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Introduction

The strategic strength and importance of the pharmaceutical industry, which operates with the principle of improving human quality of life and enhancing health, will continue as long as humanity exists. Our industry will continue to renew itself constantly, aiming for even greater achievements, within the framework of new diseases, changing living conditions, extended life expectancy, scientific advancements, and technological progress.

The strategic importance of the pharmaceutical industry for countries has been clearly revealed through the global challenge of the COVID-19 pandemic. Despite the challenges in raw material and active ingredient supply, significantly increased costs, and difficulties in production processes, the Turkish pharmaceutical industry has proven its quality, capacity, and strength once again by continuously manufacturing drugs in both the COVID-19 protocol and other treatment groups, ensuring supply security at the highest level, and rapidly initiating the development of local vaccines.

Following the successful handling of this challenging struggle, our pharmaceutical industry has also provided support to our people and government with great dedication and effort in the face of the earthquake disasters that deeply impacted our country on February 6, 2023. In response to the earthquake disasters, the pharmaceutical industry swiftly took action and delivered millions of units of medication as donations to the earthquake-stricken region under the coordination of the Ministry of Health Turkish Medicines and Medical Devices Agency, the General Directorate of Public Hospitals, and the General Directorate of Public Health and it also organized its production capacity with all its strength to meet the demand for essential drugs. Being aware of the long-term nature of healing the wounds of earthquake disasters, our industry continues to actively work with all available resources in coordination with relevant public institutions and organizations.

As of December 2022, approximately 855 companies are operating in our industry, including 103 pharmaceutical and radiopharmaceutical production facilities operating at international standards, as well as 13 raw material production facilities. With over 44,000 employees, the pharmaceutical industry has provided more than 16,000 products to our country and exported to approximately 185 countries.

The developments we have experienced in recent years, particularly the COVID-19 pandemic and earthquake disasters, have once again confirmed the need for our industry to have a stronger R&D structure, to sustain the momentum achieved, especially through high-volume investments in the field of biotechnology, and to aim for our country to become a regional and global hub for pharmaceutical production and export through the implementation of comprehensive pharmaceutical ecosystem and sustainable and effective public policies.

In order to achieve this goal, as the Pharmaceutical Manufacturers Association of Turkiye (IEIS), we continue our activities uninterruptedly through the establishment of the Turkish Biopharmaceuticals and Vaccines Platform and the Turkish Pharmaceuticals Exporters Platform, and we are working diligently and steadfastly to implement the regulations that will pave the way for our industry.

In this context, we consider compiling market and macroeconomic data and converting them into comprehensive analyses for the pharmaceutical industry as one of our priority areas of activity, which will shed light on the industry's path.

In this framework, we have conducted an analysis of the year 2022 and the past 8 years in our Turkish Pharmaceutical Industry Report. Within the scope of the study, we have analyzed the pharmaceutical and medical health products market under the headings of the pharmaceutical market, medicinal nutrition market, and healthcare products market. We examined the Turkish pharmaceutical market in different categories, including originator/generic drugs, imported/local drugs, and biotechnological drugs, both in terms of market structure and prices.

We have also examined the market of medical purpose food, as well as the market of health products comprising traditional herbal medicinal products, and certain medical devices in pharmaceutical form, approved by the Ministry of Health, and vitamins, food supplements, and formulas approved by the Ministry of Agriculture and Forestry.

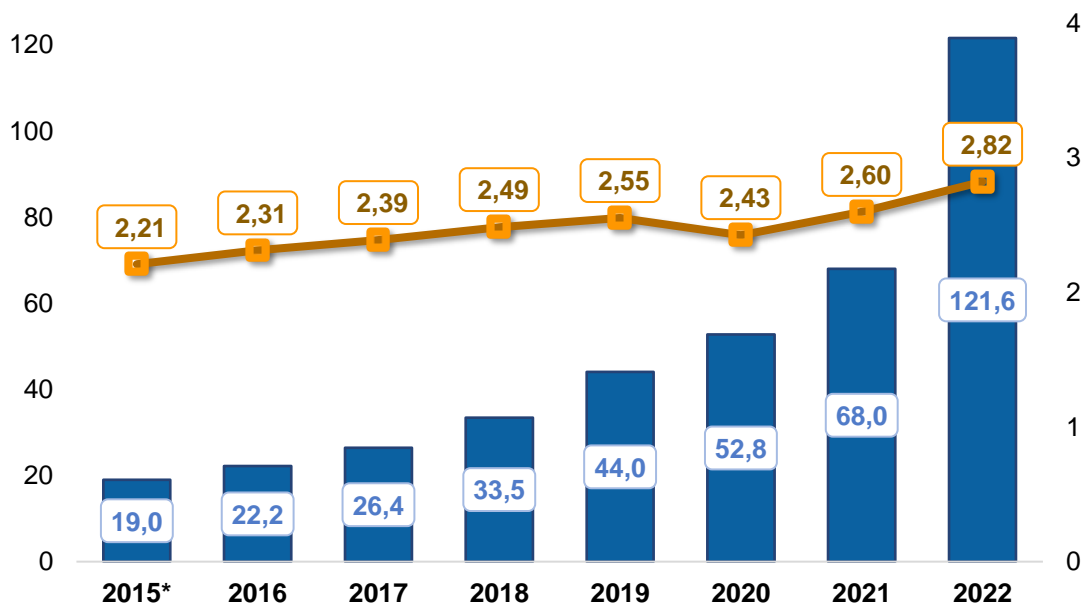
In our report, we have also included licensing, investment incentives, R&D, production, employment, price policies, financial data, and foreign trade analysis regarding the pharmaceutical industry.

We are delighted to present our 2022 Turkish Pharmaceutical Industry Report to our stakeholders in the public sector, universities, and private sector, just as we have done in previous years. We are confident that the report will be examined with great interest and that it will translate into concrete steps that will benefit the development of our industry and contribute to our country.

1. Turkish Pharmaceutical and Medicinal Products Market

In 2022, the Turkish pharmaceutical and healthcare products market in hospitals and pharmacies reached TRY 121.6 billion with a growth of 78.8% in value scale, and 2.82 billion units with a growth of 8.6% in unit scale. The healthcare market, comprising products approved by the Ministry of Health such as pharmaceuticals, special health-purposed dietary foods, and traditional herbal medicinal products, as well as products approved by the Ministry of Agriculture and Forestry such as formulas, vitamins, and food supplements, had experienced a growth of 7.1% in units and 28.8% in value in 2021, according to the latest available data.

Chart 1- Turkish Pharmaceutical and Medicinal Products Market



Source: IQVIA, IEIS

* The Consumer Health Database information entered in the IQVIA Retail database in March 2021 are not included.

■ Value (Billion TRY)

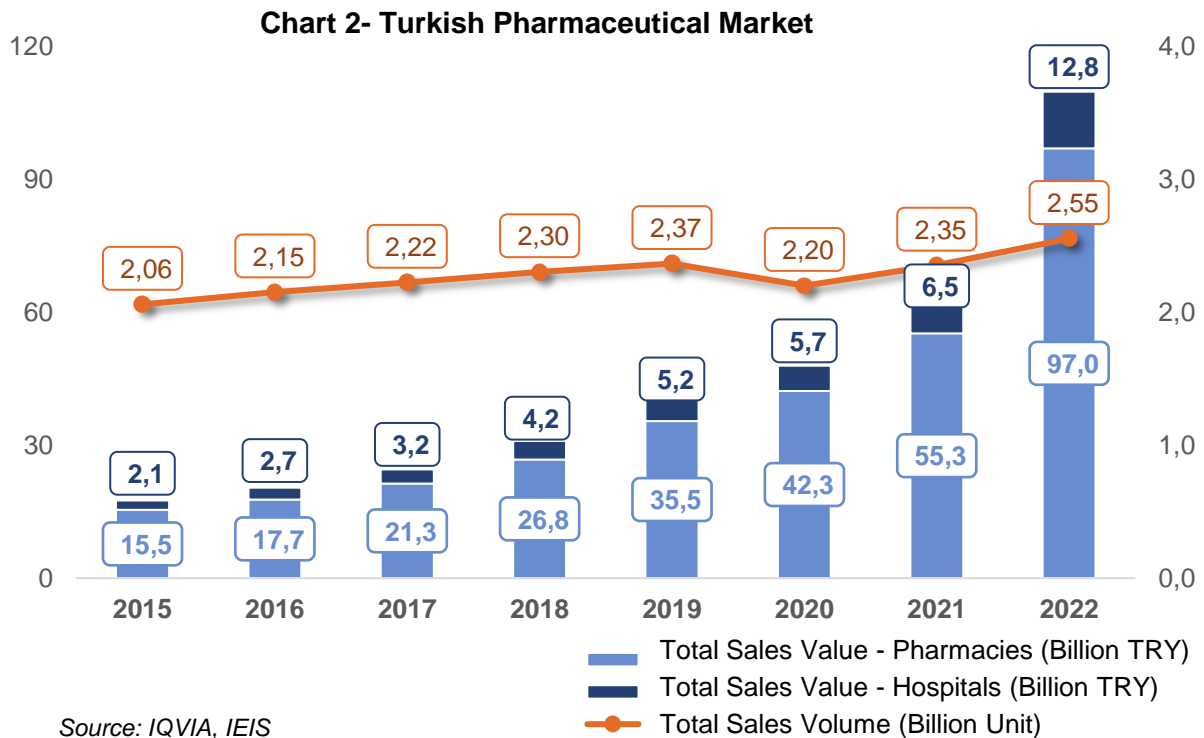
—■— Volume (Billion Unit)

When examining the 8 years covering 2015-2022, it can be observed that the pharmaceutical and healthcare products market has grown by 540%, reaching TRY 121.6 billion in 2022 from TRY 19 billion in 2015. This growth represents a compound annual growth rate (CAGR) of 30.4% while considering the producer price inflation during the same period, it indicates a real decrease of 21.1%.

In terms of volume, the market has seen an increase from 2.21 billion units in 2015 to 2.82 billion units in 2022, representing a growth of 27.7%. This growth corresponds to a CAGR of 3.6%. The main factors affecting this expansion are the increase in access to public health services and physicians in the pharmaceutical class, rising demand driven by an increasing and aging population, and the expansion of the market with the increase in the available options in products such as non-pharmaceutical natural supplements and vitamins. On the other hand, the contraction in the pharmaceutical market in terms of units due to the COVID-19 pandemic has influenced the relatively lower growth of the total unit volume during the period under review.

1.1. Turkish Pharmaceutical Market

In 2022, the Turkish pharmaceutical market in hospitals and pharmacies reached TRY 109.8 billion in value, experiencing significant growth of 77.8%. In terms of units, it reached a level of 2.55 billion unit sales, with a growth of 8.5%. The hospital channel accounted for a market share of 11.7% in terms of value and 8% in terms of units in 2022.



When examined on a periodical basis from 2015 to 2022, it is observed that the pharmaceutical market has grown by 525.6% from the level of TRY 17.6 billion in 2015 to TRY 109.8 billion in 2022. This growth represents a CAGR of 29.9% while considering the producer price inflation of 711% during the same period, it indicates a real decrease of 22.8%. Despite the updates made to the drug pricing in July and December due to rapid increases in exchange rates and costs in 2022, the challenging conditions faced by the pharmaceutical sector have intensified, and the sector has suffered significant losses, falling behind the real value of 2015.

When examined in terms of volume from 2015 to 2022, the pharmaceutical market has seen an increase from 2.06 billion units to 2.55 billion units, representing a growth of 24%. This growth corresponds to a CAGR of 3.1%. The unit-based market contraction observed in 2020 due to the COVID-19 pandemic has negatively affected the unit growth during this period.

When the market is analyzed in terms of market concentration, it is observed that out of the 255 distributor companies in the Turkish pharmaceutical market, 49 companies have a product range consisting solely of imported drugs, while 126 companies are solely involved in the production of drugs. Among the companies in the market, more than 60% of the drugs are held by 80 companies that have both imported and locally manufactured drugs, representing 71% of the market value and 72% of the market

volume. In terms of market share in value, the top 50 companies in 2022 hold 83%, while in terms of volume, their market share is at 80%.

The market value of drugs covered by reimbursement reached TRY 103.9 billion in 2022. In other words, approximately 94% of the value of drugs sold in the market consists of drugs covered by reimbursement. The difference exceeding three times in average prices between prescription drugs not covered by reimbursement and prescription prices drugs covered by reimbursement is at a remarkable level.

Table 1- Breakdown of the Pharmaceutical Market (2022)

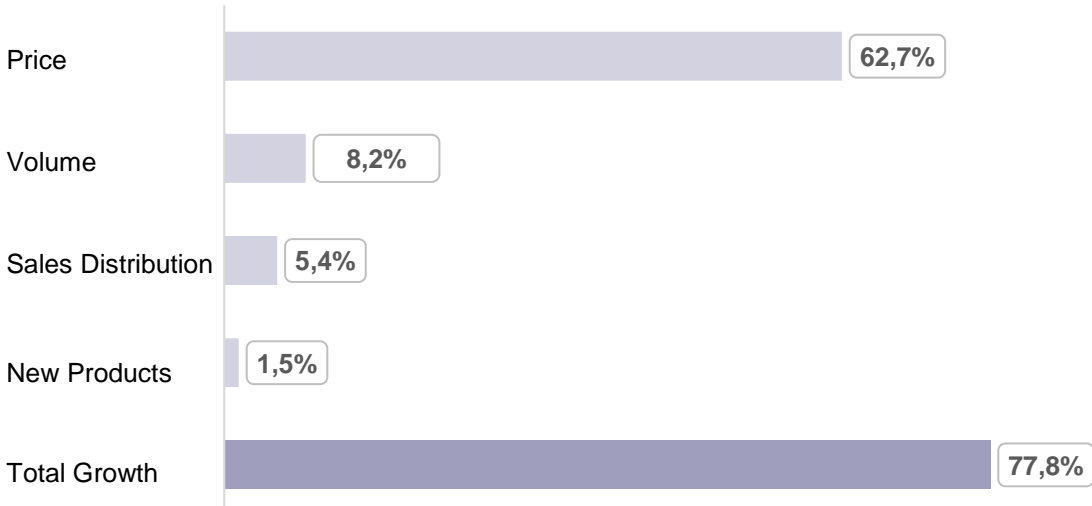
	Volume (Billion Unit)	Value (Billion TRY)	Average Price (TRY)
Turkish Pharmaceutical Market	2,55	109,80	43,0
Prescription	2,52	108,85	43,2
Reimbursed	2,48	103,51	41,7
Non-Reimbursed	0,04	5,34	134,8
Non-Prescription	0,03	0,95	29,3
Reimbursed	0,02	0,43	19,9
Non-Reimbursed	0,01	0,52	48,4

Source: IQVIA, IEIS

1.1.1. Market Growth and Drivers

When examined in terms of value scale, within the current portfolio, which consists of four main factors affecting the growth in 2022, namely volume, price increases, changes in sales distribution, and the introduction of new products, it is observed that price increases are at the forefront.

Chart 3- Resources of Growth



Source: IQVIA, IEIS

As a result of these increases, 62.7 points (TRY 38,744 million) of the observed 77.8% growth were attributed to price increases that were based on the mentioned exchange rate adjustments.

The volume increase of 8.5% experienced in 2022 at the unit level contributed 8.2 points (TRY 5,101 million) to the overall growth in value.

Changes in the sales distribution of existing products constitute the third largest contributor to the growth in the market. The shift in sales volume from low-priced products to high-priced products has contributed 5.4 points (TRY 3,315 million) to the overall growth.

In 2022, a total of 259 new drugs entered the market, with 247 of them being conventional drugs and 12 being biotechnological drugs and they contributed 1.5 points (TRY 905 million) to the overall growth.

When the newly introduced drugs are examined in terms of quantity and ATC1 classification (Anatomical Therapeutic Chemical Classification System), the top-ranked therapeutic groups with the largest share consist of 37 drugs each in the categories of gastrointestinal drugs (%14) and systemic anti-infective drugs (%14). Furthermore, the nervous system category (%13) with 33 drugs, antineoplastic and immunomodulating agents category (%12) with 30 drugs, and the blood and blood-forming organs category (%10) with 25 drugs form the top five therapeutic groups, accounting for 63% of the newly introduced drugs.

In 2022, a total of 51 originator drugs entered the market, with 43 of them being conventional drugs and 8 being biotechnological drugs. Out of these 51 products, 47 are imported, and 9 of them have generic equivalents.

The remaining 208 generic drugs consist of 204 conventional drugs and 4 biosimilar drugs. Out of these, 11 are classified as imported products. Therefore, generic manufactured products have the largest share, accounting for 76% in terms of quantity, among the newly introduced drugs.

Table 2- Unit Distribution of the New Products in the Market (2022)

Drug	259
Reference	51
▪ Generic exists	9
Import	6
▪ Generic non-existing	42
Import	41
Generic	208
▪ Import	11
▪ Local	197

1.1.2. Market Structure

A. Originator - Generic Products

The originator drug market experienced a growth of 70.3% in 2022, reaching TRY 71.4 billion from TRY 41.9 billion. In terms of units, the growth in the originator drug market was 4.1%, with a total of 0.99 billion units.

On the other hand, the generic drug market grew by 93.9% in 2022, reaching TRY 38.4 billion from TRY 19.8 billion. In terms of units, generic drugs experienced a growth of 11.5%, reaching a volume of 1.56 billion units.

Between 2015 and 2022, the total growth in the originator drug market in terms of value was 486.6%. This growth represents a CAGR of 28.8%, but when adjusted for inflation, it indicates a contraction of 27.6%. In terms of units, the growth rate in the reference drug market during the same period was 6.2%.

Generic drugs have shown a remarkable growth of 613.7% during the period between 2015 and 2022, outperforming the originator drugs. The CAGR for this growth is 32.4%. However, when adjusted for inflation, there is a real contraction of 10.2%. In terms of units, there has been a growth rate of 34.5% for generic drugs during the period from 2015 to 2022.

