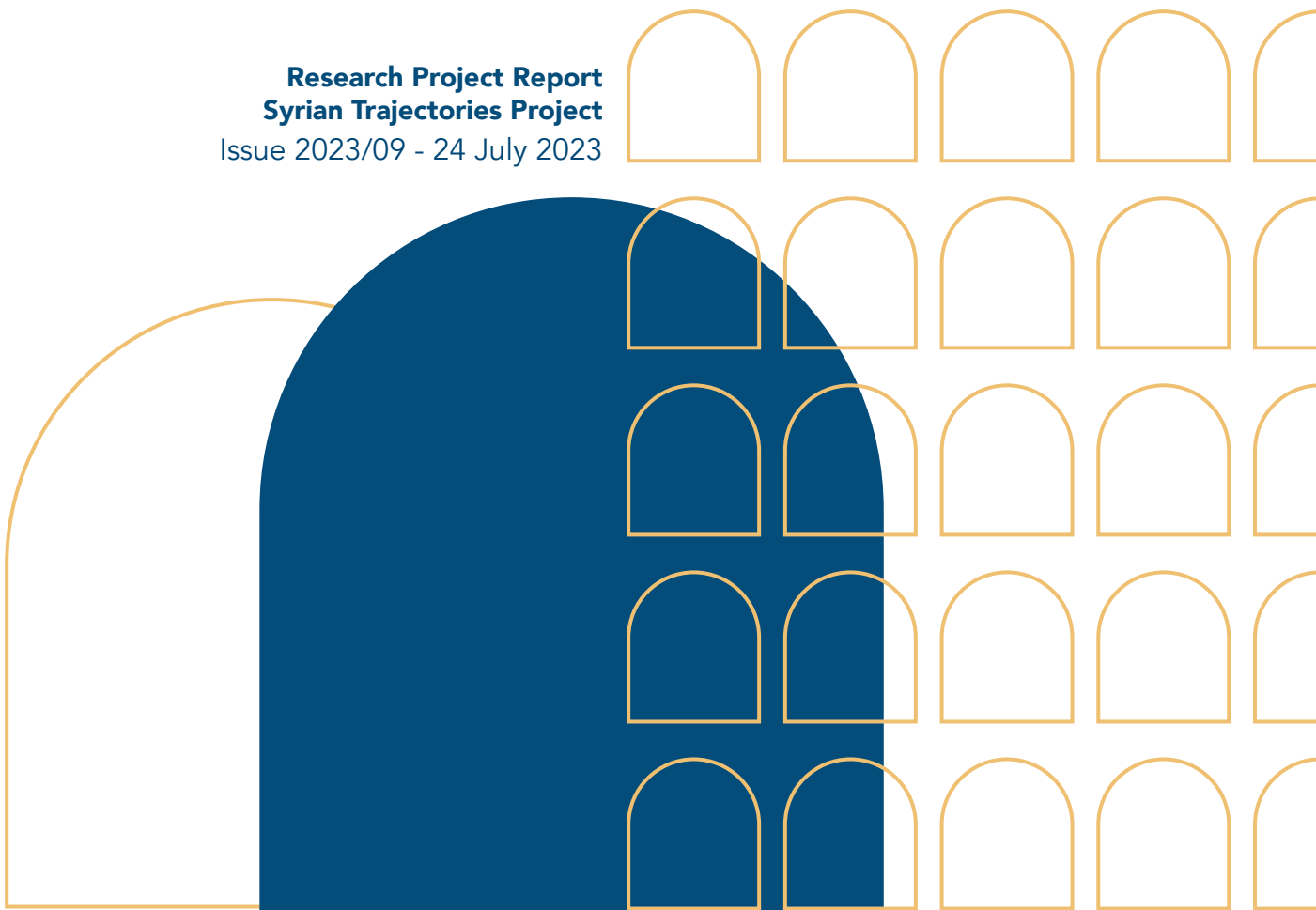


# Syria's Pharmaceutical Industry: Challenges and Impacts

Mada Slim

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# Syria's Pharmaceutical Industry: Challenges and Impacts

