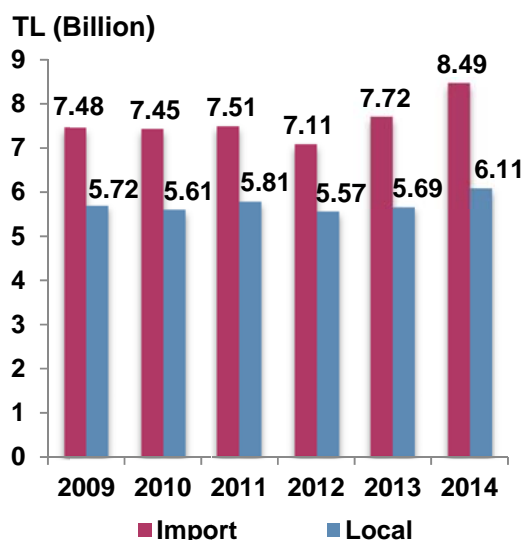
	ORIGINATOR DRUGS				GENERIC DRUGS			
	2009		2014		2009		2014	
	Import	Local	Import	Local	Import	Local	Import	Local
Box (mn)	37%	63%	48%	52%	6%	94%	3%	97%
	258	439	412	452	46	692	27	866
TL (mn)	75%	25%	78%	22%	12%	88%	6%	94%
	6,644	2,220	7,555	2,097	472	3,371	228	3,873

Source: IMS, İEİS

b. Import vs. Local Products

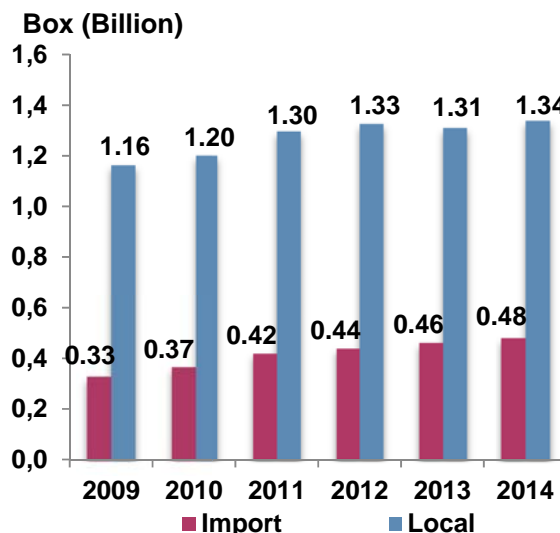
Over the course of the past five years, the Turkish pharmaceutical market has favored the importation of foreign pharmaceutical products over those manufactured domestically. Though initially, following the enforcement of price-control methods in 2009, foreign pharmaceutical imports stagnated, over the course of the past two years, these products have expanded their presence within Turkey – first by 8.7% in 2013 and then by 10% in 2014, exhibiting collective growth of 13% over this five year period. Over this same period, domestic production grew by a paltry 6.8%. This discrepancy in growth between foreign and local product sales held true in examining volume growth. Though foreign drug imports grew by 47%, local production grew only by 15%.

Chart 6- Import-Local Products (Value)



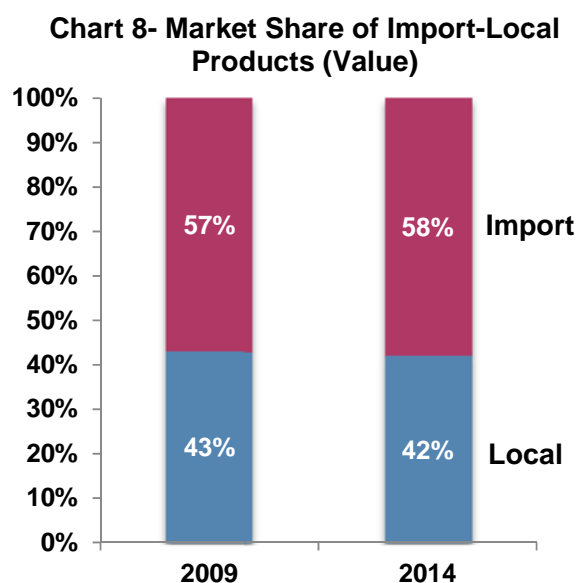
Source: IMS, İEİS

Chart 7- Import-Local Products (Volume)

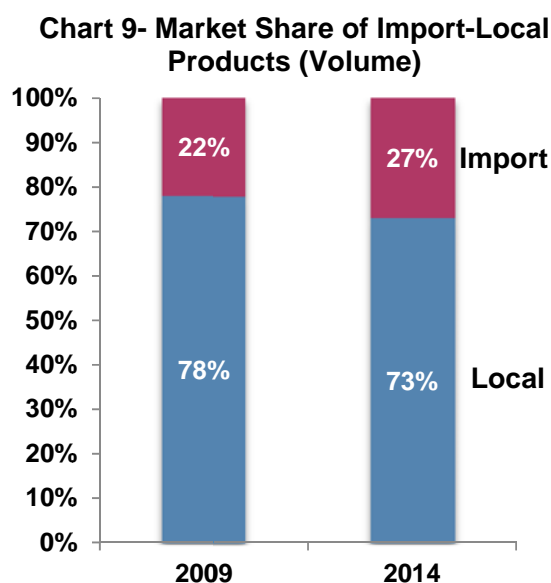


Source: IMS, İEİS

Regardless of examining the size by either value or volume, the relative market share of imported drugs has risen strongly against those produced domestically since 2009.



Source: IMS, İEİS



Source: IMS, İEİS

While the presence of originator products, which are largely imported, has increased if measured by both value and volume, that proportion of these products which has been manufactured domestically has fallen over the course of the past five years. In 2014, 65% of the drugs manufactured in Turkey were generic pharmaceuticals.