Chart 4- Generic – Originator Drugs (Value - Billion TRY)

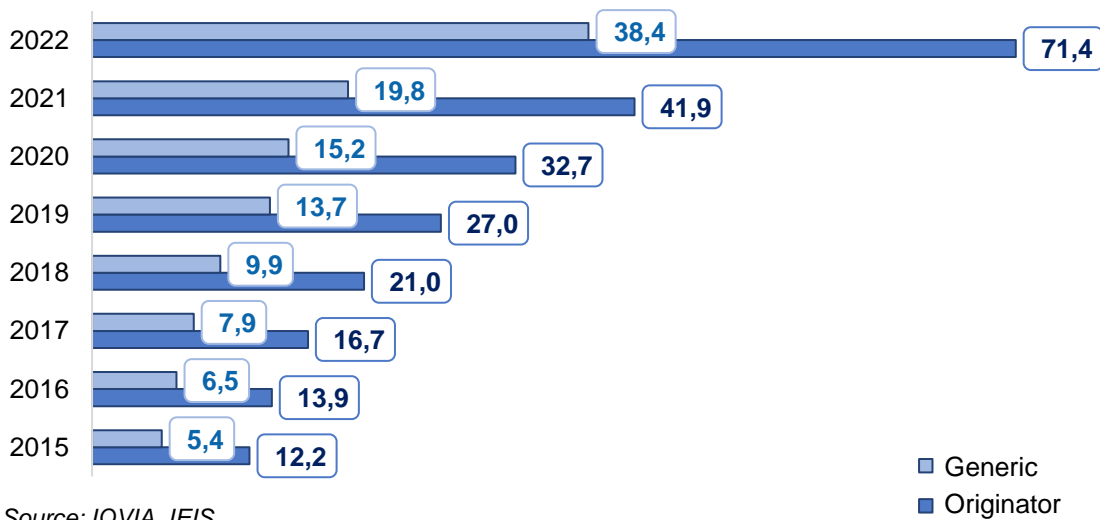
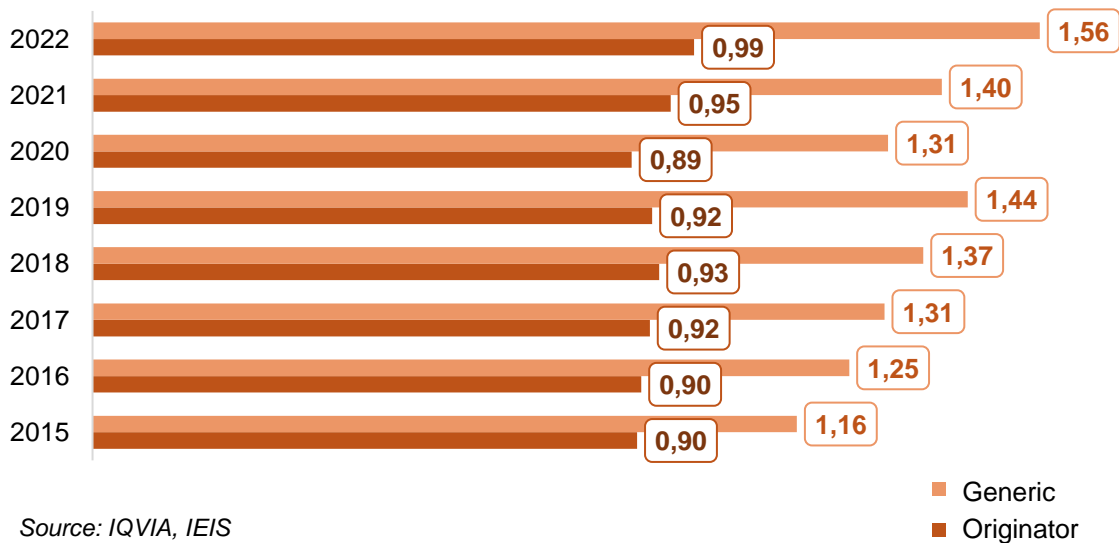
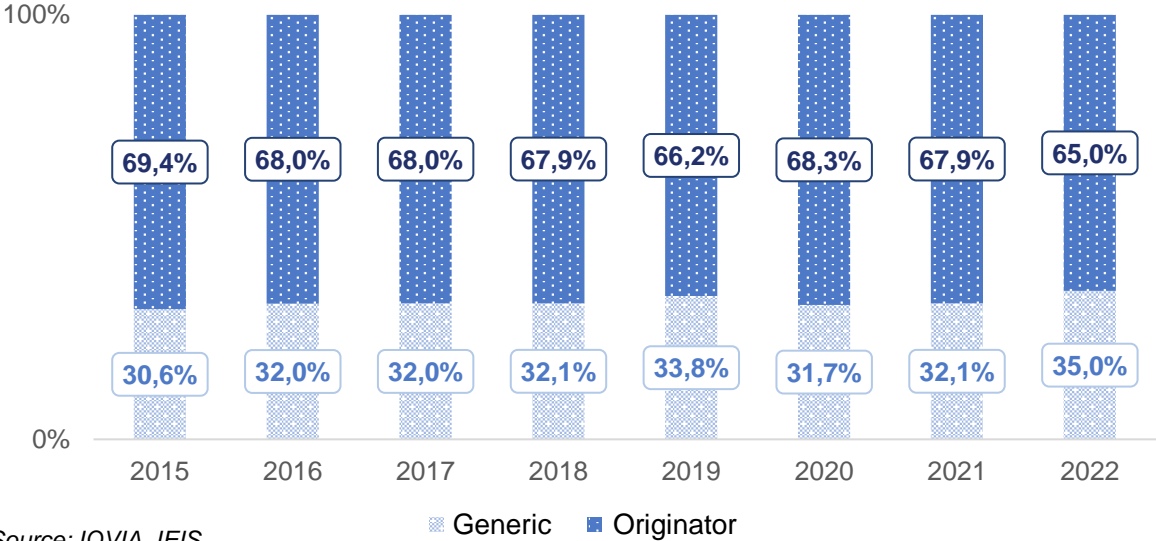


Chart 5- Generic – Originator Drugs (Volume - Billion Unit)



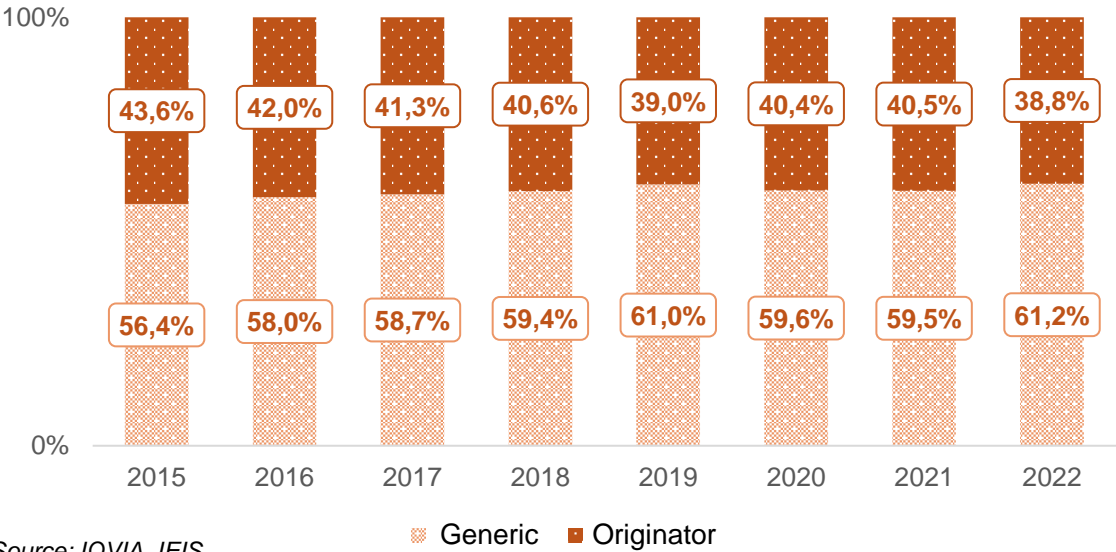
Generic drugs have increased their market share from 30.6% in value and 56.4% in units in 2015 to 35% in value and 61.2% in units in 2022.

Chart 6- Generic – Originator Drugs Market Share (Value)



Source: IQVIA, IEIS

Chart 7- Generic – Originator Drugs Market Share (Volume)



Source: IQVIA, IEIS

When looking at the distinction between imported and locally manufactured originator-generic products, it can be observed that in 2022, imported products accounted for 67.7% of the value scale of originator products, while imported products constituted 3.8% of the value scale of generic products.

Table 3- Generic – Originator Products Breakdown on Value

Value								
Generic	2015	2016	2017	2018	2019	2020	2021	2022
Local (Billion TRY)	5,04	6,17	7,47	9,49	13,27	14,60	18,97	36,92
Import (Billion TRY)	0,34	0,35	0,39	0,43	0,48	0,59	0,83	1,47
<i>Generic Local Rate</i>	93,7%	94,6%	95,0%	95,7%	96,5%	96,1%	95,8%	96,2%
<i>Generic Import Rate</i>	6,3%	5,4%	5,0%	4,3%	3,5%	3,9%	4,2%	3,8%
Originator	2015	2016	2017	2018	2019	2020	2021	2022
Local (Billion TRY)	2,44	2,90	3,75	5,42	7,93	9,71	13,39	23,09
Import (Billion TRY)	9,74	11,00	12,94	15,60	19,05	23,03	28,55	48,32
<i>Originator Local Rate</i>	20,0%	20,9%	22,5%	25,8%	29,4%	29,7%	31,9%	32,3%
<i>Originator Import Rate</i>	80,0%	79,1%	77,5%	74,2%	70,6%	70,3%	68,1%	67,7%

Source: IQVIA, IEIS

In terms of units, the proportion of imported originator products decreased to 22.5%, while locally manufactured drugs accounted for almost all of the generic products. The shrinking market share of imported generic products is believed to be influenced by overseas Good Manufacturing Practice (GMP) inspections.

Table 4- Generic – Originator Products Breakdown on Volume

Volume								
Generic	2015	2016	2017	2018	2019	2020	2021	2022
Local (Billion Unit)	1,12	1,21	1,27	1,34	1,42	1,29	1,38	1,54
Import (Billion Unit)	0,04	0,04	0,04	0,03	0,02	0,02	0,02	0,02
<i>Generic Local Rate</i>	96,6%	97,0%	97,2%	97,8%	98,5%	98,5%	98,4%	98,6%
<i>Generic Import Rate</i>	3,4%	3,0%	2,8%	2,2%	1,5%	1,5%	1,6%	1,4%
Originator	2015	2016	2017	2018	2019	2020	2021	2022
Local (Billion Unit)	0,51	0,51	0,52	0,59	0,65	0,64	0,71	0,77
Import (Billion Unit)	0,39	0,40	0,39	0,35	0,27	0,25	0,25	0,22
<i>Originator Local Rate</i>	56,6%	56,1%	57,0%	62,7%	70,7%	72,4%	74,2%	77,5%
<i>Originator Import Rate</i>	43,4%	43,9%	43,0%	37,3%	29,3%	27,6%	25,8%	22,5%

Source: IQVIA, IEIS

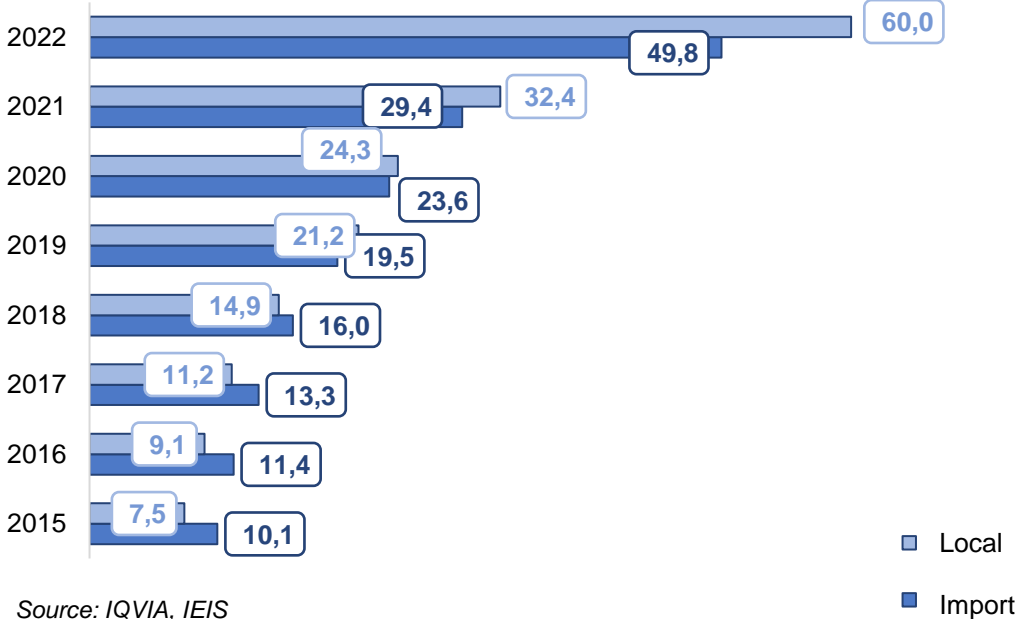
B. Imported – Local Products

In 2022, imported drugs reached TRY 60 billion with a growth rate of 69.5%. From 2015 to 2022, imported products showed a significant increase of 394.2% in value. This growth represents a CAGR of 25.6%, but when adjusted for inflation, it indicates a decline of 39%.

In 2022, local pharmaceuticals reached TRY 49.8 billion with a growth rate of 85.4%, surpassing the average growth rate. From 2015 to 2022, local pharmaceuticals

experienced a significant increase of 702.6% in value. This growth represents a CAGR of 34.7%, but when considering local producer prices, it indicates a real decline of 1%.

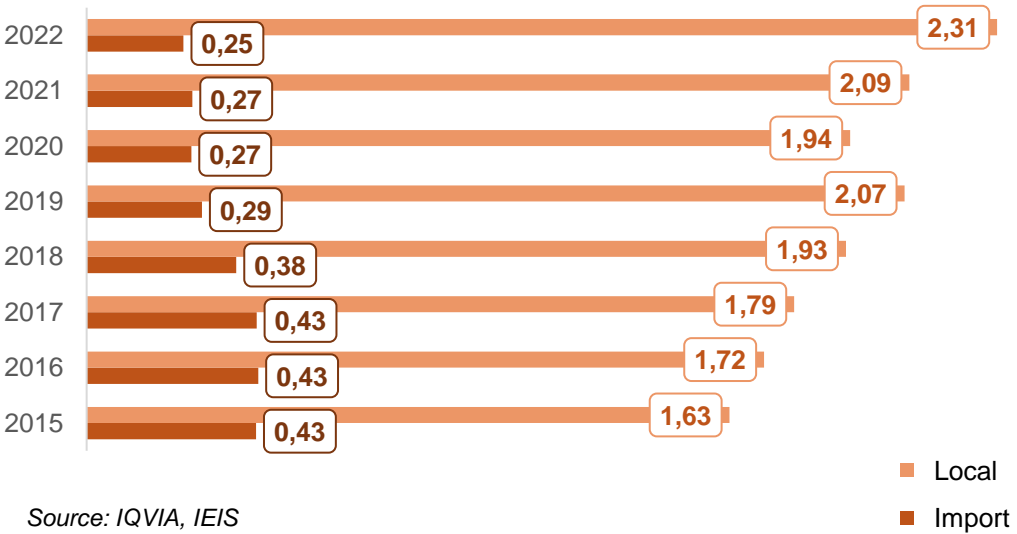
Chart 8- Local – Import Drugs (Value - Billion TRY)



When examined in terms of volume in 2022, imported pharmaceuticals showed a decline of 8.3% with sales of 0.25 billion units. From 2015 to 2022, imported pharmaceuticals experienced a decrease of 42.8%.

In locally manufactured pharmaceuticals, there was a growth of 10.7%, resulting in sales of 2.31 billion units. From 2015 to 2022, local pharmaceuticals experienced a growth of 41.6%.

Chart 9- Local – Import Drugs (Volume - Billion Unit)



With the localization initiative launched in 2016, local pharmaceuticals rapidly increased their market share from 42.6% in value in 2015 to over 50% for the first time in 2019. Although the localization process was halted before it was fully completed, it slowed down the rate of increase, but by 2022, the share of local pharmaceuticals reached 54.7%. In terms of units, local pharmaceuticals increased from 79.2% in 2015 to 90.4% in 2022.

Chart 10- Local – Import Drugs Market Share (Value)

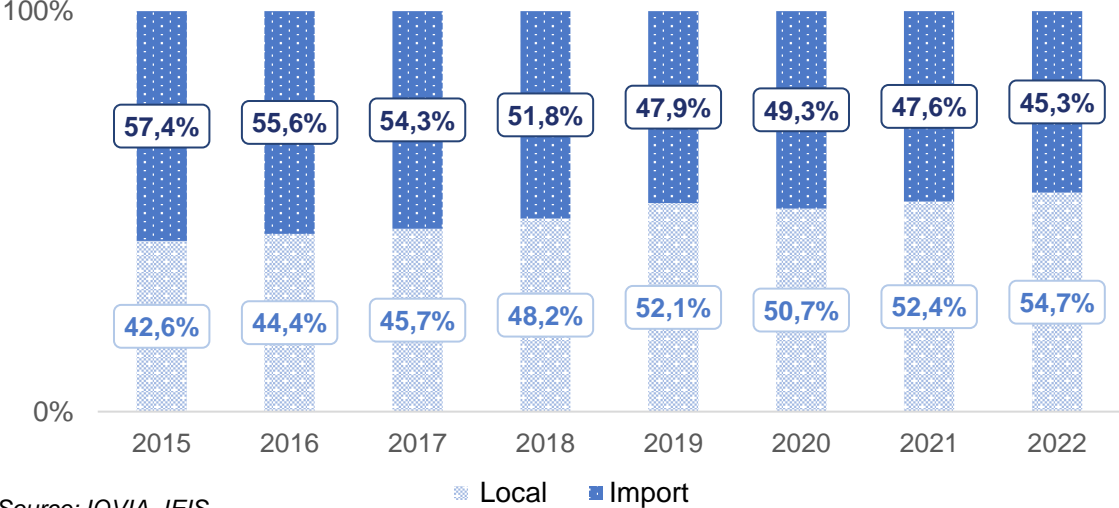
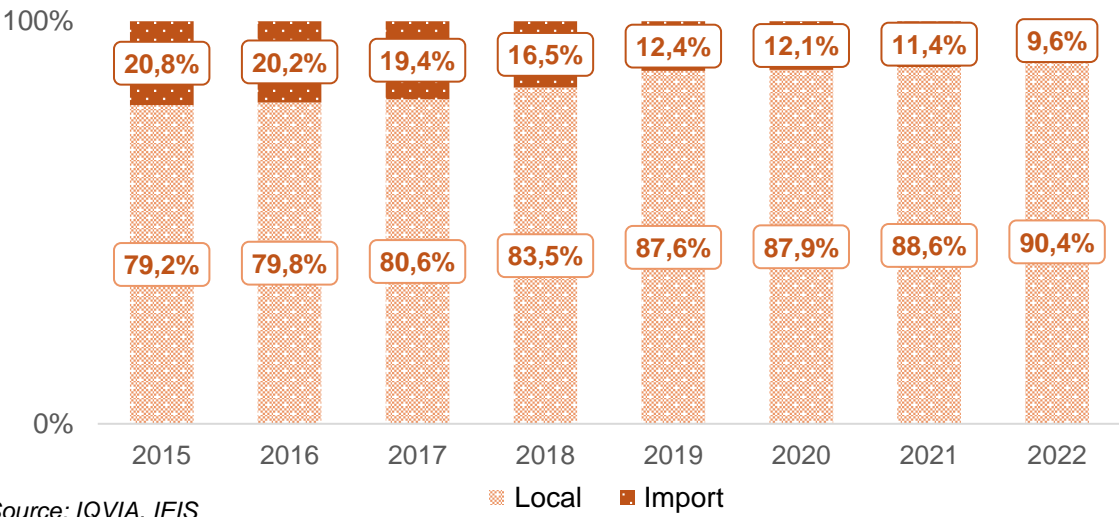


Chart 11- Local – Import Drugs Market Share (Volume)



When analyzed in terms of value in 2022, originator products accounted for 97% of imported pharmaceuticals, while for locally manufactured pharmaceuticals, this share was at 38.5%. As for generic drugs, their share within imported pharmaceuticals was 3%, while within locally manufactured pharmaceuticals, it accounted for 61.5%.