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# Table of Contents

<b>Executive summary</b>	<b>5</b>
<b>Introduction</b>	<b>6</b>
<b>1. Overview of the Syrian Pharmaceutical Industry</b>	<b>7</b>
<b>2. The Impacts of the War on the Industry</b>	<b>8</b>
<b>3. Intertwined Challenges</b>	<b>9</b>
3.1 Domestic Challenges	9
3.2 External Challenges	11
<b>4. The impact on the Population</b>	<b>12</b>
<b>5. The Intersection Between the Pharmaceutical Industry and Illicit Drugs</b>	<b>14</b>
<b>Conclusion</b>	<b>15</b>

## Executive summary

Before 2011 the Syrian pharmaceutical industry could boast of a distinguished position among those of the Arab nations. It was propelled by a thriving private sector that facilitated the provision of affordable services with acceptable quality. Nevertheless, the outbreak of violent conflict in 2011 inflicted severe devastation on the industry, leading to a precipitous decline in its capacity notwithstanding an apparent rise in numbers of licensed plants.

The challenges faced by the Syrian pharmaceutical industry since 2011 can be broadly categorised as caused by domestic or external factors. Domestically, insufficient government support, devaluation and limited energy resources have disrupted production leading to a decline in output. Additionally, a loss of skilled workers has further strained the stability of the industry. Externally, economic sanctions have constituted significant obstacles making it difficult to import raw materials, to procure essential packaging materials and to access vital machine parts. Furthermore, a decline in export opportunities and global dynamics such as increased raw material prices and freight rates have compounded the challenges facing the industry.

Consequently, the impact of these challenges has been profound and has led to a surge in the price of medicines and shortages of drugs both locally produced and imported. A drop in the quality of domestically manufactured medicines has raised concerns with reports of side-effects and impurities, while reliance on cheaper imports from Asian countries has added to worries about effectiveness and safety. Citizens now face difficulties in accessing affordable high-quality medicine, leading them to resort to alternative remedies or to seek support in the form of free medicines from NGOs and international organisations. The scarcity of essential medications means difficult choices have to be made between sustenance and unaffordable pharmaceuticals, leading some people to experiment with traditional medicine or even illicit substances as alternatives.

Although rumours persist regarding a potential involvement of the Syrian pharmaceutical industry in the production of illicit drugs, particularly Captagon, the little concrete evidence substantiating widespread production remains elusive.

## Introduction

The pharmaceutical industry in Syria was once a leading producer of medicines in the Arab world, with Syria being self-sufficient. By 2010, the private sector had taken the lead with 70 licensed laboratories<sup>1</sup> satisfying 91% of local medicine requirements.<sup>2</sup> Despite pre-2011 challenges like inadequate infrastructure and heavy reliance on imports, the industry made significant contributions to the economy. It saved millions on imports of foreign medicine and employed over 17,000 workers.<sup>3</sup>

The ongoing conflict which erupted in 2011 has inflicted substantial damage on the industry's infrastructure and production capability. Numerous pharmaceutical facilities in Syria have been destroyed or looted, rendering many of them non-functional. Although there was an increase in the number of licensed pharmaceutical plants from 73 in 2011 to 97 in 2020,<sup>4</sup> it is challenging to determine the actual number of plants operating. Some previously destroyed plants have managed to resume operations in new locations, but there is uncertainty regarding their production capacities. It is possible that some plants are operating below full capacity or have ceased production entirely, which further complicates the availability of medicines. Furthermore, imports of high-quality medicines have decreased and there is a lack of effective monitoring of medicine entering the country. The deterioration in the pharmaceutical sector's ability to offer affordable high-quality medicines has accelerated the transition of Syria's healthcare model from a public-oriented system to a corrupt profit-driven privatised one. As a result, access to medication is now primarily restricted to a privileged minority who can afford the costly services provided by private facilities. This shift has widened the healthcare gap, leaving a significant portion of the population without adequate access to essential medicines and exacerbating inequality in healthcare provision.