Table 3- Sub Distributions of Import-Local Products

	Import Drugs				Local Drugs			
	2009		2014		2009		2014	
	Ori.	Gen.	Ori.	Gen.	Ori.	Gen.	Ori.	Gen.
Box (mn)	85%	15%	94%	6%	39%	61%	34%	66%
TL (mn)	258	46	412	27	439	692	452	866
	93%	7%	97%	3%	40%	60%	35%	65%
	6,644	472	7,555	228	2,220	3,371	2,097	3,873

Source: IMS, İEİS

c. New Product Entries to the Market

In 2014, the Turkish pharmaceutical industry grew across a diverse array of product areas. While 753 products were withdrawn from the market, 736 new products were launched, of which 464 were licensed products and 272 were non-pharmaceutical products such as food supplements. Of the 464 new pharmaceutical products to reach the Turkish market, 125, or 27%, of these products were originator products and 332 were generic pharmaceuticals. Of

equal interest, 136, or 29%, of these products were imported from foreign markets. The remaining 328 products were produced locally.

Table 4- Quantitative Distribution of the Products in Market

	2014
Market Total	11,229
Entries	736
Licensed Drugs	464
Originator	125
Generic	332
Import	136
Local	328
Other	272
Withdrawals	753
Reimbursement List	8,344
Entries	424
Originator	112
Generic	312
Import	119
Local	305
Withdrawals	1,229

Source: İEİS

Of the 736 products that were added to the market in 2014, 424 were included on the Turkish government's reimbursement list. Bearing in mind alterations to this list, such as the removal of 1,229 products from the reimbursement system, the total number of products eligible for reimbursement stood at 8,344 at the end of 2014. 26% of these new products eligible for reimbursement in 2014 were originator products, with the remaining 74% represented by generic products. 28% of these products were imported from foreign markets, with the remaining 72% represented by those produced locally.

d. Pharma Pricing Regulation

Turkey's system of price referencing was first introduced in 2004, with the intent of checking governmental healthcare expenditures through linking the price of pharmaceuticals to the lowest price at which a similar pharmaceutical product is produced within a basket of five European nations (France, Greece, Italy, Portugal and Spain). Whichever region produces a specified pharmaceutical at the lowest price so will that price become the reference price for producer prices in Turkey.

Once a reference price has been set, then official prices of products in different categories are established based on a fraction of the reference price. For example, while an originator product with no generic competitor may have the right to receive 100% of the reference price, an originator and generic product that compete against one another are subject to

60% of the reference price. In effect, the result of this is that as soon as a generic drug that competes against an originator product is introduced in the domestic market, the price of the originator product falls by 40%.

Of additional importance, in interpreting the rate at which the reference price is applied to the Turkish market, as the rate of origin is denominated in the Euro, an exchange rate is employed in converting this rate to the Turkish lira. In spite of the variance in the currency level, this conversion rate has remained frozen at 1.9595 TL since April 2009.

Table 5- Reference Price Ratios

		2009	2010	2011	2012	2013	2014
Originator	Retail price 5.22 TL and below	100	100	100	100	100	100
	Retail price between 5.23 and 9.97 TL	100	100	100	100	100	100
	Retail price between 9.98 and 14.97 TL	100	100	100	100	100	100
	Retail price 14.98 TL and over	100	100	100	100	100	100
Originator with a Generic Product and the Generic Product	Retail price 5.22 TL and below	100	100	100	100	100	100
	Retail price between 5.23 and 9.97 TL	80	66	66	60	60	60
	Retail price between 9.98 and 14.97 TL	80	66	66	60	60	60
	Retail price 14.98 TL and over	80	66	66	60	60	60
Twenty Years	Retail price 55.22 TL and below	100	100	100	100	100	100
	Retail price between 5.23 and 9.97 TL	100	100	100	100	100	100
	Retail price between 9.98 and 14.97 TL	100	100	100	80	80	80
	Retail price 14.98 TL and over	100	100	100	80	80	80

Source: TITCK (Ministry of Health, Medicines and Medical Devices Agency of Turkey)

Once a producer price is established by the Ministry of Health, discount rates are applied by the Social Security Institution (SSI) for granting reimbursement status. The following table shows discount rates applied for different product groups as they have evolved over the course of the past five years.

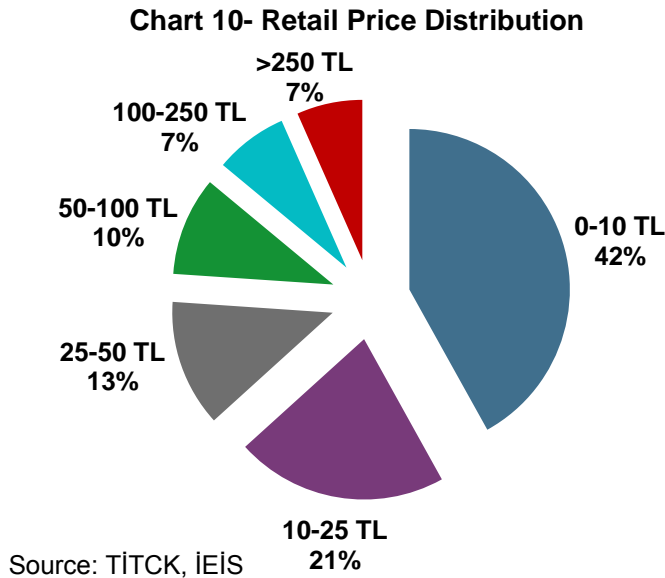
Table 6- Discount Rates

			2009	2010	2011	2012	2013	2014
Originator	Retail price 5.22 TL and below	No Generic Product	4	4	4	4	0	0
	PSF between 5.23 and 9.97 TL		24	23	32.5	41	20	20
	Retail price between 9.98 and 14.97 TL		24	23	32.5	41	41	41
	Retail price 14.98 TL and over		24	23	32.5	41	41	41
Originator with a Generic Product and the Generic Product	Retail price 5.22 TL and below		4	4	4	4	0	0
	Retail price between 5.23 and 9.97 TL		11	11	20.5	28	20	20
	Retail price between 9.98 and 14.97 TL		11	11	20.5	28	28	28
	Retail price 14.98 TL and over		11	11	20.5	28	28	28
Twenty Years	Retail price 5.22 TL and below		4	4	4	4	0	0
	Retail price between 5.23 and 9.97 TL		11	11	11	11	7	7
	Retail price between 9.98 and 14.97 TL	Local	-	-	-	28	20	20
		Reference price available	11	11	20.5	28	20	20
		No reference price	24	23	32.5	40	20	20
	Retail price 14.98 TL and over	Local	-	-	-	28	28	28
		Reference price available	11	11	20.5	28	28	28
		No reference price	24	23	32.5	40	40	40