Table 5- Local – Import Products Breakdown on Value

Value								
Local	2015	2016	2017	2018	2019	2020	2021	2022
Generic (Billion TRY)	5,04	6,17	7,47	9,49	13,27	14,60	18,97	36,92
Originator (Billion TRY)	2,44	2,90	3,75	5,42	7,93	9,71	13,39	23,09
<i>Local Generic Rate</i>	67,4%	68,0%	66,6%	63,7%	62,6%	60,1%	58,6%	61,5%
<i>Local Originator Rate</i>	32,6%	32,0%	33,4%	36,3%	37,4%	39,9%	41,4%	38,5%
Import	2015	2016	2017	2018	2019	2020	2021	2022
Generic (Billion TRY)	0,34	0,35	0,39	0,43	0,48	0,59	0,83	1,47
Originator (Billion TRY)	9,74	11,00	12,94	15,60	19,05	23,03	28,55	48,32
<i>Import Generic Rate</i>	3,4%	3,1%	2,9%	2,7%	2,4%	2,5%	2,8%	3,0%
<i>Import Originator Rate</i>	96,6%	96,9%	97,1%	97,3%	97,6%	97,5%	97,2%	97,0%

Source: IQVIA, IEIS

In terms of unit volume, originator products accounted for 90.8% of imported pharmaceuticals, while their share within locally manufactured pharmaceuticals was 33.3%. In 2022, 66.7% of the pharmaceuticals produced in our country were generic drugs, whereas the share of generic drugs within imported pharmaceuticals was 9.2%.

Table 6- Local – Import Products Breakdown on Volume

Volume								
Local	2015	2016	2017	2018	2019	2020	2021	2022
Generic (Billion Unit)	1,12	1,21	1,27	1,34	1,42	1,29	1,38	1,54
Originator (Billion Unit)	0,51	0,51	0,52	0,59	0,65	0,64	0,71	0,77
<i>Local Generic Rate</i>	68,8%	70,5%	70,8%	69,6%	68,5%	66,7%	66,1%	66,7%
<i>Local Originator Rate</i>	31,2%	29,5%	29,2%	30,4%	31,5%	33,3%	33,9%	33,3%
Import	2015	2016	2017	2018	2019	2020	2021	2022
Generic (Billion Unit)	0,04	0,04	0,04	0,03	0,02	0,02	0,02	0,02
Originator (Billion Unit)	0,39	0,40	0,39	0,35	0,27	0,25	0,25	0,22
<i>Import Generic Rate</i>	9,2%	8,6%	8,4%	8,1%	7,5%	7,5%	8,3%	9,2%
<i>Import Originator Rate</i>	90,8%	91,4%	91,6%	91,9%	92,5%	92,5%	91,7%	90,8%

Source: IQVIA, IEIS

C. Biotechnological Products

Biotechnological drugs, in the simplest definition, are medications produced using living systems and organisms. The production of biotechnological drugs in the pharmaceutical industry began with the discovery of penicillin by Alexander Fleming in 1928 and the use of them in medicine started in the early 1980s with the production of human insulin using recombinant DNA technology for the treatment of diabetes.

Due to the fact that the raw material for biotechnological products is not chemically derived but rather living organisms, the development and production of these products require significant innovation, technological expertise, and investment.

Biotechnological drugs are shaping the present and future of the global pharmaceutical industry. Many diseases that conventional drugs cannot effectively treat can now be addressed through biotechnological interventions. As a result, the market share of these products is increasing both globally and in our country. The market share of biotechnological drugs in the global pharmaceutical industry has already surpassed 30%, and it is expected to continue growing in the coming years.

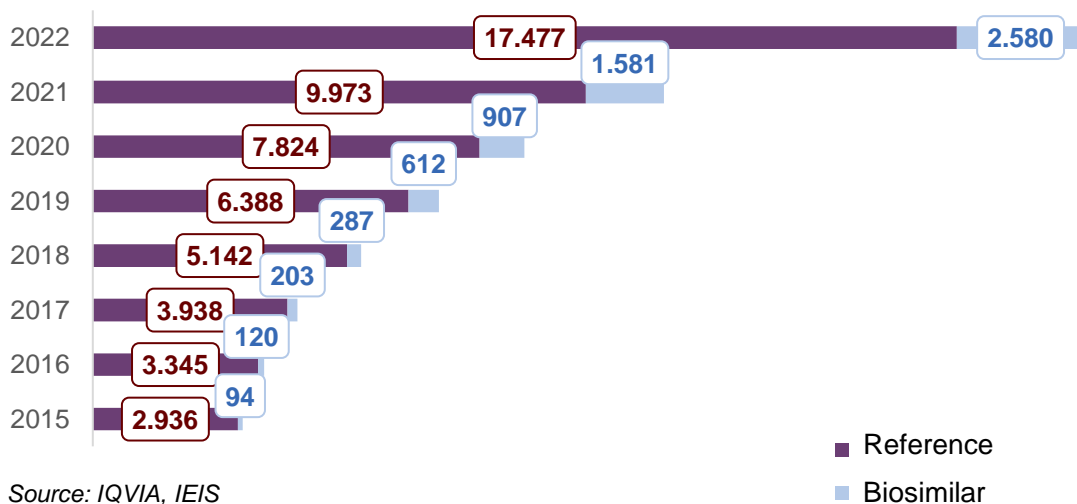
A similar situation is observed in our country as well. When biotechnological drugs are examined individually, they held approximately an 18.3% share in the pharmaceutical market in Türkiye in 2022, with a value of TRY 20.1 billion.

As of the end of December 2022, there are 244 forms of reference biotechnological drugs under 129 licensed brands and 110 forms of biosimilar drugs under 35 brands in Türkiye. The biotechnological drugs market consists of a total of 354 forms of drugs under 164 brands. The production of all 32 drugs comprising 8 brands of biosimilars is carried out in our country.

The development and production of these products in our country, of which we are dependent on imports, will not only facilitate patients' access to these drugs but also contribute significantly to the country's economy by reducing the trade deficit.

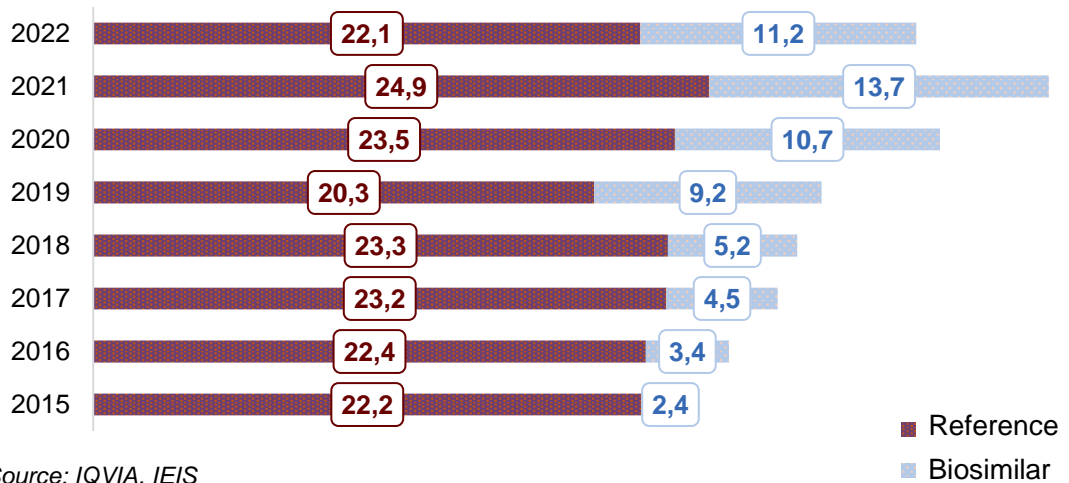
When we examine the biotechnology market in 2022, we can see that reference drugs grew by 75.2% and reached a level of TRY 17.48 billion. The biosimilar drug market, on the other hand, showed a growth of 63.2% in 2022, reaching TRY 2.58 billion.

Chart 12- Biotechnological Drugs (Value - Million TRY)



When examined in terms of units, biotechnological drugs decreased by 13.9% in 2022, reaching a volume of 33.3 million units. The unit sales of reference biotechnological drugs decreased by 11.2% compared to the previous year, while the sales of biosimilar drugs decreased by 18.8%. In 2022, a total of 11.2 million units of biosimilar drugs were sold.

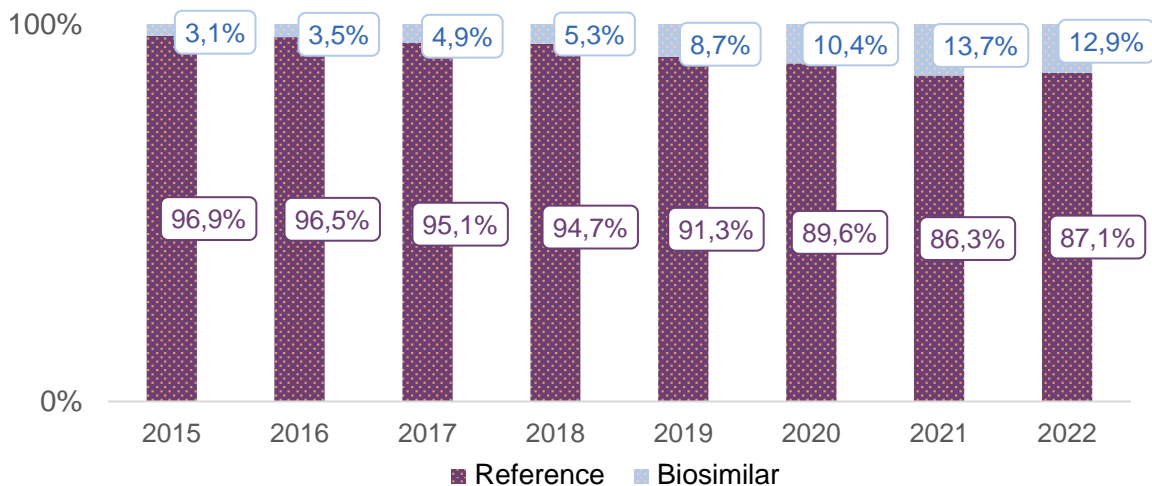
Chart 13- Biotechnological Drugs (Volume - Million Unit)



In Türkiye, biosimilar products including abciximab, adalimumab, bevacizumab, enoxaparin sodium, epoetin alfa, epoetin zeta, etanercept, filgrastim, infliximab, insulin glargine, rituximab, somatropin, and trastuzumab have been licensed. Among these, enoxaparin sodium, epoetin alfa, filgrastim, infliximab, insulin glargine, and trastuzumab are produced in Türkiye.

In 2015, the share of biosimilar drugs within the biotechnological drugs market was 3.1% in terms of value. However, in 2022, this share increased more than fourfold, reaching 12.9%.

Chart 14- Reference-Biosimilar Drugs Market Share (Value)



In terms of units, the share of biosimilar drugs was 9.6% in 2015, and it increased to 33.5% in 2021.

Chart 15- Reference-Biosimilar Drugs Market Share (Volume)

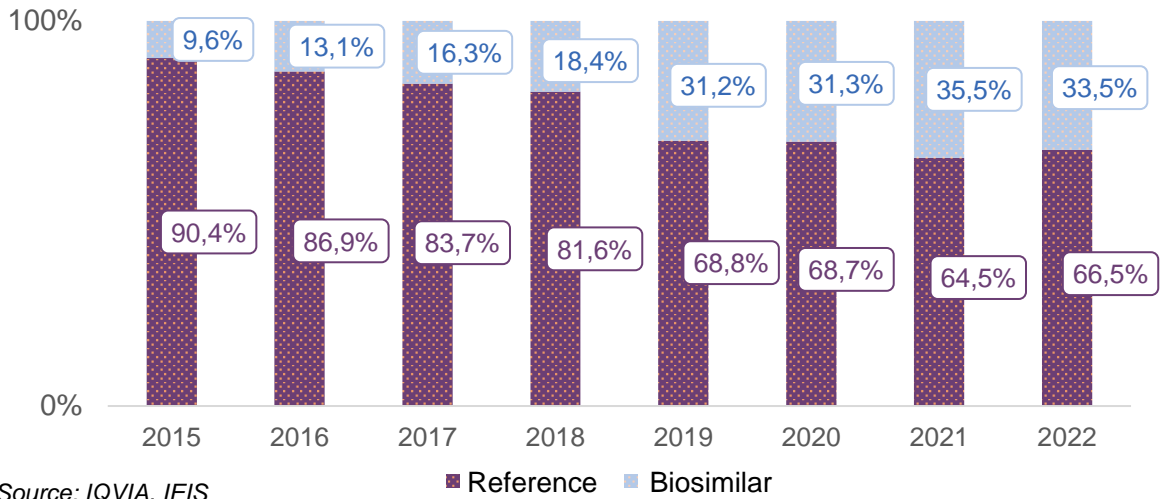
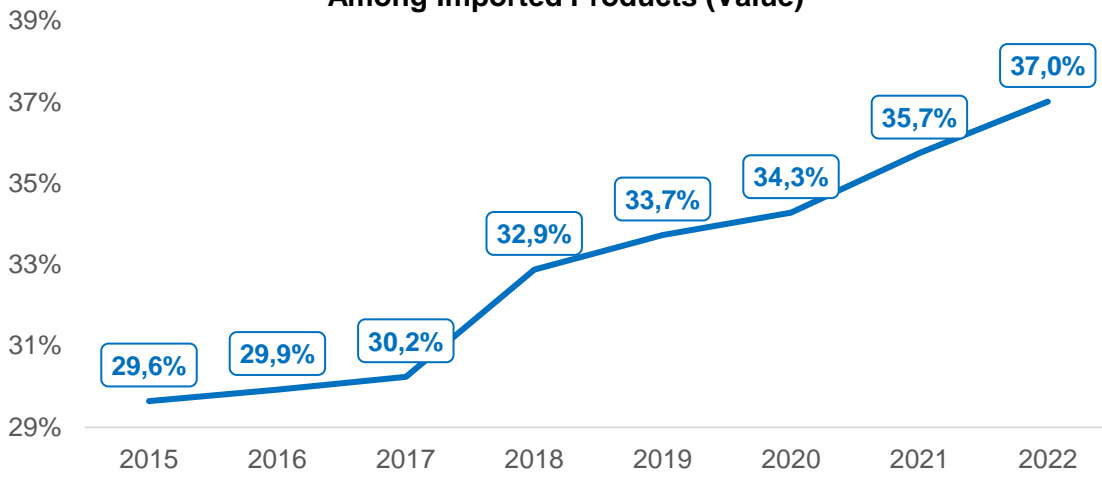
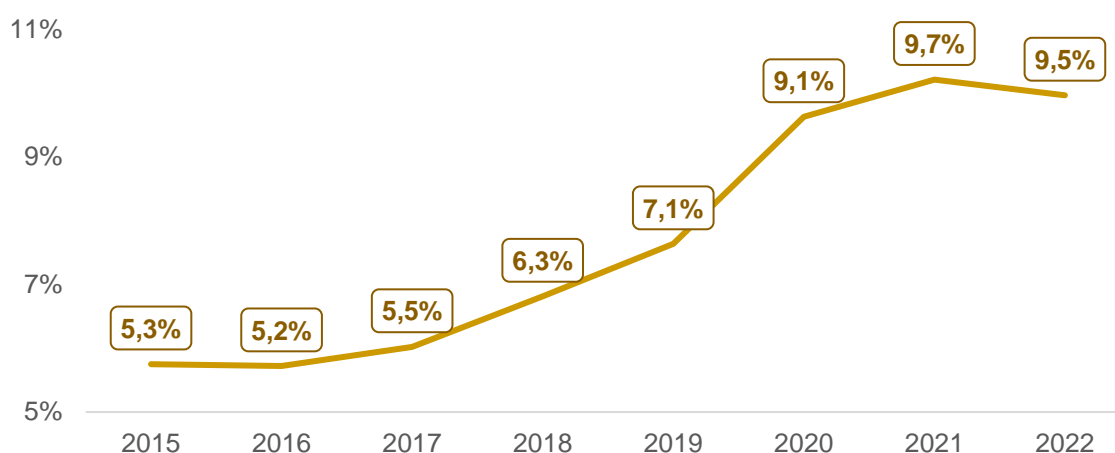


Chart 16- The Share of Imported Biopharmaceuticals Among Imported Products (Value)



Biotechnological drugs continue to increase their share in the Turkish pharmaceutical market every year. In 2015, the share of imported products was 29.6% in value and 5.3% in units, while in 2022, it reached 37% in value and 9.5% in units.

Chart 17- The Share of Imported Biopharmaceuticals Among Imported Products (Volume)



Source: IQVIA, IEIS

It can be observed that blood and blood-related products have a significant share among biosimilars. In the reference biotechnology product market, antineoplastics and immunomodulatory agents, as well as gastrointestinal and metabolic drugs, are the top two categories in terms of value.

Table 7- Biotechnological Products

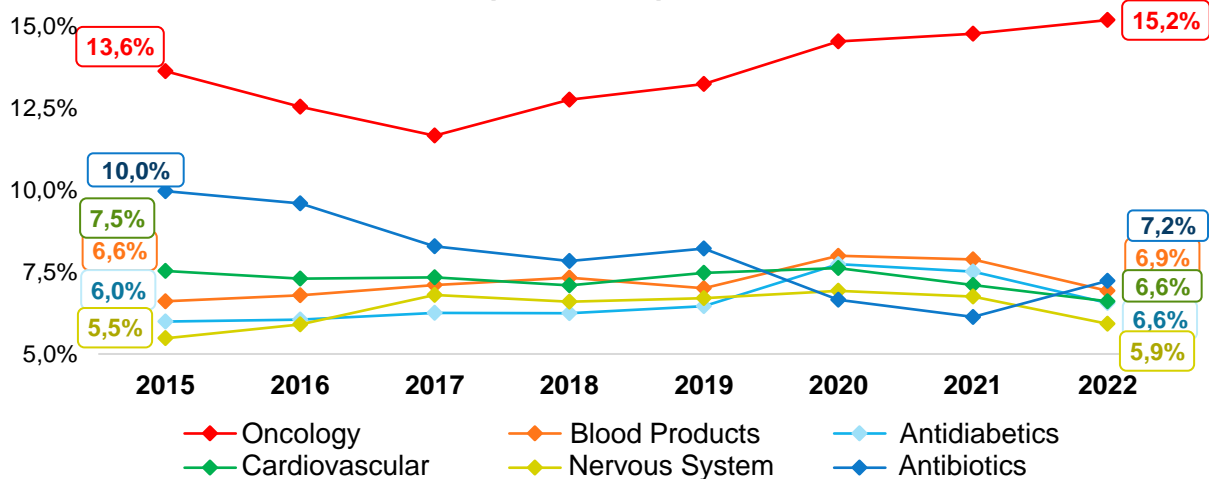
	Unit	Value
Biosimilar	100%	100%
Blood and hematopoietic organs	86,1%	49,1%
Antineoplastics and immunomodulatory agents	11,3%	46,7%
Systematic Hormonal Preparations (Excluding Sex Hormones and Insulins)	1,3%	3,3%
Digestive system and metabolism products	1,3%	0,9%
Reference	100%	100%
Antineoplastics and immunomodulatory agents	10,1%	46,1%
Digestive system and metabolism products	70,2%	23,2%
Blood and hematopoietic organs	2,9%	7,0%
Nervous System	0,6%	5,0%
Respiratory System	2,4%	3,7%
Genito Urinary System and Sex Hormones	6,4%	3,5%
Sensory Areas	1,0%	2,8%
Systematic Hormonal Preparations (Excluding Sex Hormones and Insulins)	3,7%	2,8%
Muscle-Skeleton System	1,9%	2,5%
Dermatology	0,2%	2,2%
Systematically Used Anti-infectives	0,6%	1,2%
Cardiovascular System	0,0%	0,0%

Source: IQVIA, IEIS, calculated at ATC1 level

D. Therapeutic Categories

When the top six therapeutic categories, which account for 48.4% of the market in terms of value, are examined, it can be seen that oncology drugs, maintaining their undisputed first place, have increased their share from 13.6% to 15.2% in the past 8 years. The fact that oncology drugs have the highest share among biotechnological drugs in terms of value is one of the main reasons for their leading position in the overall market. From 2015 to 2022, there has been a decline in the share of antibiotics and cardiovascular drugs, while other treatment groups have shown an increasing trend.