Numerous works, mostly in the form of newspaper articles and blogs, have discussed the persistent rise in medicine prices,<sup>5</sup> and the diverse factors contributing to the decline of the Syrian pharmaceutical industry. They cite government sources, prominent actors and the concerns of the people.<sup>6</sup> Nonetheless, a comprehensive study that explores the combined effect of these factors on the Syrian pharmaceutical industry remains lacking. While one study attempted to address this issue in 2014,<sup>7</sup> it was limited to the northwest, which was under the control of various opposition factions. The present paper particularly focuses on regime-held areas, where the primary production of medicine in Syria continues to take place, and undertakes a thorough investigation of the interlinked factors that have contributed to the decline of the industry. It aims to provide a comprehensive understanding of the transformations and challenges facing the industry and to shed light on the intricate fabric of factors that has shaped its trajectory.

The paper attempts to answer the following questions. What are the challenges facing the pharmaceutical industry in Syria today? What is the impact on the population? Is there any link between the pharmaceutical industry and illicit drug production? It answers these questions by drawing on official data, media

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1 Central Bureau of Statistics – Chapter 12 Health, <http://bit.ly/422Dj24>

2 Dirar Kutaini, "Pharmaceutical Industry in Syria," *Journal of Medicine and Life*, Vol. 3, No.3, July-September 2010, pp. 348-350, <https://bit.ly/42LGRp0>

3 Ibid.

4 Central Bureau of Statistics – Chapter 12 Health.

5 Adnan Abd al-Razaq, "Syria: a Jump in the Prices of Medicines and Treatment" (in Arabic), *al-Araby*, 13 January 2023, <https://bit.ly/3pXKc6Z>; Syria TV, "By 50 Percent. The Government of the Syrian Regime Raises the Prices of Medicines" (in Arabic), 17 January 2023, <https://bit.ly/3Q6mVKQ>

6 Ziad Ghisn, "How Economic Sanctions Negatively Affect the Health Sector in Syria: a Case Study of the Pharmaceutical Industry," *Conflict Research Programme Blog*, 16 April 2020, <http://bit.ly/3LpleE3>; Al-Jumhuriya, "Components of the Drug Crisis in Syria" (in Arabic), 5 June 2023, <https://bit.ly/3pR7bAK>

7 Abdullah Hamada, "The Syrian Crisis: Repercussions on the Pharmaceutical Industry: Analytical Study," *Journal of Academic Research and Studies*, Volume 6, Number 10, May 2014, pp.74- 77,

statements by government officials and from institutions actively involved in the pharmaceutical sector, and 21 individual interviews with key stakeholders, including plant owners, pharmaceutical warehouse management staff, pharmacists and ordinary civilians. The paper aims to illustrate the consequences of the destruction and weakening of Syria's pharmaceutical industry in areas under government control. Specifically, it focuses on the implications in terms of the availability of essential medicines to the population and healthcare institutions.

The paper is structured as follows. The first section gives an overview of the pharmaceutical industry in Syria both before and after the start of the conflict, and the second section describes the factors that led to the decline of the industry. Next, the impact of the deterioration of the sector on the population is examined. Then, the intersection between the industry and illicit drug production is investigated. Finally, the brief concludes by summarising the key findings.

## 1. Overview of the Syrian Pharmaceutical Industry

Before 2011, Syria built a pharmaceutical industry that made it nearly self-sufficient. The industry started with two private companies licensed by the Ministry of Health: al-Shahba in 1947 and Asia in 1956. In addition, the Arab medical company Thameco was established in 1956.<sup>8</sup> It was nationalised by Decree 38 of 1970 and the Dimas company was affiliated with the Ministry of Defence in 1969. The production of the two public companies did not exceed 6% of the needs of the Syrian market and the remaining medicines needed were imported.<sup>9</sup>

The government encouraged private sector involvement in the pharmaceutical industry in 1987 and it invested in new plants and laboratories under the supervision of the Ministry of Health. Collaborating with international organisations and laboratories, the Ministry aimed to modernise the industry through legislation and regulation.<sup>10</sup> This included Good Manufacturing Practice (GMP) regulations, which were unknown in Syria before 1988. However, they were commonly used after that. A series of ISO standards on quality management systems (ISO 900),<sup>11</sup> manufacturing of pharmaceutical products, storage conditions and environmental management (ISO 1400) were also implemented.<sup>12</sup> By 2010, the private sector dominated the production of medicine in Syria, with 70 licensed laboratories and 91% of local medicine needs covered, according to the Central Bureau of Statistics.<sup>13</sup>