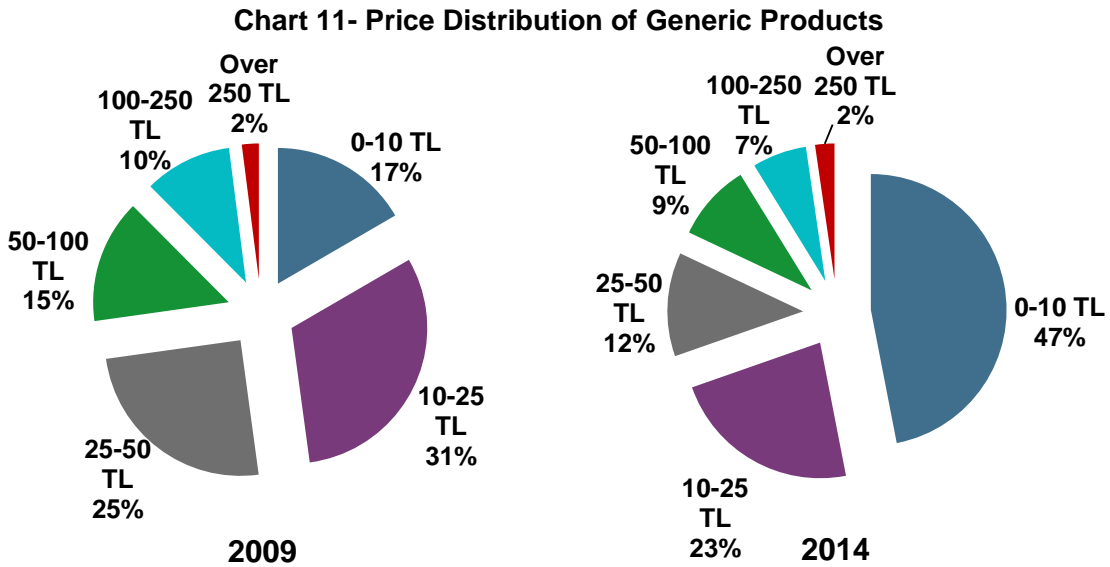
Source: SSI Communique on Healthcare Practices

e. Retail Price Ranges

Reflecting a movement towards lower priced pharmaceuticals, the market share of products eligible for reimbursement in the 0-10 TL price range increased compared against 2009, whereas the market share of products with a value of over 100 TL fell. Today, 42% of all products available domestically are priced within the 0-10 TL price range.



This movement towards lower value products is disproportionately observed amongst generic drugs with the 0-10 TL price range. While just 17% of all generics were priced within the 0-10 TL range in 2009, today, nearly half of all generics are priced within this range: a movement of nearly threefold.

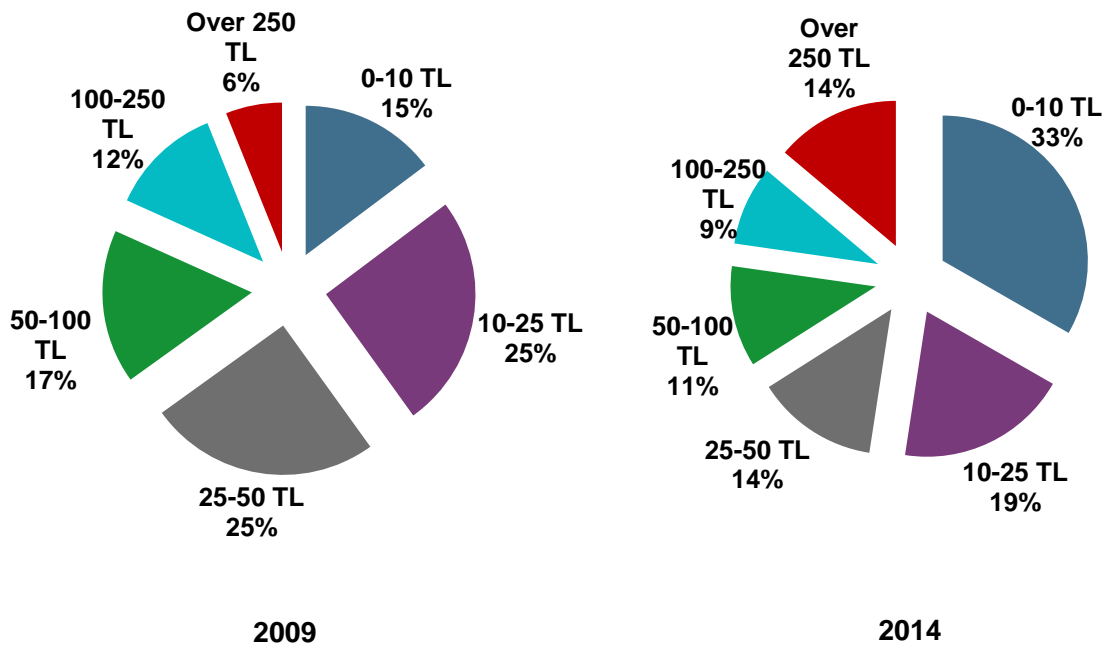


Source: TITCK, İEİS

Source: TITCK, İEİS

This trend held true for originator products, which, with a retail value closely correlated to those of generic products, saw their share of products priced in the 0-10 TL range grow by 18 percentage points (pp) since 2009. Interestingly, those originator products priced at over 250 TL grew strongly over this period, as well, reaching 14%.