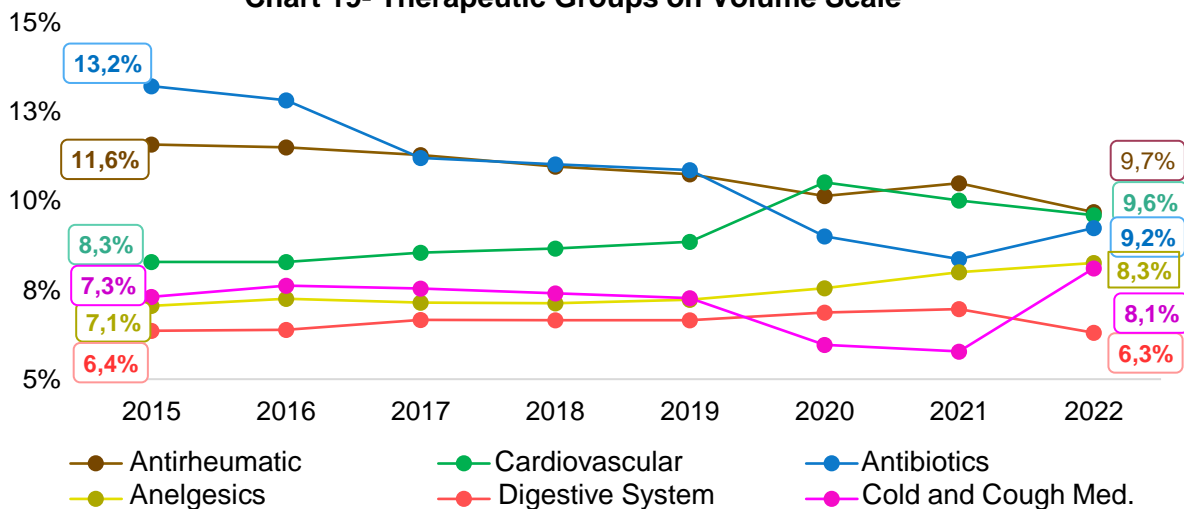
Chart 18- Therapeutic Groups on Value Scale



Source: IQVIA, IEIS "Antibiotics: ATC groups of Antibacterial, Antimycotics and Antivirals"

In 2022, in terms of unit volume, the leading treatment group in the market was anti-rheumatic drugs with a share of 9.7%, followed by cardiovascular drugs with a share of 9.6%. Prescription drugs such as antibiotics and cold remedies experienced a decline as a result of the impact of COVID-19 pandemic measures and reduced access to hospitals. However, with the lifting of restrictions and the return to normalcy, there has been a recovery in these classes in 2022.

Chart 19- Therapeutic Groups on Volume Scale



Source: IQVIA, IEIS "Antibiotics: ATC groups of Antibacterial, Antimycotics and Antivirals"

E. Average Prices

Between 2015 and 2022, the average price of drugs increased by 404.5% and reach TRY 42.99. However, when adjusted for inflation, this indicates a real decrease of 37.8%. Only imported drugs showed an increase above inflation during this period, with a real increase of 6.5%.

When comparing average drug prices between 2021 and 2022, there was a growth of 63.9% in the overall drug market, 63.6% in originator drugs, 73.9% in generic drugs, 84.9% in imported drugs, and 67.6% in locally manufactured drugs.

Despite the rapid increase in exchange rates in 2022, leading to a second adjustment in drug prices in July and the early implementation of the 2023 Periodic Euro Value on December 15, when adjusted for inflation, average prices in the drug market decreased by 17.1%, in originator drugs by 17.3%, in generic drugs by 12.1%, in imported drugs by 6.5%, and in locally manufactured drugs by 15.3% during the 2021-2022 period.

Table 8- Distribution of Average Product Prices (TRY)

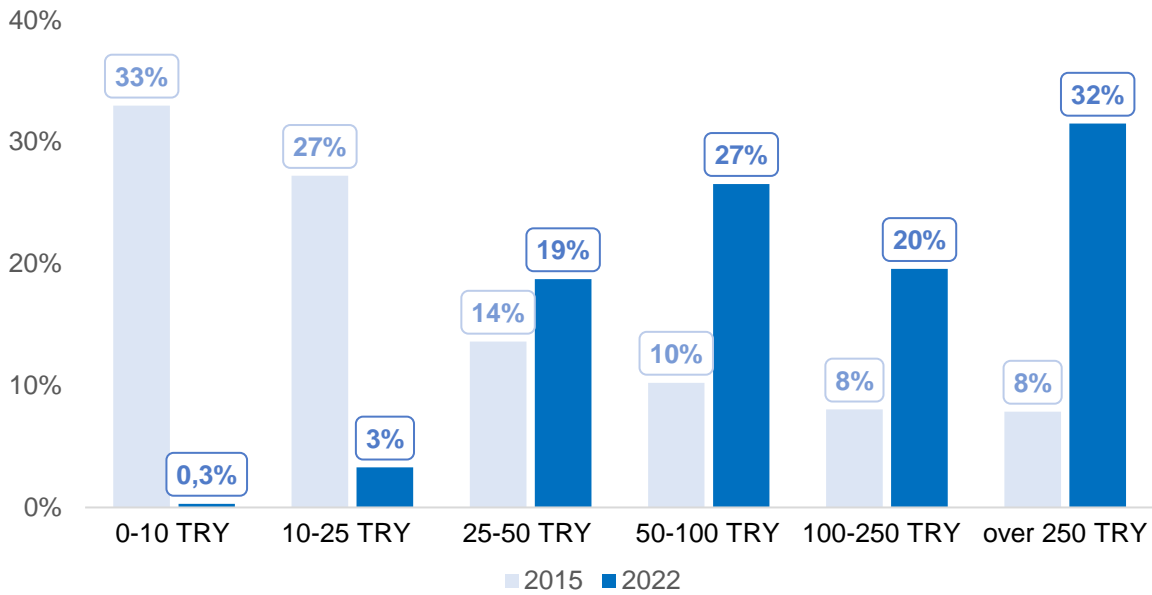
	Medicine	Originator	Generic	Import	Local
2015	8,52	13,55	4,63	23,50	4,59
2016	9,49	15,36	5,23	26,10	5,28
2017	11,03	18,16	6,02	30,94	6,25
2018	13,43	22,49	7,24	42,25	7,75
2019	17,21	29,23	9,53	66,82	10,22
2020	21,77	36,81	11,57	89,01	12,55
2021	26,23	44,00	14,13	109,69	15,51
2022	42,99	71,98	24,57	202,81	25,99
Change Rate					
2015-2022	404,5%	431,2%	430,7%	763,0%	466,3%
2021-2022	63,9%	63,6%	73,9%	84,9%	67,6%
Real Change Rate					
2015-2022	-37,8%	-34,5%	-34,5%	6,5%	-30,2%
2021-2022	-17,1%	-17,3%	-12,1%	-6,5%	-15,3%

Source: IQVIA, IEIS

F. Retail Price Ranges

When looking at the distribution of retail prices of drugs in terms of quantity, due to price adjustments made as a result of exchange rate-related price increases from 2015 to 2022, the proportion of products in the price range of TRY 0-10 has nearly reached zero. In 2022, the share of products priced at TRY 25 and below decreased to 3%, while products priced above TRY 250 captured the largest share with 32% in the market.

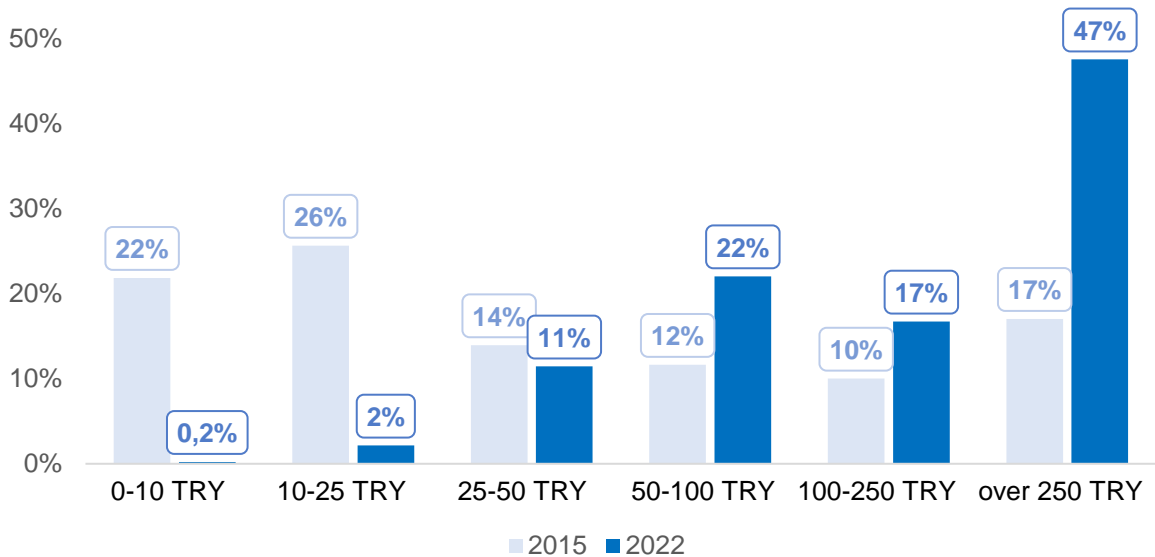
Chart 20- Retail Price Distribution



Source: TITCK, IQVIA, IEIS

When considering the last 8 years, the share of originator drugs priced below TRY 25 has decreased to around 2%, indicating a significant decline in the share of reference drugs priced below TRY 50. On the other hand, originator products priced above TRY 250 have experienced a significant increase, with their share rising by 30 percentage points to 47%, representing the most significant segment in terms of quantity.

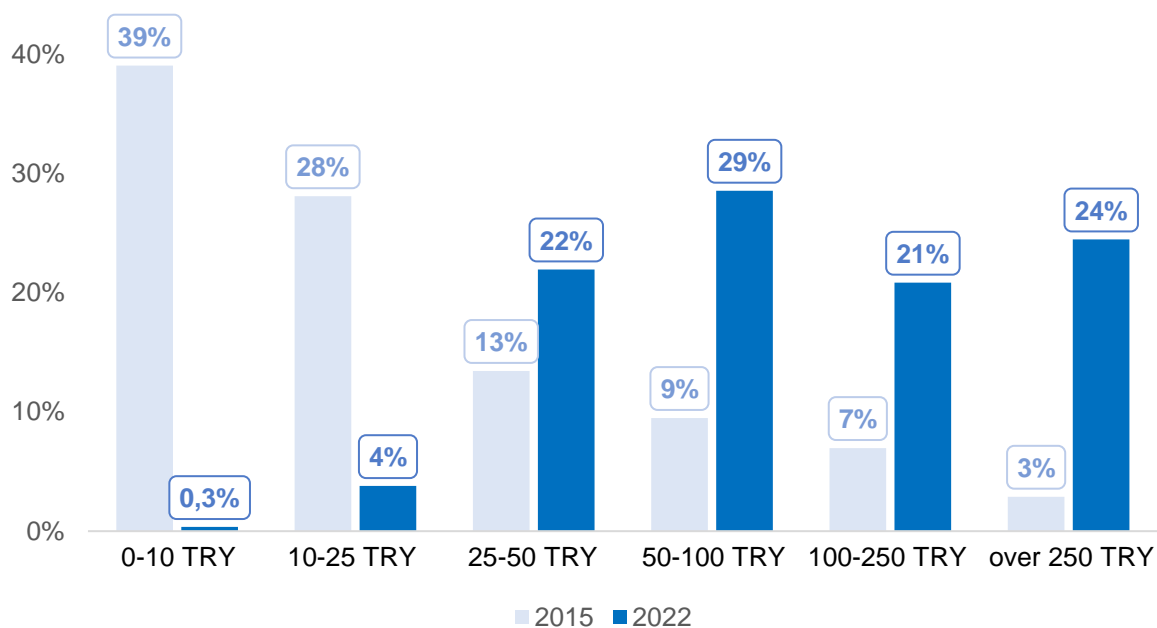
Chart 21- Price Breakdown of Originator Products



Source: TITCK, IQVIA, IEIS

As of 2022, the share of generic products priced below TRY 25 has declined to around 4%, while the product group with the largest market share among generic products consists of products priced between TRY 25 and 100, accounting for 51% of the market.

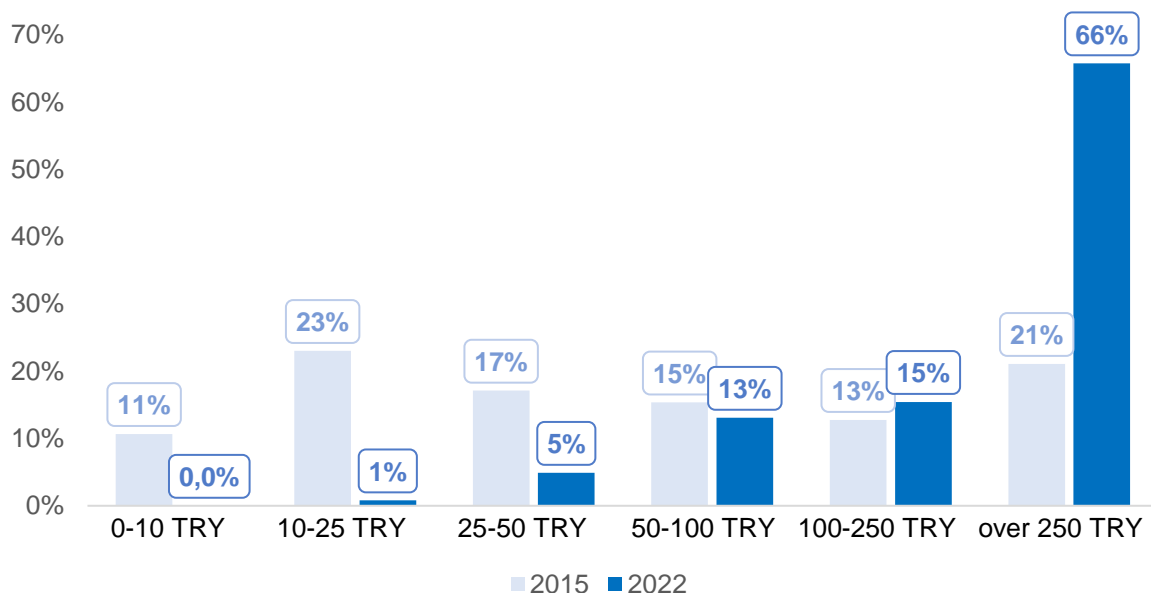
Chart 22- Price Breakdown of Generic Products



Source: TITCK, IQVIA, IEIS

In imported products, the drugs that have increased their share in terms of quantity from 2015 to 2022 are those priced above TRY 100, with drugs priced above TRY 250 accounting for the largest share at 66%.

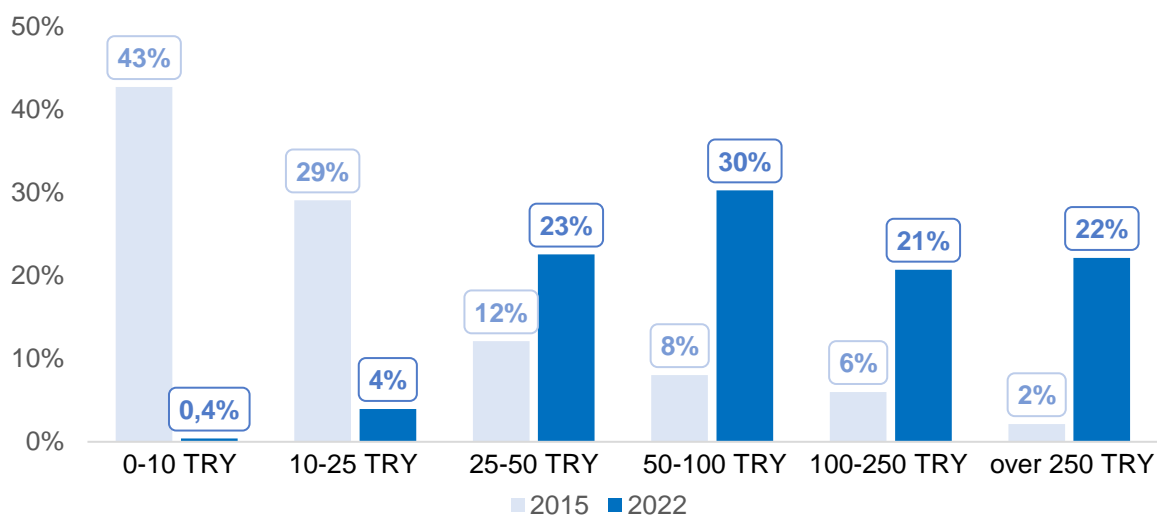
Chart 23- Price Breakdown of Import Products



Source: TITCK, IQVIA, IEIS

In locally manufactured products, the product group with the largest share is the one in the price range of TRY 50-100 with a 30% share. In 2022, products priced at TRY 25 and below constitute 4% of the locally manufactured drug market. When comparing the distribution of average prices between imported and locally manufactured drugs, the importance of policies aimed at increasing local production is highlighted from a different perspective.

Chart 24- Price Breakdown of Local Products



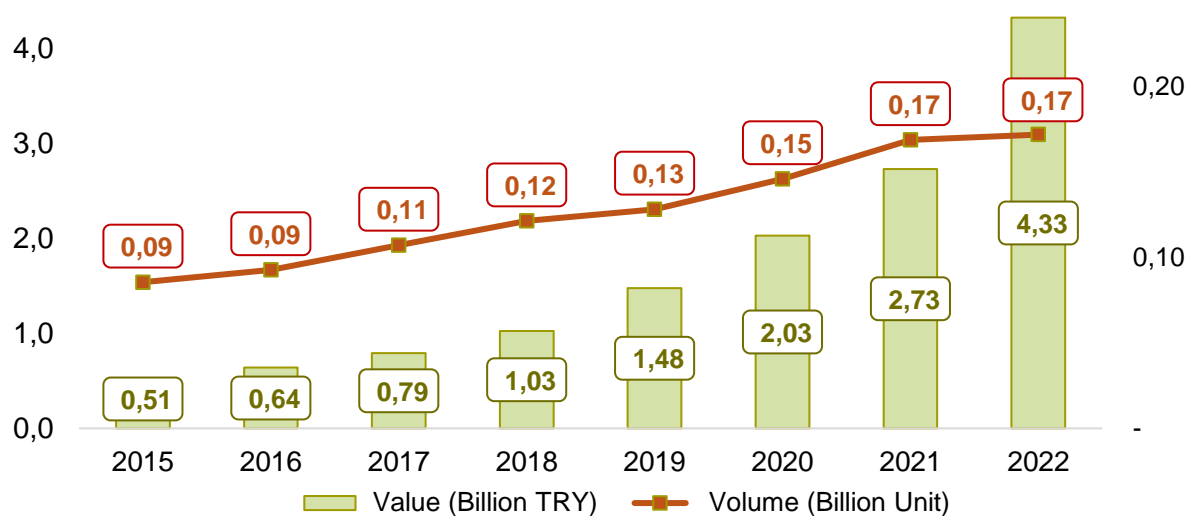
Source: TITCK, IQVIA, IEIS

1.2. Medicinal Nutrition Market

The market for medicinal nutrition consists of enteral nutrition and medical-purpose formulas that are approved by the Ministry of Health. These products are specifically formulated to meet the nutritional needs of individuals affected by illness, health disorders, or medical conditions, and who may have nutritional deficiencies as a result. They are primarily used for supportive treatment rather than promoting general health improvement.