However, the Syrian pharmaceutical industry faced several challenges, such as inadequate infrastructure and limited investment in research and development.<sup>14</sup> Moreover, the industry heavily relied on imports of essential pharmaceutical ingredients, making it susceptible to supply chain disruptions and price fluctuations.<sup>15</sup> However, the industry managed to save Syria millions of dollars in foreign medicine imports, and it was one of the most important private manufacturing industry investments in the 2000s.<sup>16</sup>

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8 Thameco, "Infrastructure" (in Arabic), <http://bit.ly/42lqhfJ>

9 Dirar Kutaini, "Pharmaceutical Industry in Syria."

10 Ibid.

11 The International Organisation for Standardisation. Meeting ISO pharmaceutical industry standards allows a drug company to demonstrate that a specific set of criteria for Quality Management Systems (QMS) has been established, maintained and supported by executive management.

12 Dirar Kutaini, "Pharmaceutical Industry in Syria."

13 Central Bureau of Statistics – Chapter 12 Health

14 UNIDO, "Pharmaceutical Industry Development in Syria," 2010, <https://bit.ly/3oWLO4>

15 WHO, "Essential Medicines and Health Products in Syria," 2018. <http://bit.ly/3pa2HnL>

16 Joseph Daher, "Syria Manufacturing Sector: the Model of Economic Recovery in Question," Research project report, (Florence, Wartime and Post-Conflict in Syria project (WPCS), EUI MEDirections, May 2019), <http://bit.ly/3LhOjBs>

It employed over 17,000 workers and technicians and produced USD 350 million worth of medicines and 380 well-manufactured products.<sup>17</sup> In addition, the Arab Union of Manufacturers of Pharmaceuticals and Medical Appliances (AUPAM) ranked Syria the second medicine exporter in the Arab world after Jordan. In 2011 it exported medicines worth USD 210 million while the latter recorded USD 370 million.<sup>18</sup>

Moreover, public health facilities, hospitals, and polyclinics provided affordable services, including cancer treatment and medication, with a large proportion of medicine distributed free through public hospitals.<sup>19</sup> However, the pharmaceutical industry suffered significant losses after 2011, leading to a decline that created challenges for the population and health institutions in obtaining necessary medicines. As a result, Syrian citizens now must choose between spending their incomes on food or medicine that they cannot afford.

## 2. The Impacts of the War on the Industry

Aleppo, Damascus and Homs governorates were home to most of the pharmaceutical plants before 2011. When the Syrian uprising turned into a violent conflict, the pharmaceutical industry suffered significant damage to its infrastructure and production processes, leading to a collapse in its capacity. Pharmaceutical facilities and warehouses were destroyed, looted and dismantled, and numerous pharmacies became inoperable. While the exact number of partially or entirely out-of-service facilities is difficult to determine, the head of the Syrian Pharmacists Syndicate, Dr. Mahmoud al-Hassan, reported in March 2018 that 24 plants and 5,000 pharmacies were out of service.<sup>20</sup>

Despite an increase in the number of licensed pharmaceutical plants from 73 to 97 in 2020, and some previously destroyed plants resuming their operations in new locations, the actual number of plants operating is difficult to verify, but it is clear that some operate below full capacity or have halted production altogether.

**Table 1: Licensed plants between 2011 and 2020 in areas controlled by the Syrian government.**

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number of licensed plants	73	75	76	76	82	67	86	92	96	97

Source: Central Bureau of Statistics – Chapter 12 Health.

For instance, there were 86 licensed pharmaceutical plants in Syria in 2017 (see Table 1). However, Dr. Zuhair Fadloun,<sup>21</sup> former director of the Scientific Council for Pharmaceutical Industries and general manager of the Dimas Company, stated that “the number of plants in actual production is 73, of which 5 plants produce their products in other pharmaceutical plants, due to an inability to return to the old production lines or because these lines are currently being equipped.”<sup>22</sup> This suggests that the number of plants operating should be 68.