Chart 12- Price Distribution of Originator Products

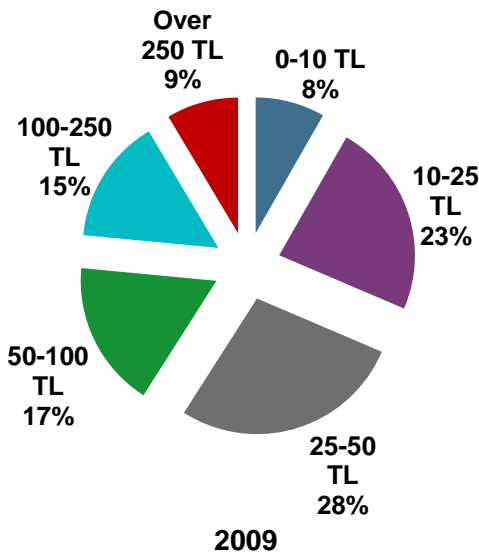


Source: TITCK, İEİS

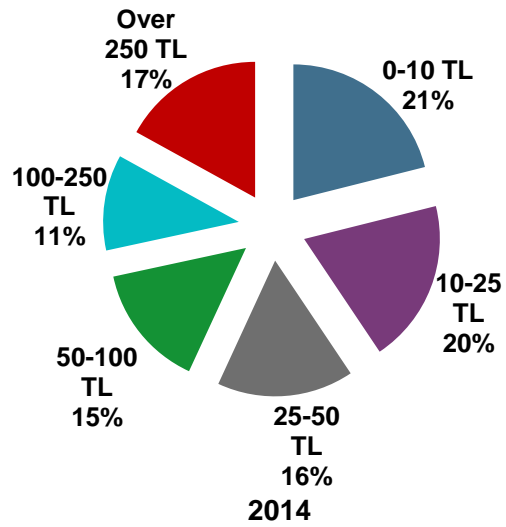
Source: TITCK, İEİS

This trend has also been observed for imported pharmaceuticals: unsurprising, given that originator products constitute a large proportion of total pharmaceutical imports. In 2014, the largest share of these products was priced in the 0-10 TL range, 21%, followed by those priced in 10-25 TL range, 20%. Compared against 2009, the greatest change over the past five years was observed in the movement of product prices in the 0-10 TL range, which saw an increase of 13 pp. Extending from the second dynamic observed in the price of originator drugs, the second largest movement over this period was seen in those products priced at over 250 TL, which grew by 8 pp from 2009 to 2014.

Chart 13- Price Distribution of Import Products



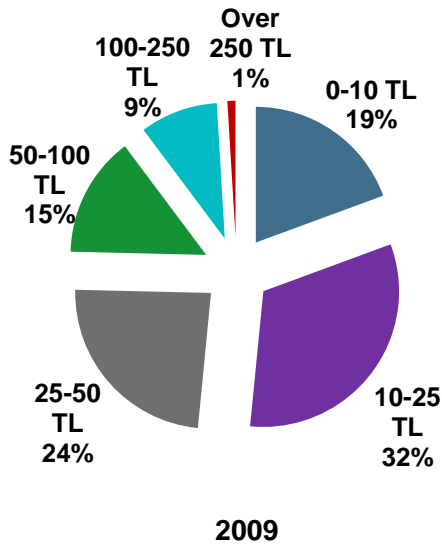
Source: TITCK, İEİS



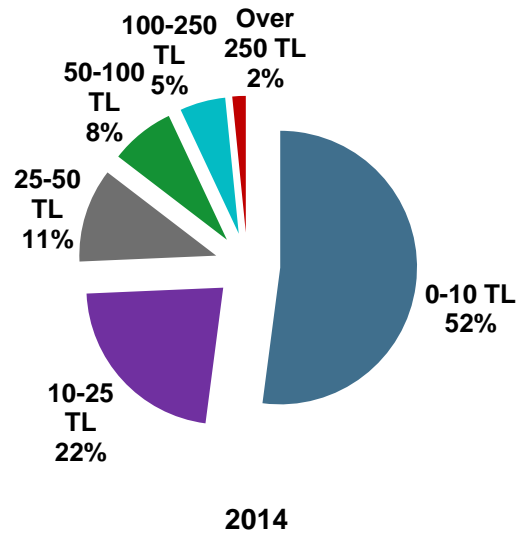
Source: TITCK, İEİS

Tied to the market for generic pharmaceuticals, the largest change observed in the market for locally manufactured products occurred in the 0-10TL price bracket. A remarkable 52% of all locally produced products were priced within this range in 2014, an increase of 33 pp from 2009.

Chart 14- Price Distribution of Local Products



Source: TITCK, İEİS



Source: TITCK, İEİS

f. Average Prices

The average price of prescription drugs fell from 9.2 TL in 2009 to 8.11 TL in 2014, a decrease of 11%. If examined by product origin and type, imported pharmaceuticals posted the largest decline in average price, falling by 23% over the last five years.

From 2013 to 2014, a 5.9% increase is observed in the overall price of prescription drugs. If analyzed by product type, the most notable increase occurred among originator products, which saw their pricing, grow by 7%. Both imported and local products saw their average prices grow by 5%.

Table 7- Average Price Distribution (TL)

	Overall Market	Prescription	Reimbursed	Import	Local	Originator	Generic
2009	8.84	9.16	8.83	22.74	4.91	12.71	5.21
2010	8.33	8.55	8.27	20.36	4.67	11.70	5.02
2011	7.75	7.90	7.59	17.84	4.48	10.58	4.81
2012	7.17	7.24	6.92	16.13	4.20	9.76	4.42
2013	7.56	7.66	7.29	16.66	4.34	10.47	4.42
2014	8.01	8.11	7.64	17.57	4.56	11.18	4.59

Source: IMS, İEİS

Table 8- Average Price Change

	Overall Market	Prescription	Reimbursed	Import	Local	Originator	Generic
13-14 Change	6.0%	5.9%	4.9%	5.4%	5.2%	6.8%	3.9%
09-14 Change	-9.4%	-11.4%	-13.4%	-22.7%	-7.1%	-12.1%	-11.8%