The entire market consists of originator products, of which 98.4% are covered by reimbursement. The medicinal nutrition market achieved a growth of 58.4% in value, reaching TRY 4.3 billion in 2022. The total growth between 2015 and 2022 was at 742.1%, with a CAGR of 35.6%. When adjusted for inflation during the same period, the growth corresponds to a real growth rate of 3.9%.

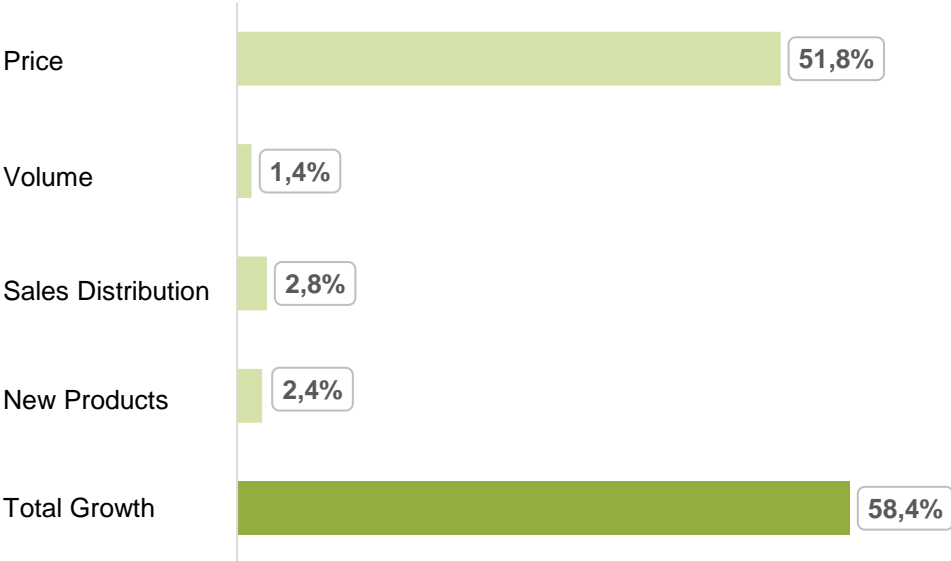
Chart 25- Medicinal Nutrition Market



Source: IQVIA, IEIS

When examined on a unit basis, the medicinal nutrition market grew by 1.8% in 2022, while the growth between 2015 and 2022 reached a level of 101%.

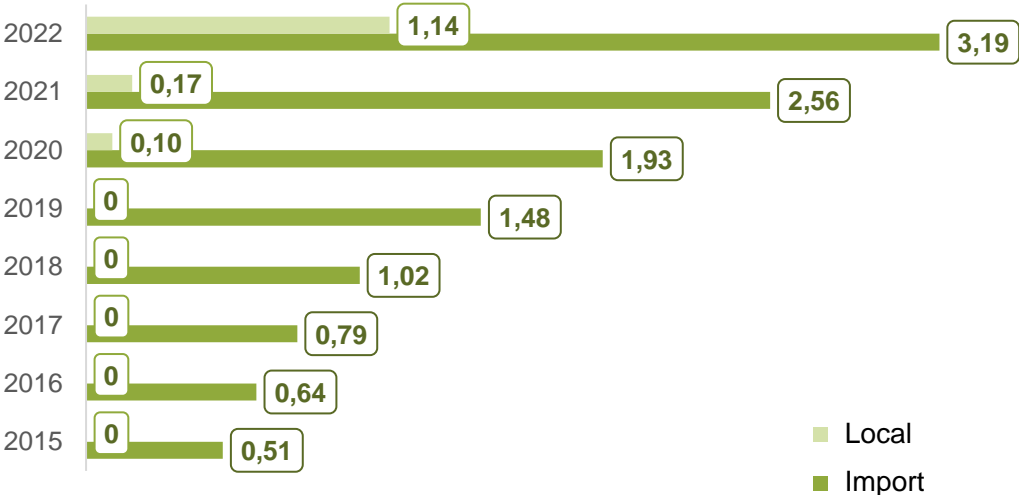
Chart 26- Sources of Medicinal Nutrition Market Growth



Source: IQVIA, IEIS

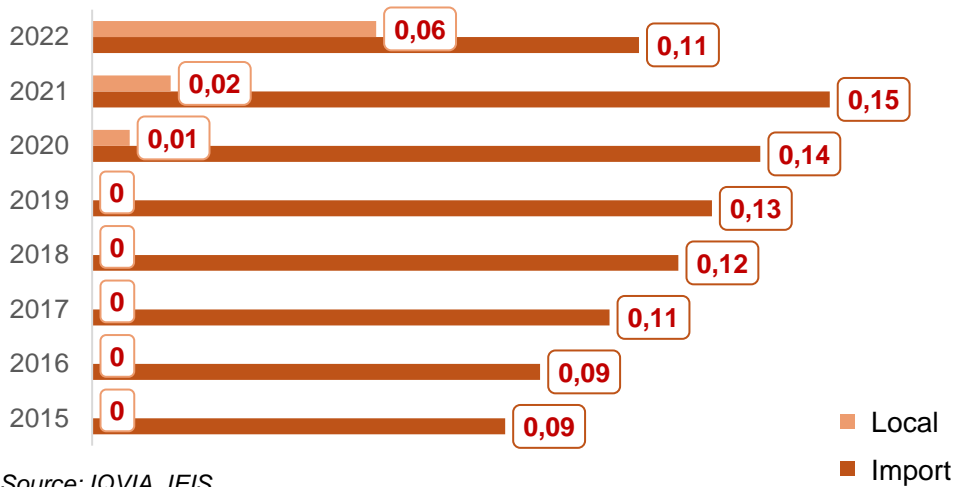
Until recent years, the market consisted entirely of imported originator products. However, with the establishment of production facilities in our country, the share of locally manufactured products has experienced a rapid increase.

Chart 27- Local – Import Medicinal Nutrition Market (Value - Billion TRY)



Source: IQVIA, IEIS

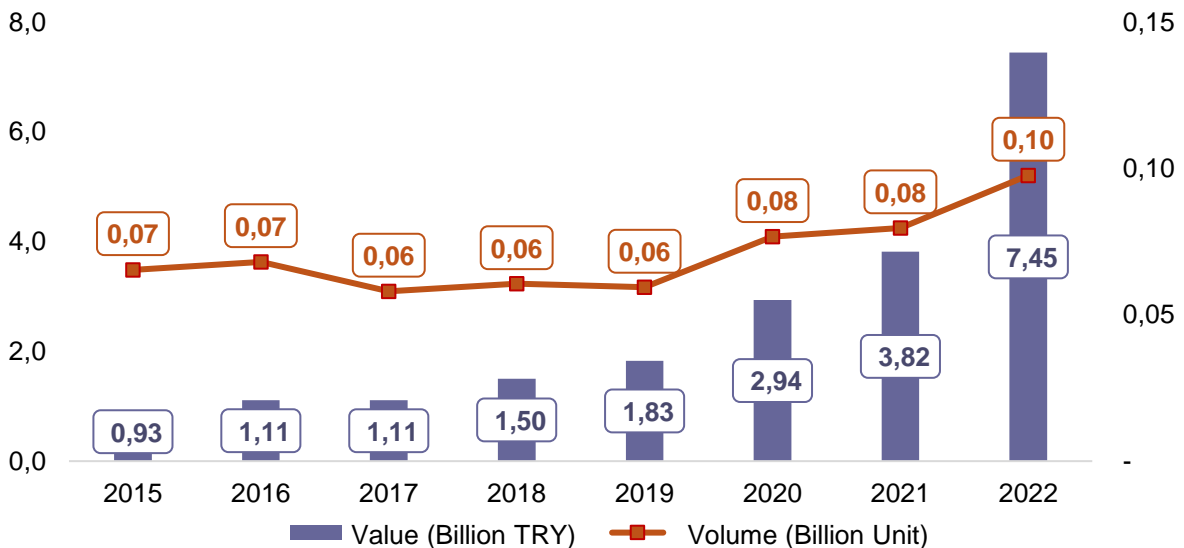
Chart 28- Local – Import Medicinal Nutrition Market (Volume - Billion Unit)



1.3. Medicinal Products Market

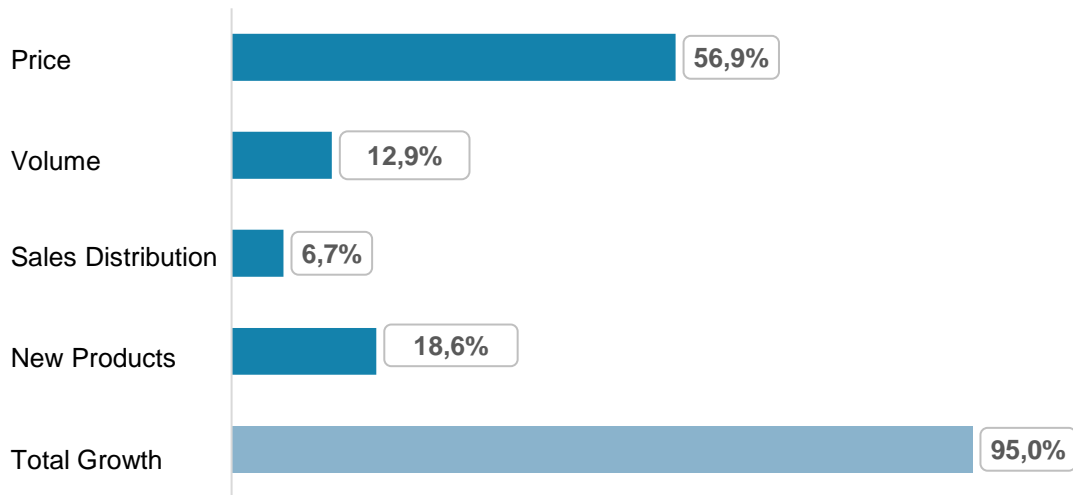
This particular market consists of Health Ministry-approved traditional herbal medicinal products, certain medical devices in pharmaceutical form, as well as Ministry of Agriculture and Forestry-approved formulas, vitamins, and dietary supplements, which are also part of pharmaceutical companies portfolios.

Chart 29- Medicinal Products Market



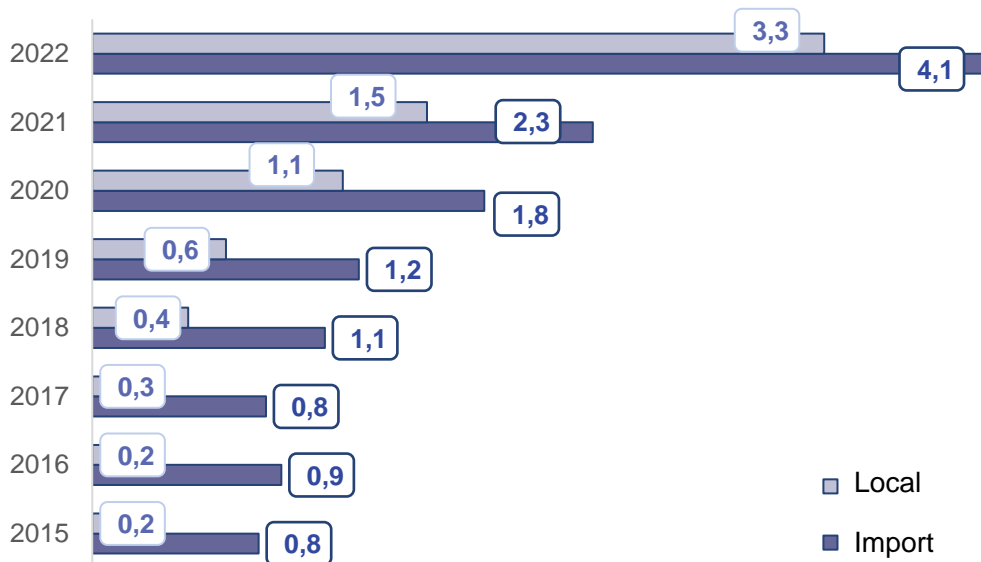
Following the COVID-19 pandemic, with the circulation of numerous information on strengthening immune systems through social communication channels, the market rapidly grew since 2020, reaching 98 million units (in terms of volume) with a 22.6% increase and TRY 7.45 billion (in terms of value) with a 95% increase in 2022. The health products market, where vitamins and dietary supplements constitute 72% of the volume, has grown 8-fold in value between 2015 and 2022.

Chart 30- Sources of Medicinal Products Market Growth



Source: IQVIA, IEIS

Chart 31- Local – Import Medicinal Products Market (Value - Billion TRY)



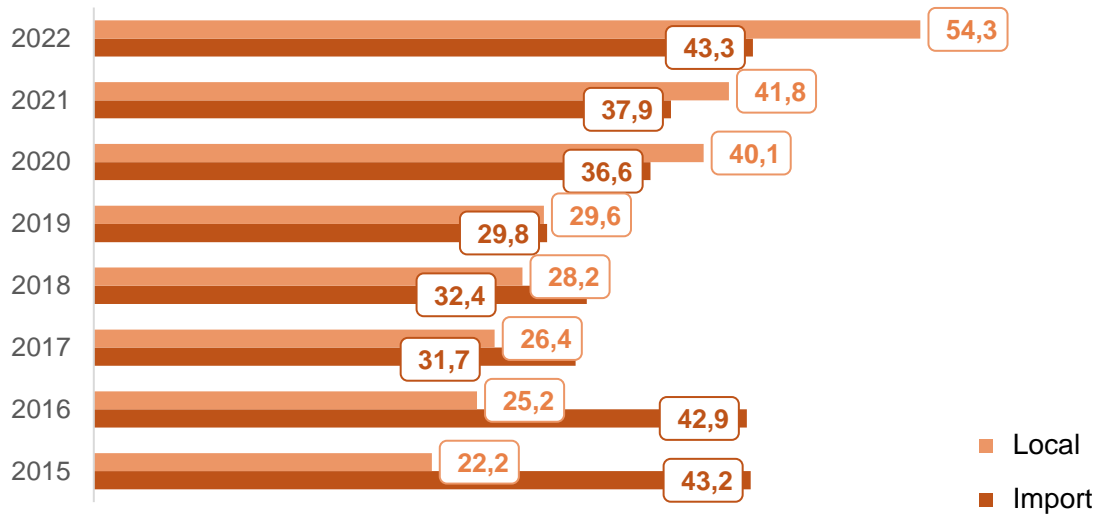
Source: IQVIA, IEIS

In 2022, imported products in the healthcare products market reached TRY 4.1 billion with a 79.2% growth in value, while locally manufactured products reached TRY 1.3 billion with a 118.6% growth in value. When the period between 2015 and 2022 is examined, imported products grew by 439% in value, while locally manufactured products grew by 1,877.6%. Despite the overall growth of the healthcare products market by 700.8% during the same period, a slight contraction of 1.2% is observed when analyzed in real terms.

The healthcare products market experienced a growth of 22.6% in both imported and locally manufactured products in 2022, reaching 43.3 million and 54.3 million units, respectively. From 2015 to 2022, imported products grew by 0.3% while locally

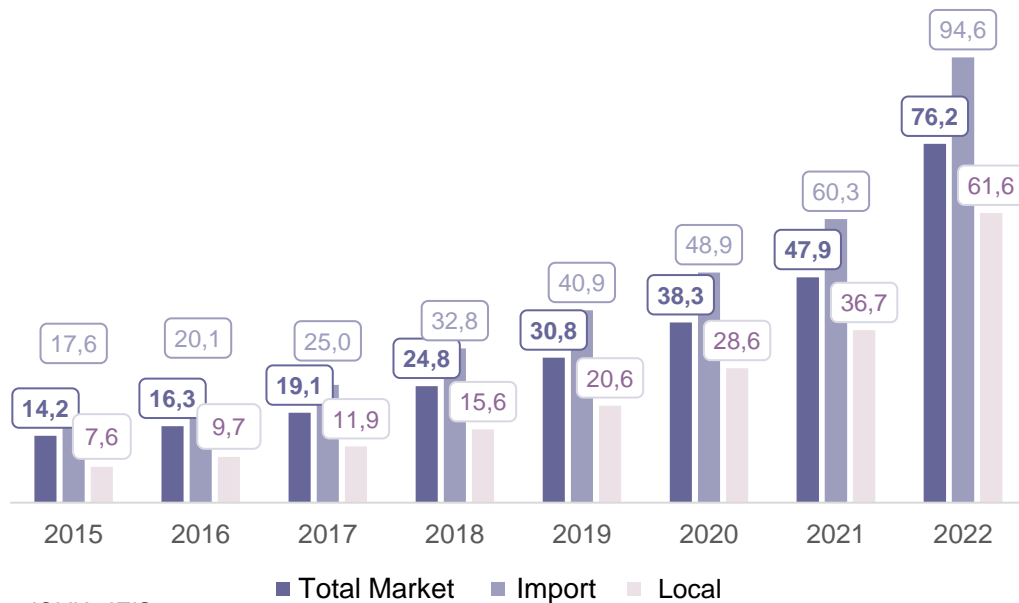
manufactured products grew by 114.6%, contributing to overall growth of 49.3% in the entire healthcare products market.

Chart 32- Local – Import Medicinal Products Market (Volume - Billion Unit)



Source: IQVIA, IEIS

Chart 33- Medicinal Products Market Average Price Distribution (TRY)



Source: IQVIA, IEIS

The average price of healthcare products, which was TRY 14.2 in 2015, increased by 436.2% to reach TRY 76.2 in 2022. During the same period, imported products witnessed a growth of 437.2% in average price, while locally manufactured products experienced a growth of 708.5% in average price.

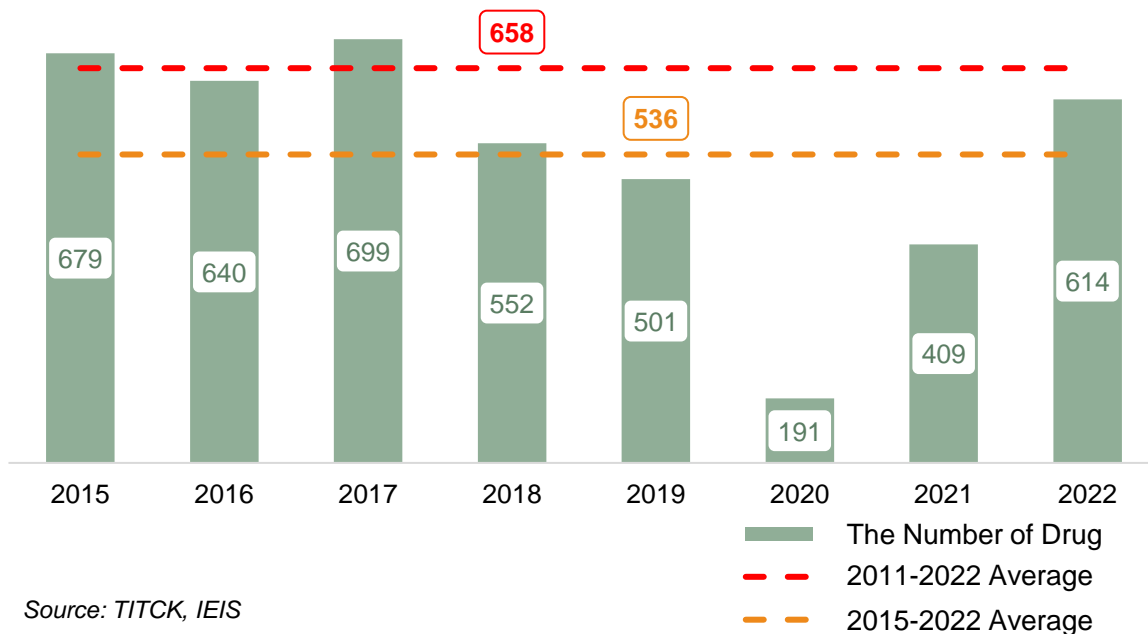
2. Licensing

In 2022, the number of new licenses reached 614, approaching the average of 658 licenses for the period of 2011-2022.