17 Dirar Kutaini, “Pharmaceutical Industry in Syria.”

18 Younes AlKarim, “In Numbers, the Fake ‘Free’ Syrian Medicine Trick” (in Arabic), *Enab Baladi*, 13 March 2016, <http://bit.ly/3HxWOqP>

19 WHO, “Measuring Transparency to Improve Good Governance in the Public Pharmaceutical Sector: Syrian Arab Republic,” 2011, <http://bit.ly/3pa9IVD>

20 Mohammad Najm, “Syrian Pharmacists Syndicate: 5,000 pharmacies and 24 pharmaceutical laboratories have become out of service due to the war” (in Arabic), *Sputnik Arabic*, 29 March 2018, <http://bit.ly/3HETPgp>

21 In 2021, Dr. Zuhair Fadloun, who had held the post of director of the Institute 3000 at the Scientific Studies and Research Centre, passed away due to complications arising from Covid-19. It is noteworthy that he was subjected to sanctions by the European Union during his tenure because the centre was accused of having a link with the chemical weapons industry.

22 Majesty New, “Dr. Zuhair Fadloun: An Honest Talk About the Pharmacological Situation in Syria” (in Arabic), 24 October 2017, <http://bit.ly/44gqPp0>



Representatives of the Syrian government often claim the increasing number of plants is sufficient to meet market demand. However, some of these plants may not be operational, as a pharmaceutical warehouse representative in Latakia explained: “The number of plants that continues to increase is illogical ... some small ones open to get support provided for plants, especially for fuel, and after they obtain it, they stop.” The law requires plants to produce pharmaceuticals within two years of licensing or risk losing their license.<sup>23</sup>

### 3. Intertwined Challenges

Since 2011, manufacturers and warehouse owners engaged in Syria’s pharmaceutical industry have grappled with myriad difficulties, the consequences of which have reverberated throughout the sector and affected its stability and prospects for growth. On closer examination, these difficulties can be broadly classified in two interconnected categories: domestic or external.

#### 3.1 Domestic Challenges

The pharmaceutical sector in Syria has encountered numerous domestic challenges that have disrupted production leading to a decline in output. One of the main challenges encountered after 2011 is insufficient support from the government, which is compounded by continual depreciation of the Syrian pound and rising production costs. The devaluation of the currency has created difficulties for manufacturers in acquiring USDs, which are crucial to purchase substances and raw materials. The limited availability of foreign currency has therefore hindered the production process and contributed to the overall challenges faced by the industry.

Several months after the start of the Syrian uprising, the owners of pharmaceutical plants signed an agreement that included conditions, the most important of which were that the pharmaceutical plants would not increase any prices during the crisis, that no worker would be laid off and that production and distribution would be preserved as much as possible. However, their commitment to this agreement remained for less than 22 months.<sup>24</sup> While many pharmaceutical plants managed to sustain their operations during the first two years of the Syrian conflict by using existing stocks of raw materials and maintaining contracts with suppliers, the situation gradually worsened after 2013. Manufacturers faced with dwindling profits reduced or suspended production<sup>25</sup> to reduce their losses and to exert continual pressure on the government to increase medicine prices.

Several laws have been introduced in Syria to support manufacturing industries, including the pharmaceutical sector. One of these, which was passed in 2021 and extended twice until July 2023,<sup>26</sup> exempts production and raw materials used in the human pharmaceutical industry from customs duties and taxes. In addition, there is a previous law that facilitates financing of imports of supplies for the pharmaceutical industry by using the exchange rate set by the Central Bank of Syria (CBoS). Local pharmaceutical plants are required to submit the relevant invoices. However, the process of securing financing for imports often involves delays, which result in increased costs due to the rising exchange rate.<sup>27</sup>

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23 Interview with a pharmaceutical warehouse representative in Latakia, 22 April 2023.