Source: IMS, İEİS

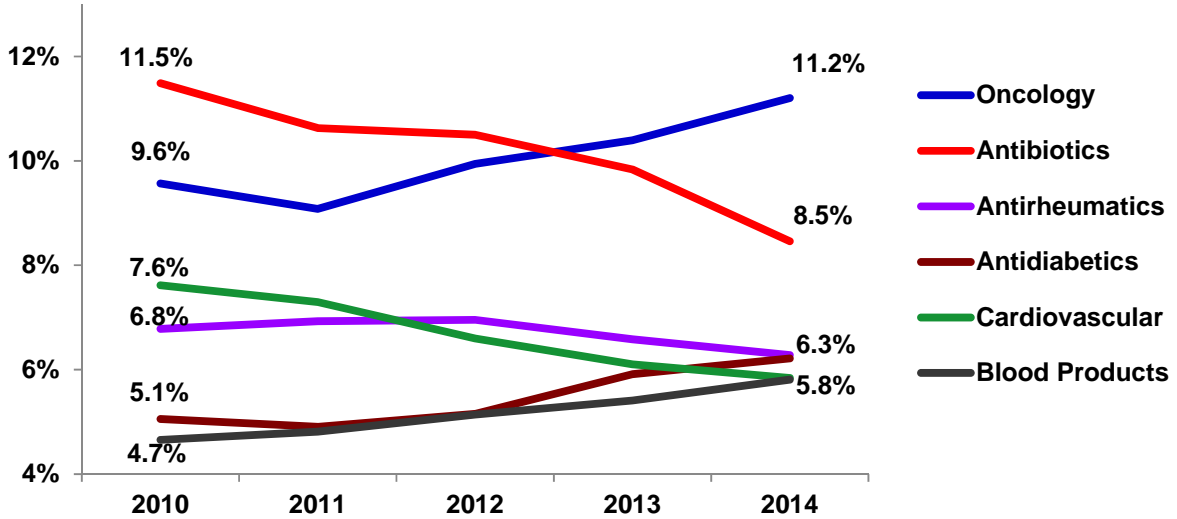
g. Therapeutic Groups

In 2014, the market share of oncology products, as measured by value, retained its position as the fastest growing segment of the Turkish pharmaceutical market as categorized by therapeutic area. Last year, oncology products accounted for 11.2% of the total pharmaceutical market. Other quickly changing therapeutic areas included antidiabetics, which reached a total market share equivalent to that of antirheumatics in 2014, standing at 6.2%.

The market share of antibiotics continued to fall from 11.5% to 8.5% in 4 years. Cardiovascular products saw their market share fall as well, from 7.6% to 5.8%

Chart 15- Therapeutic Groups (Value)

TL Market Share

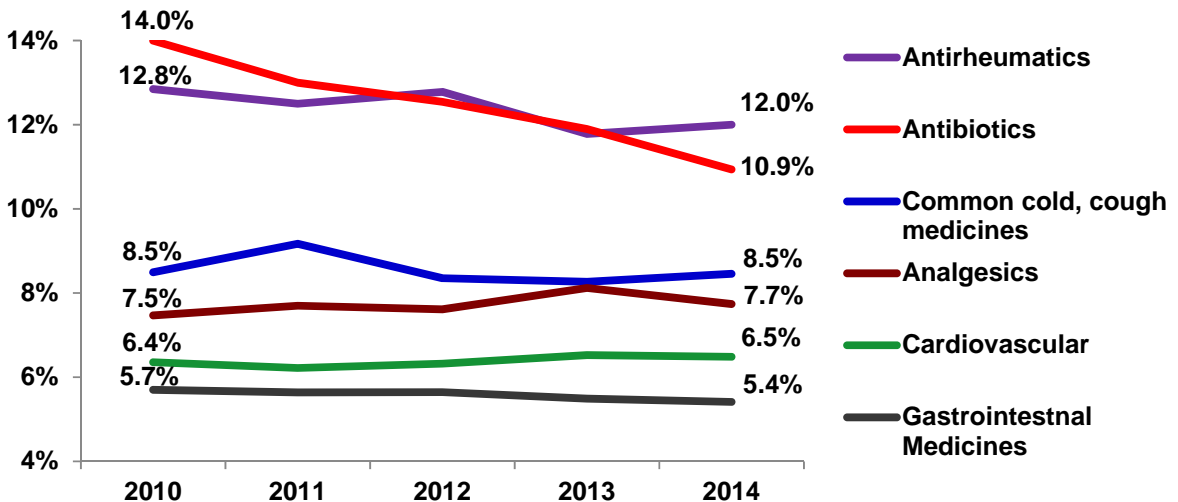


Source: IMS, IEIS

If changes in market values as measured by volume are analyzed, several of these trends are upheld. Antibiotics continued to lose its share of the market, decreasing to 10.9% of the total drug volume in 2014. Using this line of analysis, antirheumatics represented the largest proportion of total market volume in 2014, accounting for 12%. By volume, common cold and cough medicines, analgesics, cardiovascular and gastrointestinal medicines retained their positions.

Chart 16- Therapeutic Groups (Volume)

Market Share



Source: IMS, IEIS

B. Foreign Trade

Foreign trade values reflected a movement on the part of the Turkish pharmaceutical manufacturer to expand their proportion of sales derived through foreign market activity. Aggregate pharmaceutical exports, which stood at \$474 million in 2009, have since grown by 80% over the past five years, standing at \$856 million in 2014. Driven largely by double-digit growth realized in foreign market sales in 2012 and 2013, growth in exports stagnated last year, standing at 4.7%.

The effect that this held on Turkey's current account balance for pharmaceuticals was exacerbated by an increase in pharmaceutical imports in 2014. Although pharmaceutical imports did not grow significantly over the past five years, in 2014, they gained momentum, exceeding \$4.7 billion – a growth rate of 5.5% from the previous year. The impact of this was to increase Turkey's foreign trade deficit, which rose to \$3.89 billion, and to decrease the country's export-import coverage ratio, which fell from 18.2% to 18%.