In recent years, the issues surrounding the licensing of new drugs have become one of the main obstacles hindering the industry. Although there has been some recovery in the following years after reaching its peak in 2020, there is a need for much faster processes to overcome the long-standing backlog and return to normalcy.

The prolongation of the licensing process and the inability to bring new drugs to the market not only significantly impact companies' future investments and planning but also delay consumers' access to alternative medications. Additionally, the failure to introduce new drugs has adverse effects on public finances and exports due to production, employment, and Social Security Institution (SSI) purchases.

Chart 34- Number of Novel Product Licenses



3. Investment Incentives

In 2009, with the implementation of Cabinet Decree No. 2009/15199, investment incentives previously applied in various forms by different public institutions underwent significant positive changes and began to be managed under the coordination of the Ministry of Trade. With this decision, in addition to general and regional incentives, the priority investment scope was aimed to include investments in biotechnological drugs, oncological drugs, and blood products within the pharmaceutical industry.

With the amendment made in Cabinet Decree No. 2012/3305 in 2015, pharmaceutical investments were classified under the advanced technology category and became eligible for incentives in the 5th Region. As a result of these developments, a total of TRY 60.9 billion of fixed investment incentives were granted in the pharmaceutical industry between 2015 and 2022. It is estimated that these investments will create employment opportunities for 13,008 individuals.

The fixed investment amount, which was TRY 674 million in 2015, reached a level of TRY 4.8 billion in 2022.

Table 9- Investment Incentives in the Pharmaceutical Industry

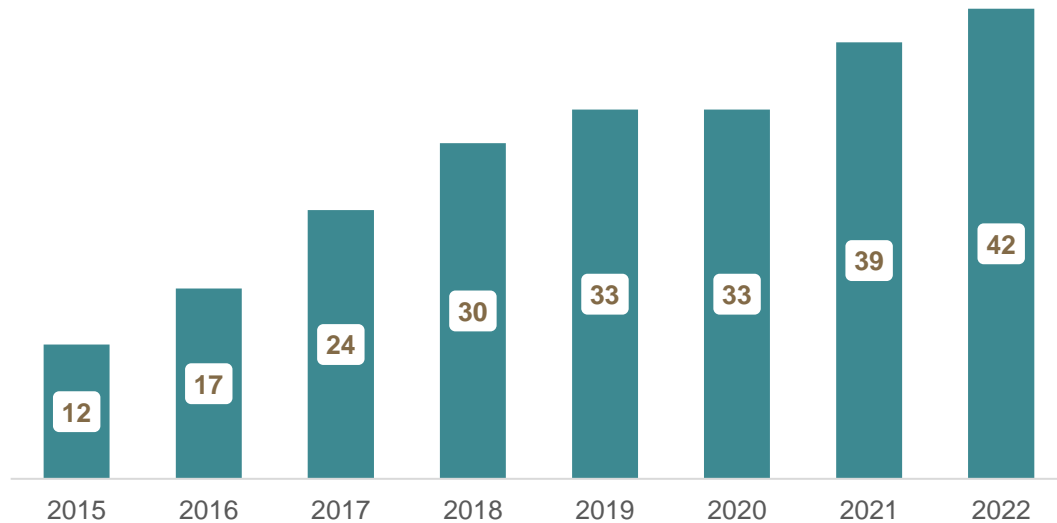
	Number of Documents		Fixed Investment (Million TRY)			Employment via Investment		
	Medicine	Total	Medicine	Total	Share	Medicine	Total	Share
2015	21	3.791	674	118.840	0,57%	912	133.443	0,68%
2016	15	4.737	1.041	129.224	0,81%	882	157.914	0,56%
2017	31	6.862	14.260	238.568	5,98%	2.103	227.523	0,92%
2018	28	5.525	2.568	262.103	0,98%	1.128	261.861	0,43%
2019	36	5.438	6.878	305.818	2,25%	1.073	197.644	0,54%
2020	48	10.219	24.371	471.291	5,17%	3.369	298.862	1,13%
2021	40	12.552	6.227	531.419	1,17%	2.455	376.515	0,65%
2022	32	13.602	4.843	879.229	0,55%	1.086	362.316	0,30%

Source: Ministry of Industry and Technology (05.29.2023 data set), IEIS

4. R&D

The pharmaceutical industry is among the priority sectors that contribute significantly to the industrial transformation of our country, with approximately 2,232 R&D employees and 42 R&D centers accredited by the Ministry of Industry and Technology. Progress in the field of R&D will enable the domestic manufacturing of products that we are currently dependent on imports.

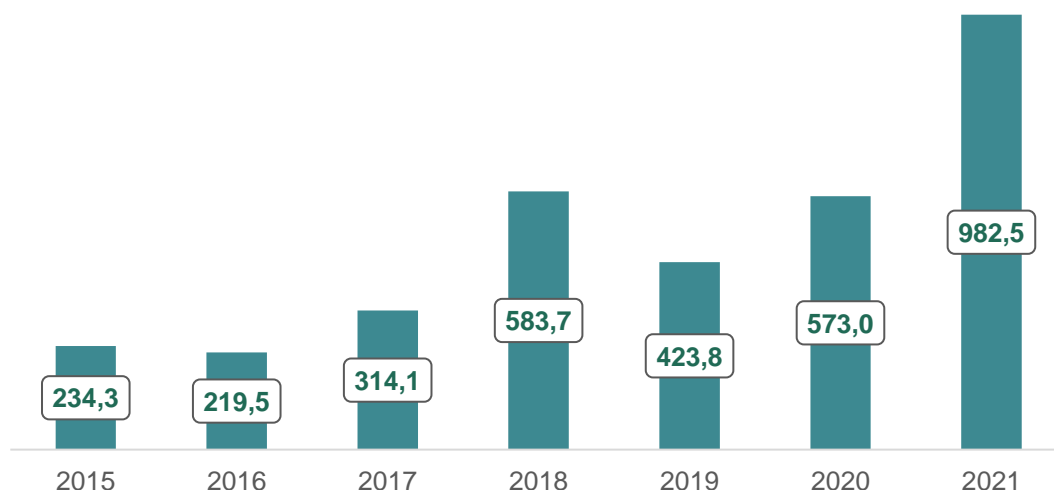
Chart 35- Number of Accredited R&D Centers in the Pharmaceutical Industry



Source: STB, IEIS

The incentive amounts received by pharmaceutical R&D centers have increased by 319% from TRY 234.3 million in 2015 to TRY 982.5 million in 2021.

Chart 36- Pharmaceutical Industry R&D Expenditure (Million TRY)



Source: TUIK, IEIS

5. Production

The Turkish pharmaceutical industry, with a century-long history, advanced production technology, substantial capacity, and a qualified workforce, is a robust industry that continuously invests in advanced technologies to maintain its competitiveness in the global market. As of December 2022, there are 103 manufacturing facilities in our country, operating at international standards, including 93 pharmaceutical and 10 radiopharmaceutical facilities and there are 13 facilities dedicated to the production of raw materials.

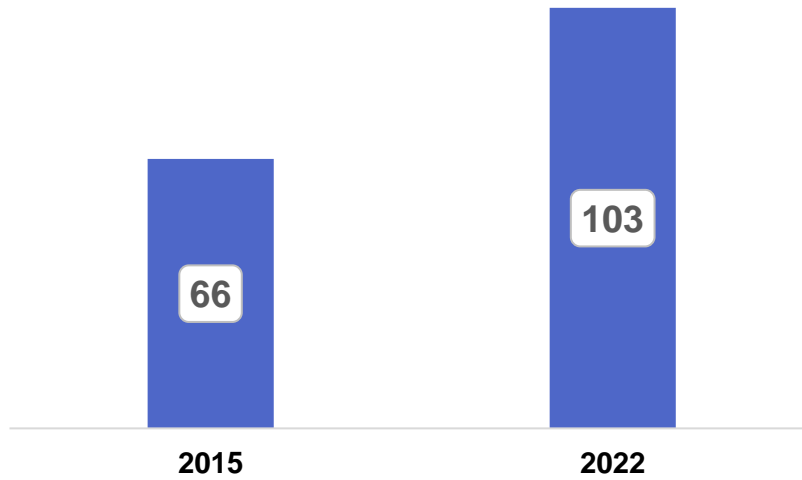
Furthermore, in recent years, the production of medicinal nutrition, which is used to support the nutrition and treatment of individuals affected by a disease or medical condition, has commenced in our country with the establishment of 4 facilities.

One of the prioritized topics on the industry's agenda is local production. In the Medium-Term Program (2023-2025) published in the Official Gazette dated September 4, 2022, it has been recorded that projects aimed at enhancing our global competitiveness and reducing foreign dependency by developing vaccines, pharmaceuticals, medical devices, diagnostic kits, and artificial intelligence-based health technologies will be supported.

In addition, in the Annual Presidential Program for the Year 2023, published in the Official Gazette dated October 25, 2022, the pharmaceutical sector has been recognized as a strategically significant field. It has been emphasized that the COVID-19 pandemic highlighted the importance of the sector's capacity, diversity, ability to respond quickly to emergencies, and the significance of R&D activities. Additionally, the Program underlined the increasing need for localization policies in vaccines, pharmaceuticals, protective equipment, and medical devices.

In this respect, the development of sustainable localization policies to ensure supply security in pharmaceuticals and vaccines, and strengthening the production infrastructure for raw materials, intermediate products, active substances, and packaging materials is of great importance to ensure supply security.

Chart 37- Number of Production Facilities

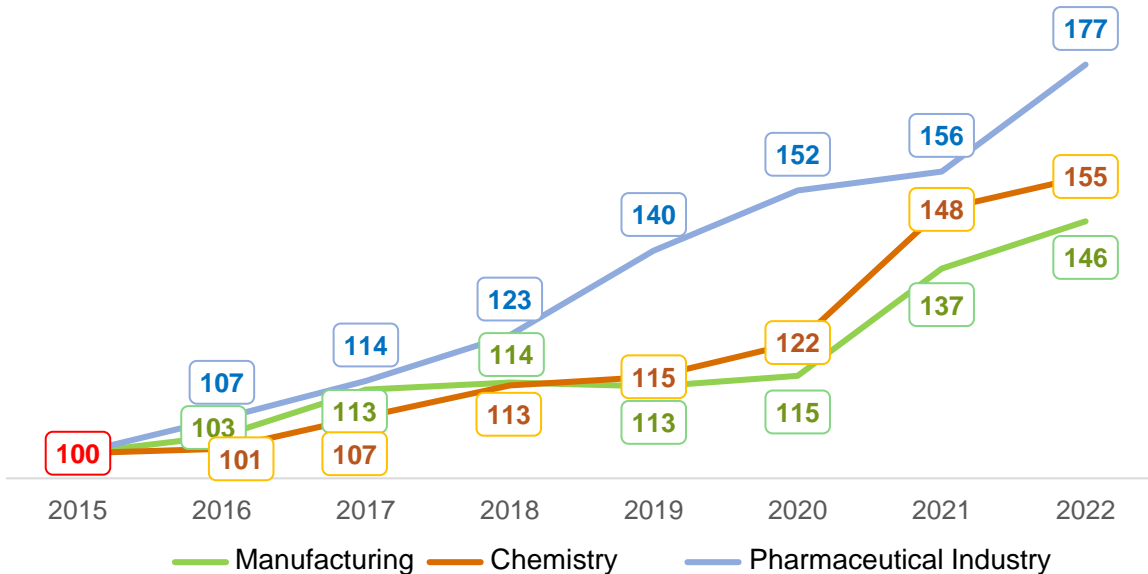


Source: TITCK, IEIS

Despite the global supply challenges and significant cost increases that began in 2021, the Turkish pharmaceutical industry has continued its uninterrupted production. Ensuring drug supply security and prioritizing access to medication for our citizens have been identified as primary objectives.

According to the industrial production index data, in 2022 the manufacturing industry reached 146.1 points with a growth of 6.9%, the chemical industry reached 155 points with a growth of 4.4%, while the pharmaceutical industry reached 177.2 points with a growth of 13.6%. In the period between 2015-2022, production in the manufacturing industry increased by 46.1%, in the medium-technology chemical industry by 55%, while in the pharmaceutical industry by 77.2%.

Chart 38- Industrial Production Index Change (2015-2022)

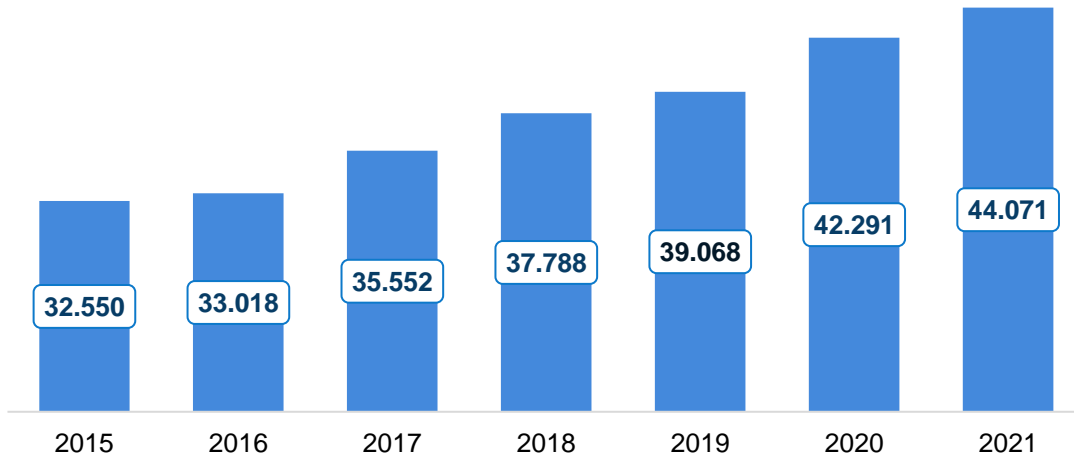


Source: TUIK, IEIS

6. Employment

In 2021, there was a 9.7% increase in total employment in Türkiye compared to 2020. During the same period, employment in the pharmaceutical industry reached 44,071 people, representing a 4.2% increase.

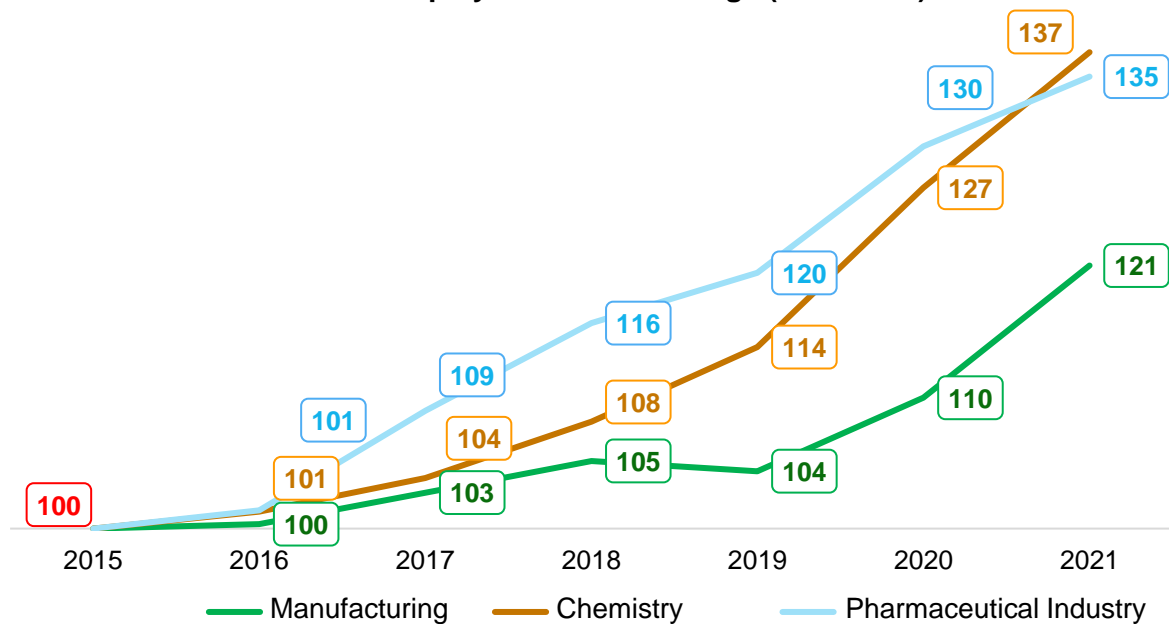
Chart 39- Employment in the Pharmaceutical Industry (Number of People)



Source: TUIK, IEIS

When employment data between 2015 and 2021 is indexed, it is evident that the pharmaceutical industry has exhibited a strong performance, with a 35% growth, surpassing the overall employment rate in Türkiye, which was 15% during the same period.

Chart 40- Employment Index Change (2015-2021)

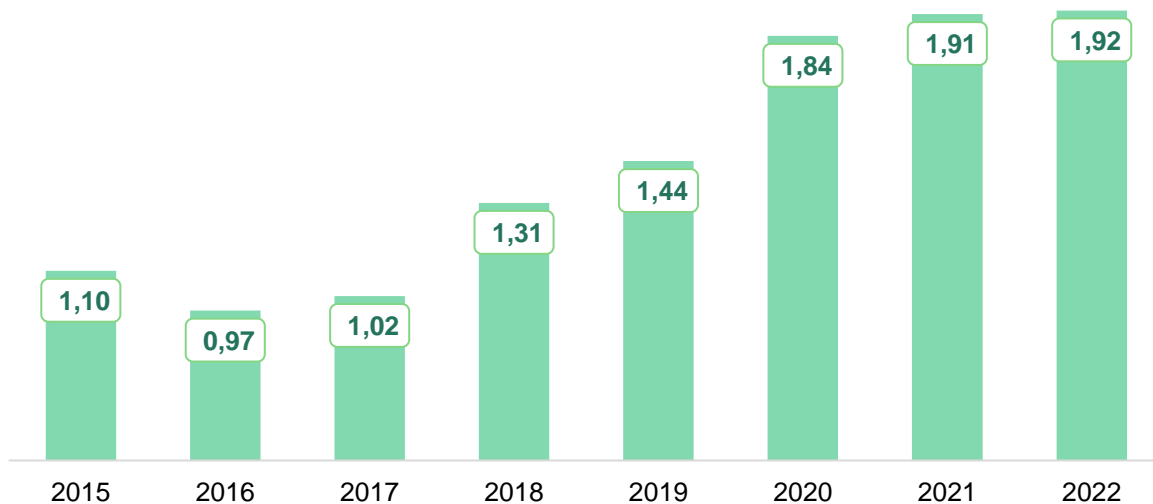


Source: TUIK, IEIS

7. Foreign Trade

In the past two years, pharmaceutical exports have experienced relatively stagnant growth, closing the year 2022 at a level of USD 1.92 billion with only a 0.6% growth rate. However, during the period from 2015 to 2022, when Türkiye's total exports grew by 68.3%, pharmaceutical exports demonstrated a strong performance, surpassing the country's average with a remarkable 74.7% increase.