24 Syrian Masah, “Ministry of Economy and Ministry of Health are Studying Mechanisms to Facilitate the Import of Raw Materials for the Pharmaceutical Industry” (in Arabic), 30 May 2013, <https://bit.ly/3XV0BFE>

25 Al-Watan, “Sincere Talks About Syrian Medicine: 80 Percent of it is Manufactured Locally and at Low Prices” (in Arabic), 24 October 2017, <https://bit.ly/42LTQqN>

26 SANA, “In Support of the Pharmaceutical Sector, President al-Assad Issues a Decree Extending the Exemption of Production Requirements and Raw Materials Used in the Manufacture of Human Medicines from Customs Duties and Taxes” (in Arabic), 21 July 2021, <http://bit.ly/3LlgDmC>; Ministry of Internal Trade and Consumer Protection, “President al-Assad Issues a Decree Extending the Exemption of Production Requirements and Raw Materials Used in the Manufacture of Human Medicines From Customs Duties And Taxes” (in Arabic), 21 July 2022, <http://bit.ly/44F7cqV>

27 Tishreen, “After the Increase in Drug Prices, Continuation of Production Is More Merciful to the Citizen Than Importing” (in Arabic), 8 July 2021, <http://bit.ly/3HqgsFn>

Furthermore, the CBoS support only covers the purchase of raw materials and imported packaging materials, but not the additional costs of locally produced packaging materials that have seen successive increases in production costs.<sup>28</sup> In 2015, the Ministry of Health allowed or turned a blind eye to manufacturers releasing medicines without carton packaging, albeit unofficially and for a brief period. This was under the condition that they would supply enough medicine for the local market. However, this was revoked several months later as the manufacturers could not continue providing medicines at low prices and with insufficient profits. According to interviews, packaging is a necessity and selling medicines without it undermines their effectiveness and violates the principles of good pharmaceutical manufacturing.

The scarcity of energy resources and subsequent price surges have presented pharmaceutical manufacturers in Syria with another significant challenge. Although the government has introduced regulations to mitigate this, the support provided is inadequate. Despite the availability of a 'golden power line' for economic activities priced at SYP 450 per watt per hour (equivalent to USD 0.16 at the official exchange rate of 2,800 SYP/USD in June 2022),<sup>29</sup> it remains costly and frequently unavailable in many areas. Moreover, there are frequent power interruptions, particularly during the night. As a result, some manufacturers resort to using electricity generators.

The government provides manufacturers with a given quantity of oil derivatives at set or subsidised prices. Manufacturers receive fuel oil at a set price of SYP 4,443,993 per ton (equivalent to USD 680 at the official exchange rate of 6532 SYP/USD in June 2023)<sup>30</sup> and a set amount of gas oil for each industrial facility according to its 'production capacity.' Capacity is calculated based on the number of machines and pieces of equipment.<sup>31</sup> However, the amount provided is often insufficient and covers only a small portion of the plant's energy needs, typically ranging from 10% to 30%, according to a former production manager in Damascus.<sup>32</sup>

The labour force in Syria's pharmaceutical industry has undergone significant changes, which have had implications for medicine production and quality. The industry has experienced a loss of skilled workers due to factors such as arrests, fatalities and emigration. As a result, manufacturers have had to replace highly qualified professionals who were previously engaged in supervising the production process with less experienced lower-qualified individuals. It is challenging to determine the size of the current workforce accurately. However, there has been a noticeable increase in the hiring of women<sup>33</sup> and staff with lower qualifications.<sup>34</sup> This shift can be attributed to the migration of men and graduates in search of better opportunities, together with persistently low salaries in the industry. Many have sought employment in the Gulf region and Europe.<sup>35</sup>

Amidst mounting production costs, pharmaceutical manufacturers have found themselves in a tight spot. As they grapple with the challenges posed by increasing overheads, they have been pressuring the government to allow a commensurate increase in medicine prices. Inevitably, this has resulted

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28 Interview with a former production manager in Damascus, 13 February 2023.