Table 9- Import and Export of Pharmaceutical Products (million USD)

Year	Export	Change (%)	Import	Change (%)	Foreign Trade Deficit	Change (%)	Export / Import
2009	474	0.9%	4,427.5	-6.7%	3.95	-7.5%	10.7%
2010	612	29.1%	4,786.7	8.1%	4.17	5.6%	12.8%
2011	620.4	1.4%	5,093	6.4%	4.47	7.1%	12.2%
2012	720.1	16.1%	4,353.5	-14.5%	3.63	-18.8%	16.5%
2013	817.7	13.6%	4,498	3.3%	3.68	1.3%	18.2%
2014	856.2	4.7%	4,743.4	5.5%	3.89	5.6%	18%

Source: TUIK (Turkish Statistical Institute) (In accordance with HS4 Classification-Code:2936-2939, 2941,3001-3006)

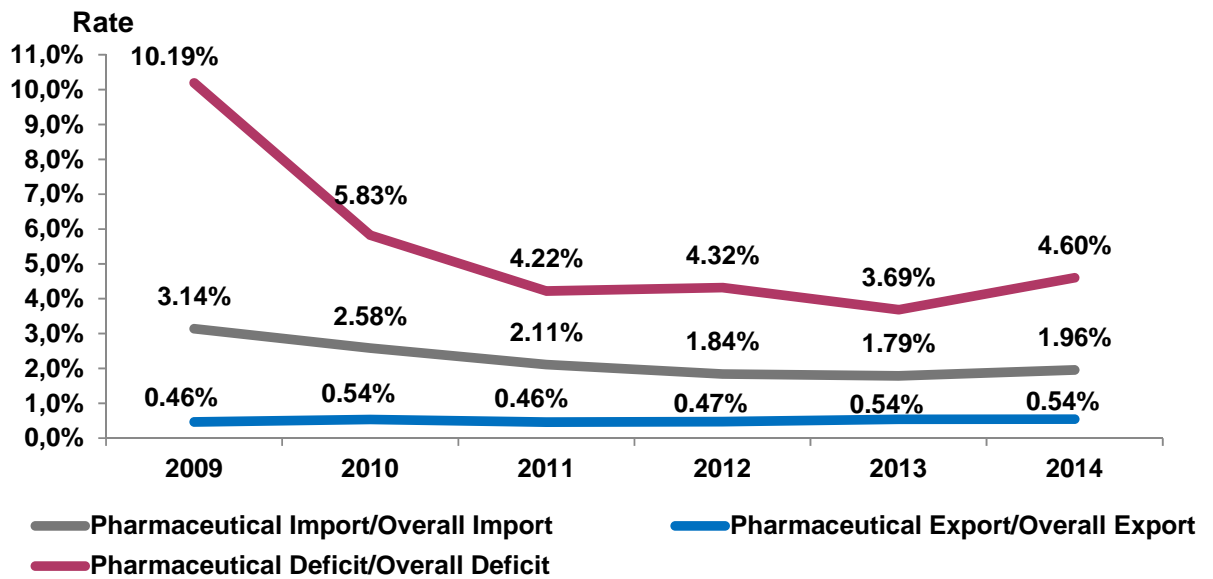
The Turkish government's system of drug pricing stood among the largest determinants of both the decline in pharmaceutical exports and increase in pharmaceutical imports observed in 2014. Running contrary to the commonly held belief that lower product prices will result in an increase in the regional competitiveness of a pharmaceutical and therefore will result in higher product exports and lower product imports, this paradox is explained by the absence of free-market forces that would normally determine product pricing and the restrictions imposed on free trade.

Specifically, this is in part attributable to the broader implications of Turkey's system of drug-pricing: Turkey's system of price-setting has established a baseline for pharmaceutical pricing within the foreign market. Foreign healthcare authorities have come to demand that the prices for pharmaceuticals in Turkey are used in establishing the price which the Turkish pharmaceutical manufacturer will receive in establishing licensing and supply agreements. One consequence of this attendant decline in profit margins has been that Turkish

pharmaceutical manufacturers cannot effectively promote their products within the foreign market. Equally, many have moved to contract manufacturing within a target market so as to command a higher price for their products. Regardless, the result of this has been a decline in potential exports.

The consequence of both the decrease in pharmaceutical exports and rise in pharmaceutical imports has been that pharmaceuticals, albeit at a much lower rate, continue to be a net contributor to Turkey's foreign trade deficit.

Chart 17- Pharmaceutical Industry within Turkish Foreign Trade



Source: TÜİK (In accordance with HS4 Classification-Code:2936-2939, 2941,3001-3006)

Today, the markets to which Turkish pharmaceutical manufacturers export are widely dispersed, spread across 170 countries. Chief among these markets is South Korea, Switzerland, Germany, Iraq, Iran, the Russian Federation, the USA and Azerbaijan, which represent, by size, Turkey's largest export markets for pharmaceuticals. In 2014, Turkey imported pharmaceuticals from 94 countries. These regions, in order of significance, included Germany, the USA, France, Switzerland, Italy, the United Kingdom, and Ireland.

Table 10- Import on Basis of Countries

	Name of the Country	2013	2014	2013-2014 (%)
1	Germany	861,844,570	885,792,983	2.8%
2	U.S.	508,661,290	601,228,376	18.2%
3	France	438,992,901	450,518,407	2.6%
4	Switzerland	433,798,726	429,004,860	-1.1%
5	Italy	401,205,402	328,205,603	-18.2%
6	England	228,613,179	299,634,407	31.1%
7	Ireland	246,214,262	280,780,582	14.0%
8	Belgium	219,869,710	167,908,254	-23.6%
9	Denmark	127,517,994	160,341,447	25.7%
10	China	134,251,500	147,260,981	9.7%

Source: TUIK (In accordance with HS4 Classification-Code:2936-2939, 2941,3001-3006)

Table 11- Export on Basis of Countries

	Name of the Country	2013	2014	2013-2014 (%)
1	South Korea	30,609,999	110,255,312	260.2%
2	Switzerland	63,346,200	59,939,304	-5.4%
3	Germany	64,191,414	56,746,527	-11.6%
4	Iraq	74,653,667	50,915,905	-31.8%
5	Iran	87,334,339	45,019,621	-48.5%
6	Russian Federation	17,895,792	32,346,831	80.8%
7	U.S.	32,810,627	31,651,642	-3.5%
8	Azerbaijan	30,400,510	30,794,163	1.3%
9	TRNC	30,013,986	29,083,154	-3.1%
10	England	18,225,855	20,445,998	12.2%

Source: TUIK (In accordance with HS4 Classification-Code:2936-2939, 2941,3001-3006)

C. Conclusion and Assessment

The five year period between 2009 and 2014 was a period marked by significant losses for Turkey's pharmaceutical industry. Although the market as measured by value realized nominal growth of 10.6%, in real terms this translated into a decline of 23.1%.