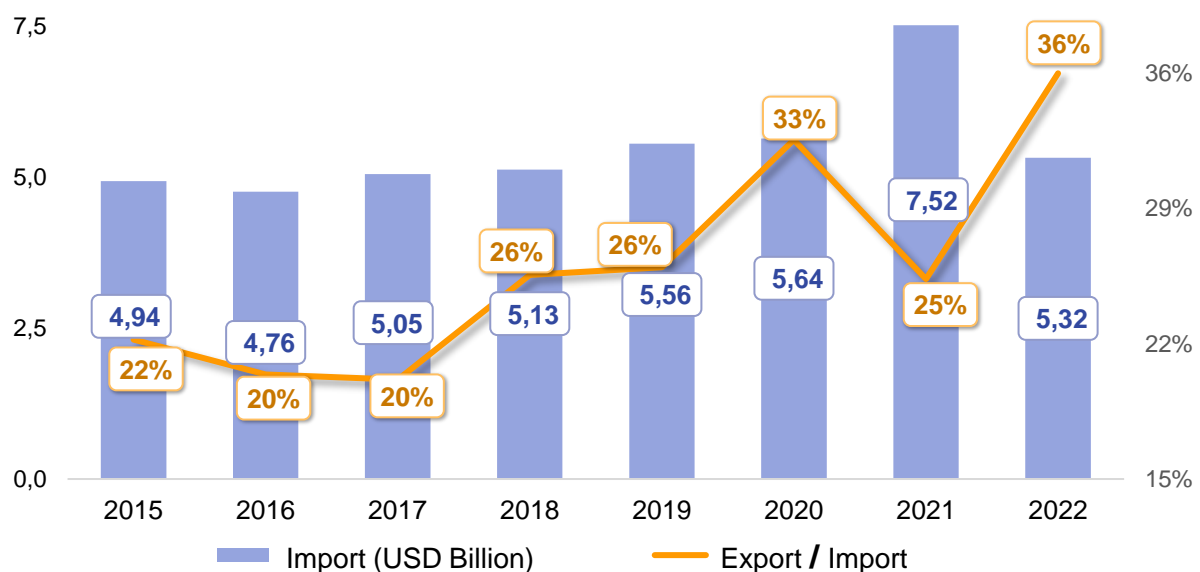
Chart 41- Export Value in the Pharmaceutical Industry (Billion USD)



Source: TUIK, IEIS

In 2022, pharmaceutical imports, including the decline in vaccine imports due to the waning impact of the pandemic, decreased by 29.2% to reach a level of USD 5.32 billion. During the period from 2015 to 2022, the growth rate of pharmaceutical imports stood at 7.8%, and the import-to-export ratio of pharmaceuticals reached 36%.

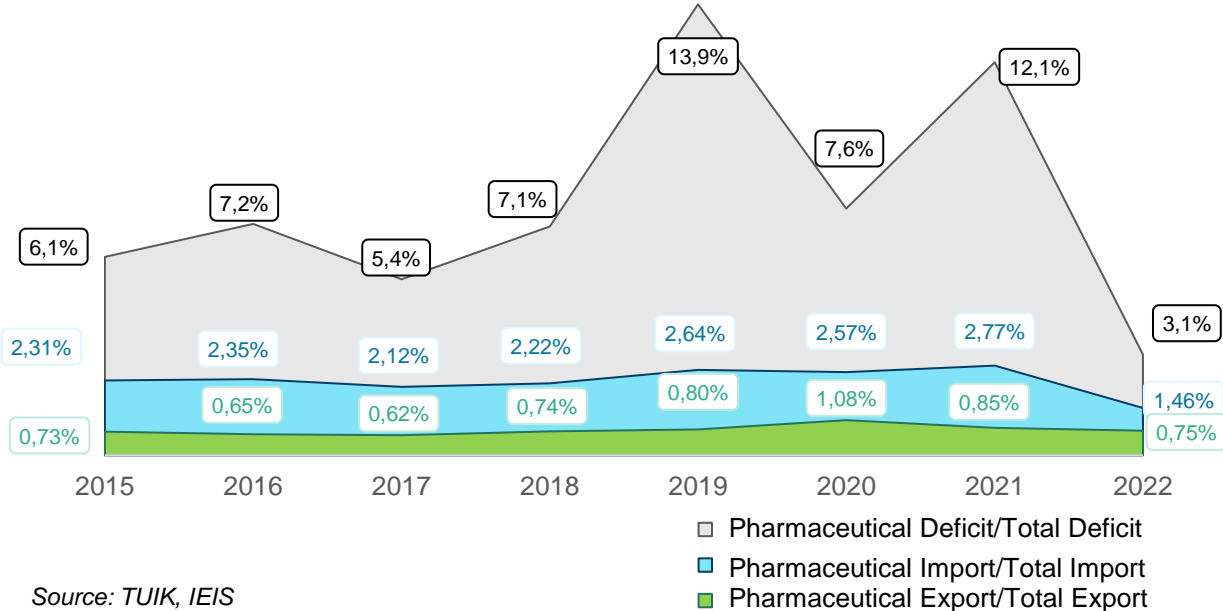
Chart 42- Import Value in the Pharmaceutical Industry



Source: TUIK, IEIS

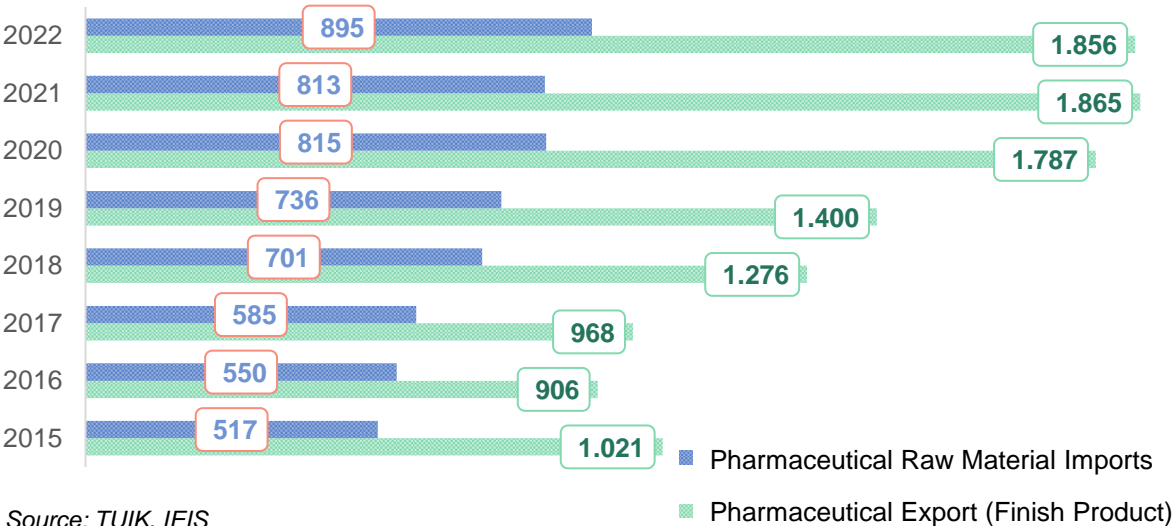
In 2020, the share of pharmaceutical exports in Turkiye's total exports exceeded 1% for the first time in history, reducing the contribution of pharmaceuticals to the trade deficit. Although the share of pharmaceutical exports in total exports was 0.75% in 2022, the decline in its share in imports to 1.46% brought its contribution to overall foreign trade down to 3.1%. These figures once again highlight the strategic and high-value-added nature of the pharmaceutical industry.

Chart 43- Pharmaceutical Industry in Turkish Foreign Trade



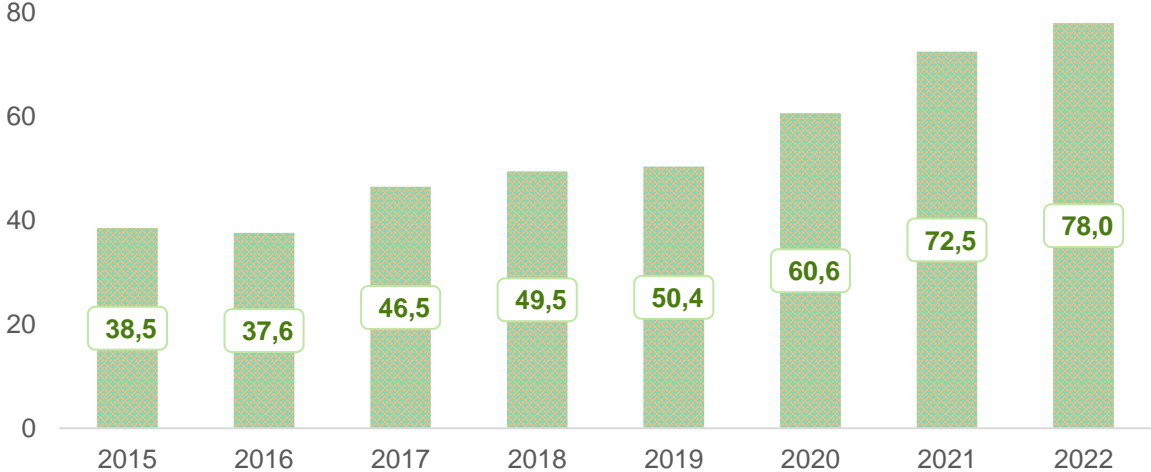
When examining the import of pharmaceutical raw materials and the export of finished pharmaceutical products, the contribution of the pharmaceutical industry to the country's economy becomes more apparent. Despite the high increase in exchange rates and the rise in costs in 2022, there was an influx of USD 895 million worth of raw materials, while USD 1.86 billion worth of final product exports were achieved. Meeting the demand for finished products through domestic production capabilities in pharmaceutical imports will not only increase exports but also contribute to a decrease in the trade deficit.

Chart 44- Finished Product vs Raw Material in Pharmaceutical Industry (Million USD)



When examining the export quantity from 2015 to 2022, it is seen that the export of pharmaceuticals reached 78 million kilograms in 2022 with an increase of 102.6% from 38.5 million kilograms in 2015.

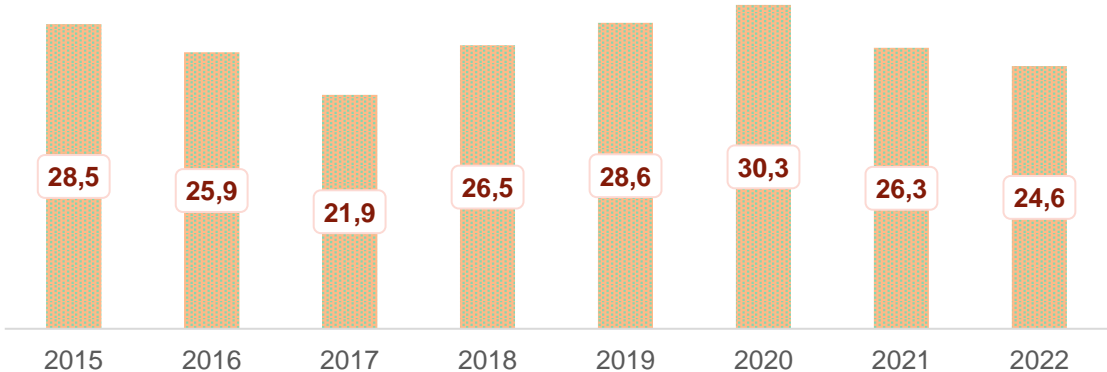
Chart 45- Export Amount in the Pharmaceutical Industry (Million Kg)



Source: TUIK, IEIS

The pharmaceutical export quantity has been increasing in kilograms; however, the export price per kilogram has not risen at the same rate. When the same period is examined, the export price per kilogram has decreased by 13.7% from USD 28.5 to USD 24.6. It is evident that the price-focused policies implemented in our country are the main reason for the kilogram price, and consequently, the export value, falling below what it should be.

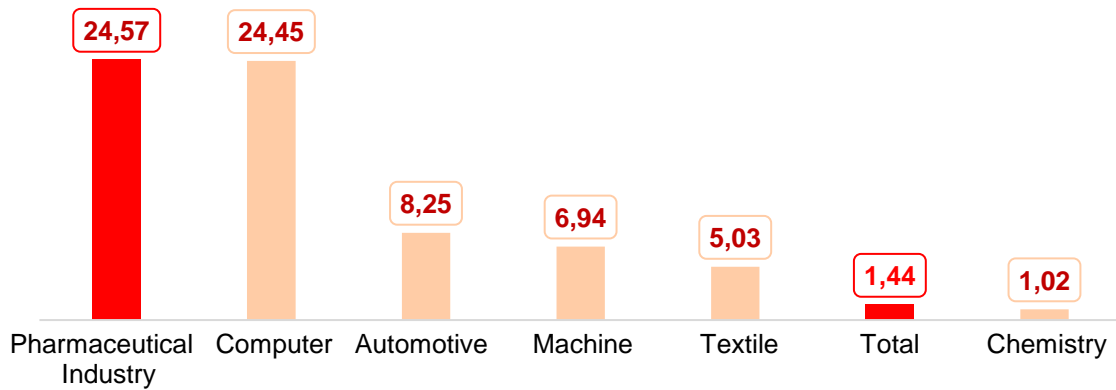
Chart 46- Pharmaceutical Export Price Per Kilo (USD)



Source: TUIK, IEIS

Although our industry's export value per kilogram is above the Turkish average of USD 1.44 and higher than many sectors, it is still far below its potential added value.

Chart 47- Export Price Per Kilo in Various Sectors (USD)



Source: TUIK, IEIS

The acceptance of drug prices in our country as reference/source prices in the countries we export to leads our companies to enter other markets at lower prices than they should. The resolution of issues related to processes such as licensing and customs in target countries for export, as well as problems such as unauthorized exports benefiting from the pricing policy created by our country for the public interest, in which pharmaceutical companies provide significant support at great costs, is crucial for our industry to become one of the world's leading pharmaceutical manufacturers and exporters.

When examining the countries to which exports were made, in 2022, exports were realized to approximately 185 countries, including the European Union (EU), the Commonwealth of Independent States (CIS), and North African and Middle Eastern countries. The Asian region accounted for the highest share of pharmaceutical exports with 58.9%, followed by Europe with 31.9%. The top 20 countries where pharmaceutical exports were carried out in 2022 accounted for 71% of the total pharmaceutical exports.

Table 10- First Twenty Countries in Pharmaceutical Export (Million USD)

Countries	2021	2022	Share 2022	Change
South Korea	368,1	433,7	23%	18%
Iraq	109,2	108,6	6%	-1%
Kazakhstan	72,7	95,4	5%	31%
Uzbekistan	65,8	92,4	5%	41%
Iran	99,6	86,0	4%	-14%
Georgia	44,6	65,5	3%	47%
Azerbaijan	145,2	63,5	3%	-56%
Hungary	2,9	56,0	3%	1806%
Russian Fed.	23,1	42,4	2%	84%
Poland	32,8	40,0	2%	22%
Germany	34,5	39,0	2%	13%

T. R. N. C.	35,9	38,2	2%	7%
Syria	26,7	30,6	2%	15%
Bulgaria	75,8	29,7	2%	-61%
Switzerland	31,3	29,4	2%	-6%
Albania	43,7	24,6	1%	-44%
Kyrgyzstan	21,6	23,3	1%	8%
Netherlands	15,4	22,5	1%	47%
Moldova	26,5	22,3	1%	-16%
France	17,9	20,6	1%	15%
Total of List	1.293	1.364	71%	5,5%
Total Export	1.905	1.916	100%	0,6%

Source: TUIK, IEIS

In 2022, 60% of pharmaceutical imports were from the European region, while 27.3% were from the Asian region, with imports being conducted from 110 countries. The top 20 countries in pharmaceutical imports accounted for 96% of the total pharmaceutical imports in 2022.

Table 11- First Twenty Countries in Pharmaceutical Import (Million USD)

Countries	2021	2022	Share 2022	Change
Germany	1.285,2	987,6	19%	-23%
China	1.180,2	564,9	18%	-52%
USA	564,0	524,8	18%	-7%
South Korea	361,4	481,1	18%	33%
Italy	376,7	340,0	18%	-10%
Switzerland	364,5	332,3	18%	-9%
Ireland	429,2	320,3	18%	-25%
France	303,6	261,1	18%	-14%
India	212,7	246,4	18%	16%
Denmark	66,8	182,8	18%	174%
Belgium	1.359,8	135,9	18%	-90%
Spain	149,2	135,0	18%	-9%
United Kingdom	168,1	123,9	18%	-26%
Singapore	65,1	91,7	18%	41%
Brazil	86,2	72,9	18%	-15%
Austria	69,2	70,8	18%	2%
Sweden	75,1	66,6	18%	-11%
Netherlands	49,6	63,4	18%	28%
Greece	46,7	61,1	18%	31%
Japan	57,3	41,5	18%	-27%
Total of List	7.271	5.104	96%	-29,8%
Toplam Import	7.516	5.323	100%	-29,2%

Source: TUIK, IEIS

Table 12- First Five Products in Pharmaceutical Export (Million USD)

CTSP	Product	2021	2022	Share 2022	Change
3004	Medications prepared for usage in treatment or prevention (dosed)	1.262,0	1.226,0	64%	-3%
3002	Human blood, animal blood, serum, vaccines, toxins, etc.	534,3	556,2	29%	4%
3006	Pharmaceutical goods and ready-mades that are not included in any other part of the Tariff	54,2	57,5	3%	6%
2936	Pro-vitamins and vitamins	10,0	21,7	1%	117%
3003	Medications mixed for usage in treatment or prevention (no dosage)	14,4	16,4	1%	14%
Total of List		1.875	1.878	98%	0,1%
Total Export		1.905	1.916	100%	0,6%

Source: TUIK, IEIS

When the pharmaceutical foreign trade is examined based on the Customs Tariff Statistics Position (CTSP) in 2022, blood products, serums, vaccines, toxin products, and medications for curative and preventative medicine constituted 93% of our exports and 78% of our imports.

Table 13- First Five Products in Pharmaceutical Import (Million USD)

GTIP	Ürün	2020	2021	Pay 2021	Change
3002	Human blood, animal blood, serum, vaccines, toxins, etc.	3.962,8	2.100,7	39%	-47%
3004	Medications prepared for usage in treatment or prevention (dosed)	2.487,4	2.062,8	39%	-17%
2941	Antibiotics	144,2	211,6	4%	47%
3003	Medications mixed for usage in treatment or prevention (no dosage)	139,7	140,4	3%	0%
2936	Pro-vitamins and vitamins	111,9	131,6	2%	18%
Total of List		6.846	4.647	87%	-32,1%
Total Import		7.516	5.323	100%	-29,2%

Source: TUIK, IEIS

8. Price Policies

In 2009, to overcome the pressure on public finances caused by the effects of the global crisis, the global budget system was implemented, which included radical regulations and aimed to control healthcare expenditures solely through measures taken on drug prices. Drug budgets, which were not proportional to the services provided, were determined, and drug prices were continuously reduced by citing the exceeding of the drug budget as a reason, while the SSI discount rates were increased.