29 SP Today, "Raising Electricity Prices in Syria by 100% for Industrialists and Merchants. Warnings of Dire Consequences" (in Arabic), 25 June 2022, <http://bit.ly/44idv3j>

30 Nawar al-Dimashqi, "A Large and Unjustified Increase in the Price of Fuel for the Productive Industrial Sector!" (in Arabic), *Kassioun*, 18 June 2023. <https://bit.ly/46ZpCny>

31 Joseph Daher, "Cuts to Oil Derivative Subsidies: Consequences for Syria," Policy brief,

(Florence: European University Institute, Middle East Directions, Wartime and Post-Conflict in Syria, October 2021), <https://bit.ly/348x0RC>

32 Interview with a former production manager in Damascus, 13 February 2023.

33 This phenomenon transcends the boundaries of the pharmaceutical industry and represents a prevailing societal dynamic in which women have increasingly entered the job market in various sectors, notably in response to detentions and deaths of men and migration-driven shifts.

34 Interview with a production manager in Damascus, 26 April 2023.

35 Interview with a member of staff in a pharmaceutical plant in Homs, 8 April 2023.

in transferring the burden to consumers, who have borne the brunt of a steady escalation in prices. This strategy adopted by the manufacturers seems effective to some extent, as the alternative for the government would be to rely more on importing medicines, which would put more pressure on the state treasury.

### 3.2 External Challenges

The introduction of economic sanctions on Syria has created significant obstacles for the pharmaceutical sector, as it has grappled with the far-reaching effects of restrictions imposed on various industries. These sanctions have had profound consequences and resulted in a range of challenges for the pharmaceutical industry. Importing raw materials has become daunting, with complex banking procedures and difficulties in procuring essential packaging materials and vital machine parts.<sup>36</sup> Furthermore, the decline in export opportunities has further strained the operations of the industry. Global dynamics, such as a surge in raw material prices and increased freight rates, have amplified the production costs faced by pharmaceutical manufacturers.

While the sanctions do not directly target the health sector, their impact on the pharmaceutical industry has been substantial, which has been compounded by the accumulated damage suffered over the past decade.<sup>37</sup> Owners of pharmaceutical businesses face significant difficulties in directly importing essential machines and replacement parts into Syria. The overlapping nature of the sanctions has created uncertainty,<sup>38</sup> leading banks, exporters, transport companies and insurance companies to largely cease operations in Syria.<sup>39</sup> As a result, many companies have resorted to importing materials from countries like India, China and Iran.

However, turning to alternative sources has not been a comprehensive solution due to the financial burden associated with needing dollars for imports and other related costs, and also the global rise in prices of raw materials due to the increase in global freight rates after COVID-19 and the explosion of demand. Despite the exemption of imported raw materials from customs and taxes since 2021,<sup>40</sup> their high prices, shipping costs and the challenges involved in importing them have become substantial burdens for the pharmaceutical industry. Additionally, the need to ship materials through Lebanon, as bringing them in through Damascus airport and Syrian ports proves challenging, further complicates matters. Many shipping companies also require upfront payment.<sup>41</sup>

Restrictions on transactions with the Syrian banking sector have significantly complicated bank transfers. State-owned and private banks, the Syria International Islamic Bank (SIIB) and Cham Bank, have faced sanctions from multiple actors, including the United States and the European Union. Consequently, direct transactions with Syrian banks have become either illegal or highly problematic in many countries, particularly when importing from certain European countries that refuse to engage with Syria directly. Intermediary companies have become crucial in facilitating these transfers, but the situation has been exacerbated by the multiple sanctions regimes in place. These restrictions have also affected the global correspondent bank network, making transfers to neighbouring countries and potential final transfer points increasingly difficult.

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36 Jullanar al-Ali, "Syrian Medicine Enters Intensive Care" (in Arabic), *Sputnik Arabic*, 26 November 2021. <http://bit.ly/3NpXr9V>

37 Ziad Ghisn, "How Economic Sanctions Negatively Affect the Health Sector in Syria: a Case Study of the Pharmaceutical Industry"

38 In his paper "Syria Manufacturing Sector" Joseph Daher provides an example of a German company which in 2019 cancelled a contract to sell a €500,000 machine to a pharmaceutical company in Aleppo, as it feared the potential consequences of new US Caesar sanctions.