The budget cap that was established to control public expenditures on pharmaceuticals in the wake of the implementation of Turkey's Health Transformation Program was built on principals that did not allow for the program to be scalable. The result of this is observed in a series of cost reduction policies, including escalating discount rates and a frozen euro-lira convertibility ratio within the country's drug price referencing system, which have, in effect, checked the public burden of the country's medical expenses at the cost of the pharmaceutical industry.

As a consequence of this, public expenditures on pharmaceutical have directly mirrored market growth, increasing nominally by 6.1% over this five year period but declining by 26.2% in real terms.

Table 12- Public Pharmaceutical Expenditures and Prescription Data

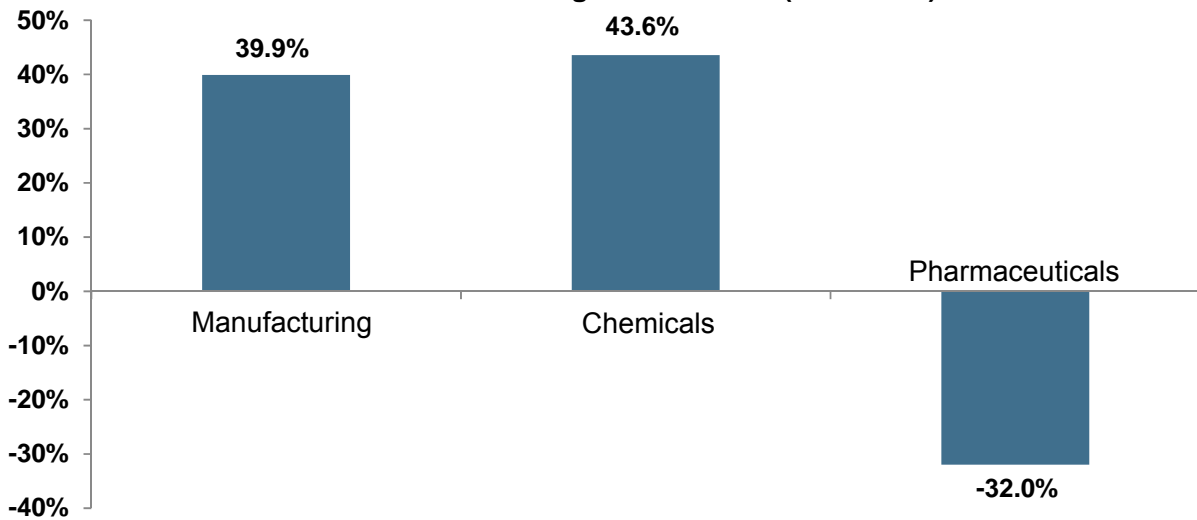
	2009	2010	2011	2012	2013	2014
Public Pharmaceutical Expenditures (mn TL)	16,068	15,347	15,868	14,484	15,728	17,049
Number of Prescriptions (000)	327,495	308,530	339,225	336,106	338,021	337,403
Cost per Prescription (TL)	49.1	49.7	46.8	43.1	46.5	50.5

Source: The Ministry of Finance, 2014 Budget Justification Report, SSI Healthcare Statistics

This, invariably, had a negative impact on the financial performance of the Turkish pharmaceutical manufacturer. According to data published by the Ministry of Science, Industry and Technology in 2014 as part of their "Entrepreneur Information System," operating profitability of the pharmaceutical industry decreased significantly from 2009 to 2013, marked by a steep decline in net sales and asset generation.

These declines have been unique to the pharmaceutical industry, standing in contrast to other manufacturing industries that are less technologically intensive. If compared against the manufacturing industry and chemical industry, this becomes obvious. While net pharmaceutical sales declined by 32% in real terms from 2009 to 2013, net sales in manufacturing and the chemical industry grew by 40% and 44% respectively.

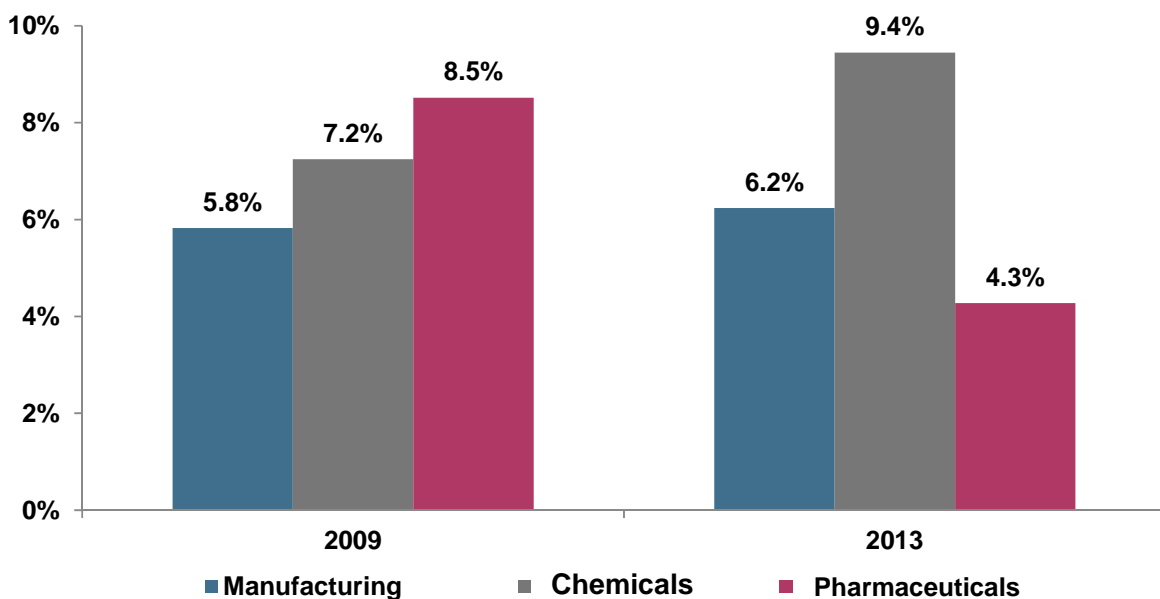
Chart 18- Real Change in Net Sales (2009-2013)