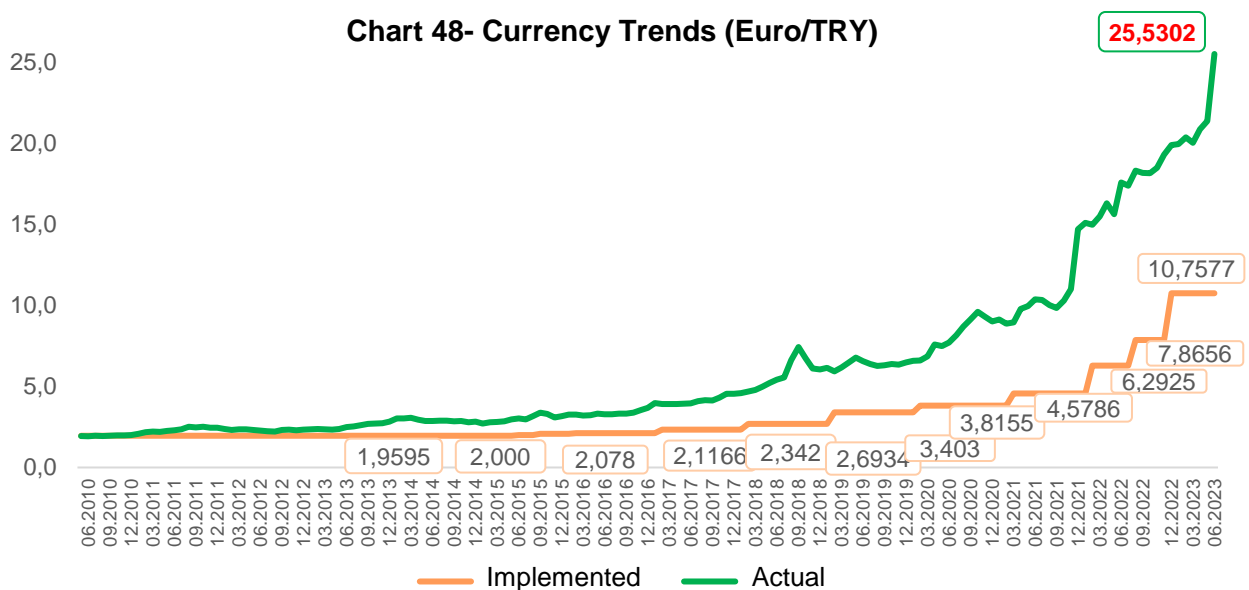
In addition, as long as the conditions required by the legislation were met, the EUR-TRY exchange rate used for pharmaceutical products imported from the EU was kept fixed at TRY 1.9595 from April 2009 to May 2015 without being updated, in order to control drug expenditures.

After a legal process initiated by the industry for updating the exchange rate, it was concluded in favor of the pharmaceutical sector in April 2015. Subsequently, the practice was transformed into determining the exchange rate at 70% of the previous year's Euro average. In this context, the exchange rate value was updated to TRY 2.3421 for the year 2017. However, for the year 2018, instead of the expected 23% increase, a temporary decision was made to increase the drug exchange rate by only 15%, and it was determined as TRY 2.6934.

In 2019, the adjustment coefficient used to determine the annual average Euro value was reduced from 70% to 60%, resulting in a conversion rate of TRY 3.4037. However, in 2021, despite the expected 26.5% increase, another temporary decision was made to increase the drug exchange rate by only 20%, and it was announced as TRY 4.5786.

Despite the rapid exchange rate increases starting from the fourth quarter of 2021, the implementation of the drug exchange rate at TRY 6.2925 in February 2022 within the legal framework proved insufficient in alleviating the heavy conditions faced by the industry. Due to the industry's severe difficulties in the rapidly changing economic environment, the drug exchange rate was increased by 25% to TRY 7.8656 in July. With the continued increase in exchange rates and cost components, the drug exchange rate for 2023 was set at TRY 10.7577, representing a 36.8% increase, and it was implemented in December 2022.

The process highlighted the need for a more dynamic structure of regulations and practices to ensure the sustainability of the industry, particularly emphasizing the importance of updating the drug exchange rate at least twice a year.



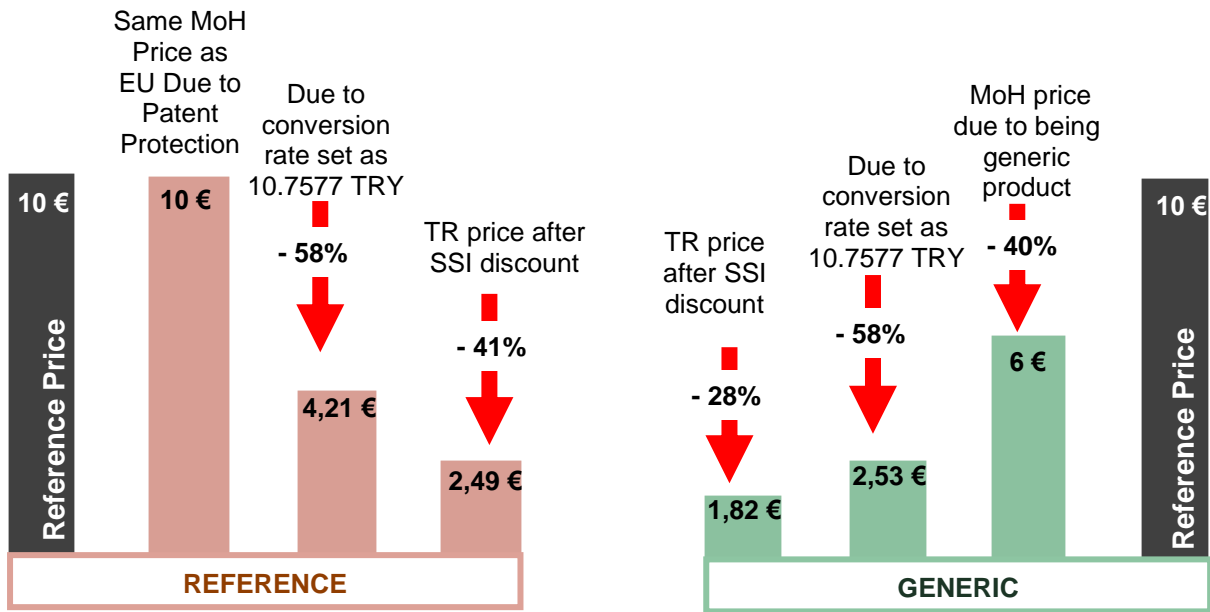
Source: TCMB, IEIS

Furthermore, the industry faces intense price pressure due to the discounts imposed by the SSI, which can reach up to 41% and even exceed 50% in some cases. As a

result of the cost-focused reimbursement system implemented by the SSI, drug prices in our country have reached a level lower than not only the European countries we reference but also India, from which we import raw materials.

The graph below summarizes the pricing of a product with a source price of 10 euros in Turkiye based on the current exchange rate. The price of the originator product in Turkiye is reduced to EUR 2.49, while the price of the generic product decreases to EUR 1.82.

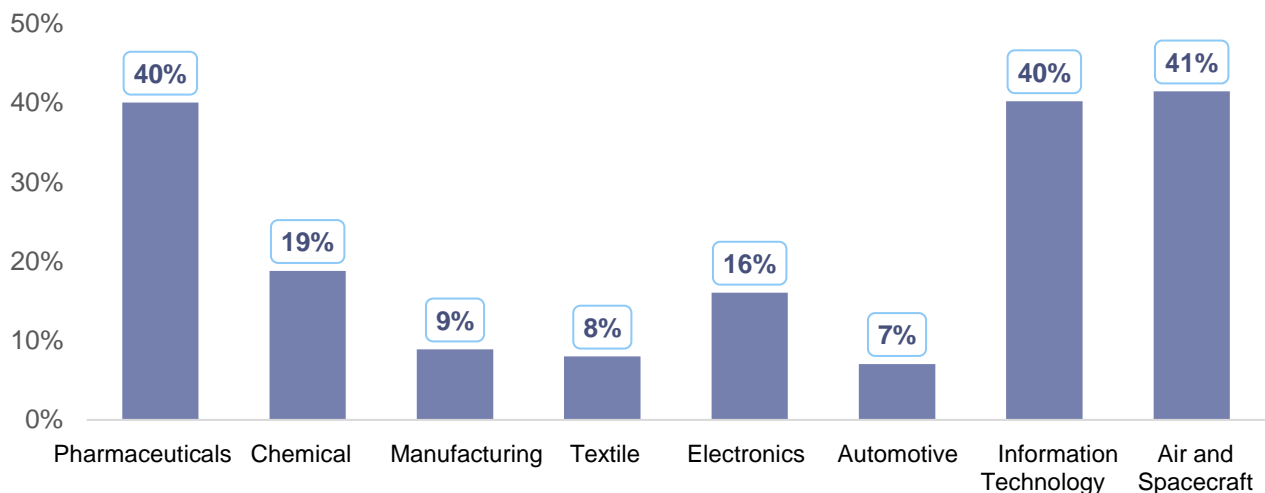
Chart 49- Pharmaceutical Pricing



Calculations were made based on the value 25.5302 TRY dated June 2023

In the 2015-2020 period, the pharmaceutical industry, which is categorized as a strategic high-tech industry, recorded a 40% change in net sales.

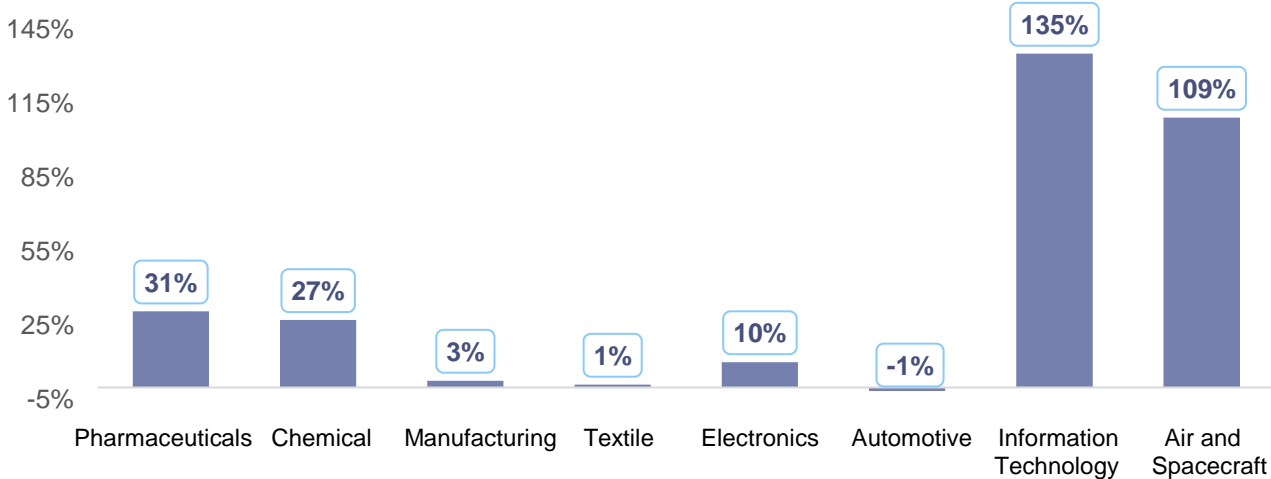
Chart 50- Real Changes in Net Sales (2015-2020)



Source: STB, IEIS

The pharmaceutical sector, despite showing a similar level of real growth in net sales compared to other sectors in the high-technology class, has limited capacity to generate the necessary equity to strengthen its R&D capabilities.

Chart 51- Real Change in Equities (2015-2020)

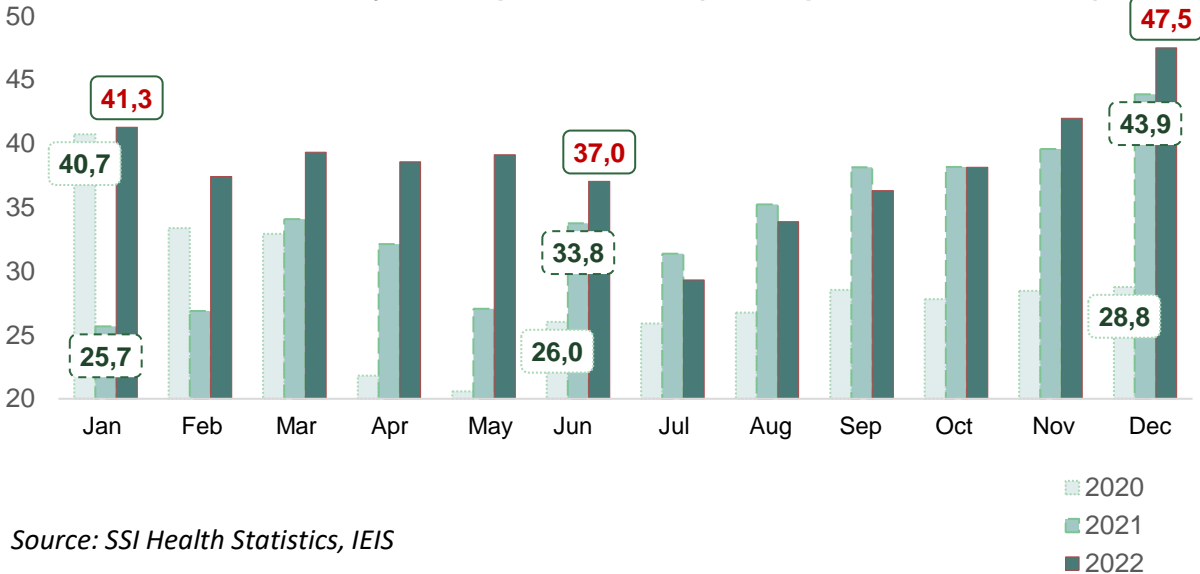


Source: STB, IEIS

Despite the extraordinary conditions that affected society and business during the COVID-19 pandemic in 2020 and 2021, including challenges related to raw material supply, logistical disruptions, increased costs, fluctuations in drug sales, and many other demanding conditions, the Turkish pharmaceutical industry has continued its operations uninterrupted in its manufacturing facilities, providing full support to ensure the country's drug supply security.

With the easing of restrictions, prescription numbers have returned to previous levels starting from June 2021. In 2022, there has been a record increase of 13% reaching 460 million prescriptions.

Chart 52- SSI Monthly Prescription Number (Prescriptions in Million Unit)



Source: SSI Health Statistics, IEIS

9. Conclusion and Evaluation

The pharmaceutical industry is a dynamic sector that closely follows technology, constantly invests in novel technologies, and needs to establish new facilities and engage in systematic renewal efforts to be able to produce products it cannot currently manufacture.

The pharmaceutical sector, which is of both economic and strategic importance for our country as well as for the rest of the world, is increasingly emphasizing and expanding the role of biotechnological drugs. In this era where countries like South Korea, India, and Argentina have developed their biopharmaceutical industries by creating regulatory frameworks that suit their specific conditions, it is imperative for the well-established and robust Turkish pharmaceutical industry to keep pace with global transformation and achieve success in the field of biotechnological drugs. In this context, just like in the defense industry, it is important for the development and production of biotechnological drugs to be prioritized in line with our national interests. IEIS is striving to transform into an industry that develops, produces high-value conventional products and biotechnological drugs and increase its export shares with all its efforts.

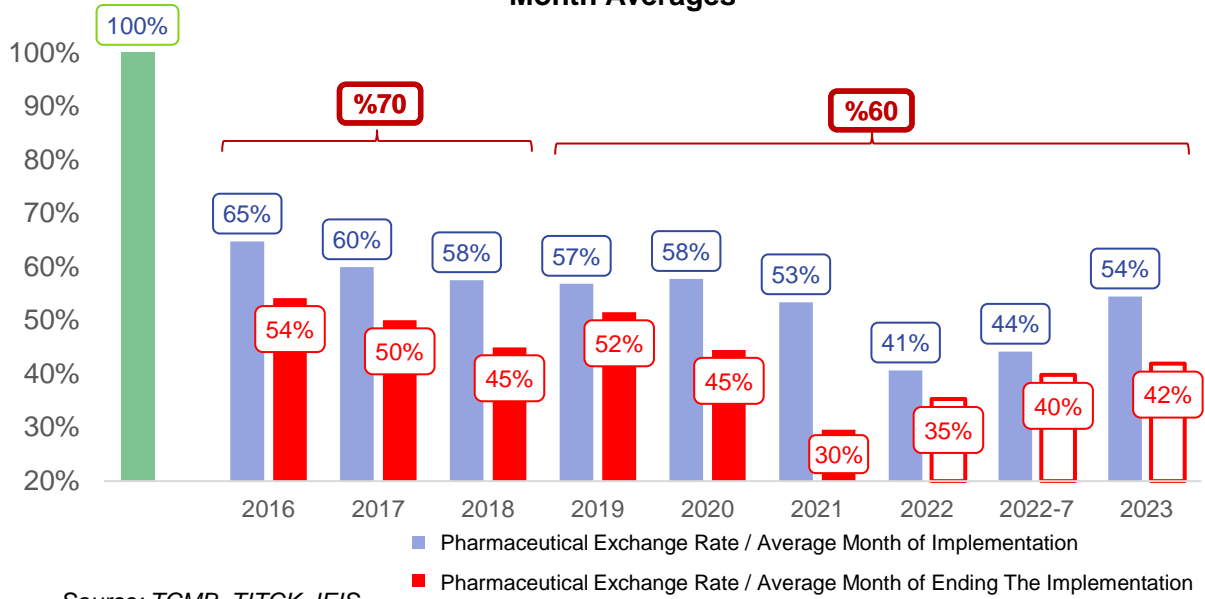
In the coming period, it is of great importance to establish a roadmap in line with our national pharmaceutical strategies and sustainable development goals for localization and indigenization policies in drug production in our country, as stated in all our high-level strategy documents and as expressed in the ongoing preparations for the 12th Development Plan.

The significant increase in the current market exchange rate since the fourth quarter of 2021 has led to a high discrepancy between the announced exchange rate for drugs in the existing practice and the actual Euro value in the market.

According to the regulations implemented in 2016, the pharmaceutical exchange rate (Periodic Euro Value) was determined as 70% of the average Euro rate from the previous year, but in 2019, it was reduced to 60%. The implementation of the pharmaceutical exchange rate in the second half of February and its determination once a year, leaving the sector unprotected against exchange rate fluctuations, puts an increasing burden on the industry each year.

As seen in the graph that shows the ratio of the drug exchange rate to the average rate of the month in which it was implemented and the average rate of the month it ended, the industry never actually reached the aforementioned ratios neither during the period when the 70% rate was applied nor during the period when the 60% rate was applied.

Chart 53- Pharmaceutical Exchange Rate to Application Beginning and Ending Month Averages



The fact that the current average Euro exchange rate corresponds to only 42% of the pharmaceutical exchange rate set for 2023 (TRY 10,7577) is an indicator of the significant challenges the industry will face throughout the year.

In this context, abandoning the price policy focused on fiscal discipline and adopting a more dynamic approach by updating the pharmaceutical exchange rate multiple times a year without delay emerge as priority steps to protect and accelerate the development of our pharmaceutical industry.

The pharmaceutical industry requires effective support from our public authorities. While our industry has made significant investments with the physical investment incentives provided so far, the public incentive system, which mainly relies on tax reductions and exemptions, is not sufficient for our industry. Especially in the field of biosimilar products, which require large-scale and continuous investments, there is a need to increase the number and amount of cash financial support and introduce additional incentives such as low-interest credit support to encourage investments. Removing barriers to the rapid and safe market entry of products is of great importance for the industry.

We know that we need to allocate our energy to the topics such as biopharmaceutical and biosimilar drugs, gene and cell technologies, qualified R&D activities, domestic molecule development, increasing value-added exports, and even areas like data utilization and digitization in the pharmaceutical sector. We believe that there are no obstacles for our industry to become a globally competitive industry that produces and exports more with the right policies, and we continue to work with all our might.



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