Source: Entrepreneur Information System of the Ministry of Science, Industry and Technology

These declines are also observed in operating profitability. While the operating profitability of both the manufacturing and chemical industries increased from 2009 to 2013, over this same period, it fell by half for the pharmaceutical manufacturer.

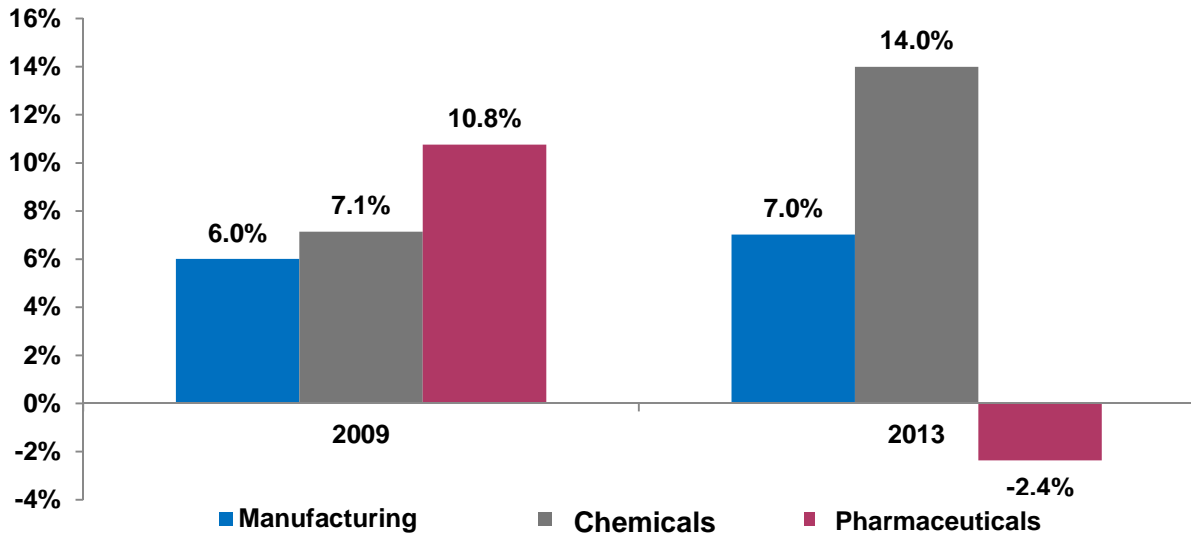
Chart 19- Operating Profitability / Net Sales (2009-2013)



Source: Entrepreneur Information System of the Ministry of Science, Industry and Technology

Yet far worse were the declines observed in net profitability. Again, while the manufacturing and chemical industries were able to realize greater levels of net profitability between 2009 and 2013, the pharmaceutical industry saw its net profitability fall from 10.8% to -2.4% as measured as a proportion of equity.

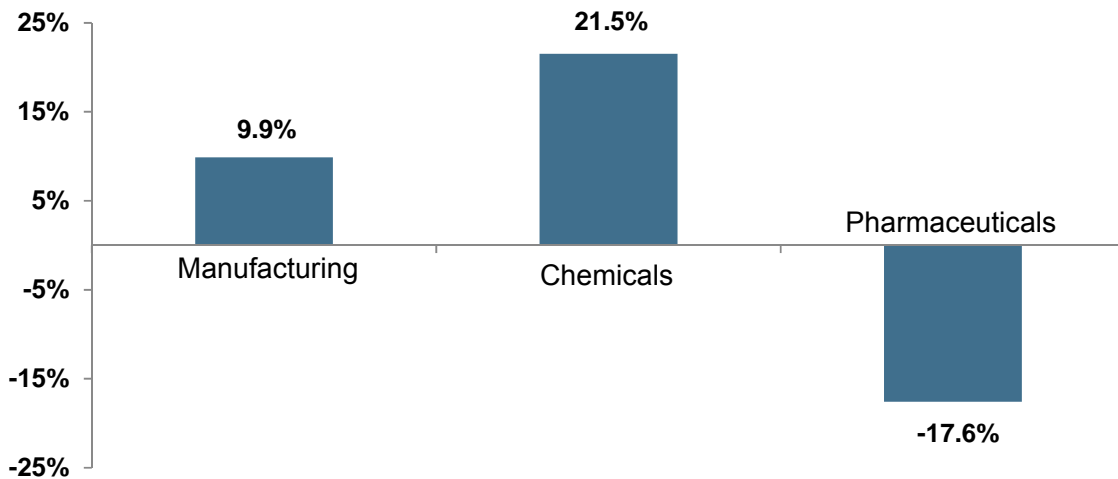
Chart 20- Net Profitability / Equity (2009-2013)



Source: Entrepreneur Information System of the Ministry of Science, Industry and Technology

As a consequence of the adversities that the Turkish pharmaceutical manufacturer has faced, the asset base, and the ability of the Turkish pharmaceutical manufacturer to generate new assets, has eroded. Setting aside the implications that this has had on the national business environment for the production of pharmaceuticals, these changes have made it harder for the industry to keep pace with technological developments in the medium term, and from allocating sufficient resources to R&D that would allow for the Turkish pharmaceutical manufacturer to expand its presence in the foreign market.

Chart 21- Real Change in Equity (2009- 2013)



Source: Entrepreneur Information System of the Ministry of Science, Industry and Technology



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