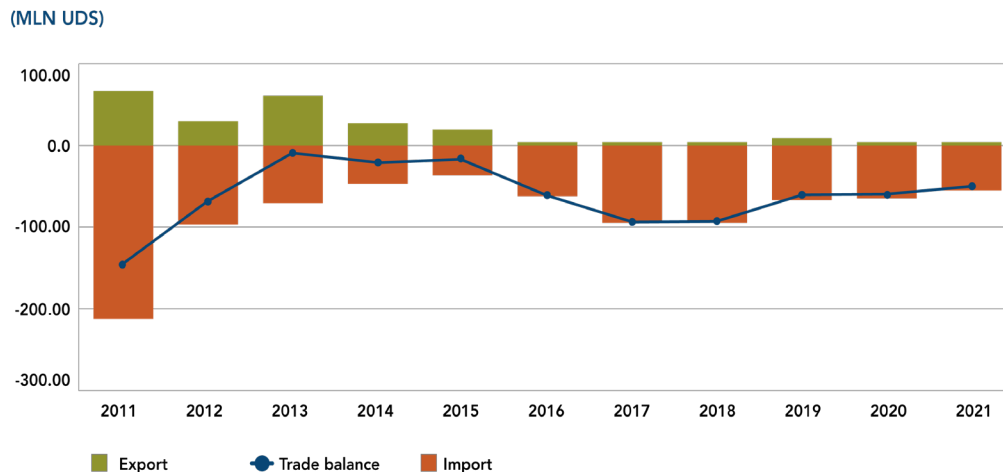
39 Joseph Daher, "Syria Manufacturing Sector: The Model of Economic Recovery in Question"

40 SANA, "In Support of the Pharmaceutical Sector. President al-Assad Issues a Decree Extending the Exemption of Production Requirements and Raw Materials Used in the Manufacture of Human Medicines from Customs Duties and Taxes" (in Arabic), 31 July 2021, <http://bit.ly/41hWTWT>

41 Interview with a plant manager in Damascus, 18 March 2023.

The decline in exports has had a further impact on the pharmaceutical industry. Previously, the industry relied on exporting its products to compensate for any losses in the domestic market. However, exporting has become increasingly challenging due to difficulties with international financial transactions. As a result, the number of countries to which Syrian manufacturers export medicine has significantly decreased, from 56 in 2011 to only 14 in 2019.<sup>42</sup> The Syrian government has imposed a prohibition on medicine exports until the local market is adequately supplied and used this measure to pressure manufacturers to not raise prices. Notably, Syria's primary export destinations for medicine have been Iraq, Lebanon, Sudan, Mauritania and Yemen. Additionally, there are reports suggesting a significant volume of informal exports to Lebanon and Iraq,<sup>43</sup> which could be a factor contributing to the decline in official export levels.

**Figure 1. Pharmaceutical industry imports and exports.**



UN Comtrade Analytics 2023

## 4. The impact on the Population

The pharmaceutical industry has faced numerous challenges leading to a significant surge in prices for both domestically produced and imported medicines. This has resulted in shortages of various medications and a decline in the quality of locally manufactured drugs. Consequently, accessibility of affordable high-quality medicine by the population has become a pressing concern, particularly with the decrease in the provision of medicines through public services. As a result, citizens have turned to alternative means.

Pharmaceutical manufacturers grappling with mounting production costs have found themselves in a precarious position. As a result, they have exerted pressure on the government to allow proportional increases in medicine prices. This has led to a steady escalation in prices, starting with an initial hike in 2013 and gaining momentum over time, as is shown by the timeline. For instance, average prices of medical drugs in pharmacies witnessed a staggering increase of over 130% in 2022. Since the outbreak of the uprising in March 2011, the prices of medicines have risen on average between 1,000% and 1,500%, with certain medications like antibiotics experiencing a surge of approximately 4,000% over the same period.<sup>44</sup>

42 Ahmed Ahmed & Omar Nabee, "An Analytical Study of the Impact of the War in Syria on the Reality of Pharmaceutical Production," *Tishreen University Journal of Economic Sciences*, June 2022, Vol 44, No. 3, pp.537-555.

43 Mayez Obied, "Syrian Medicines Are Sold in Akkar Pharmacies: Health Licenses for the Poor" (in Arabic), *al-Modon*, 17 January 2023, <https://bit.ly/3p4QiCh>; Snack Syrian, "Despite the Loss of Some of Them and Their High Prices, the Smuggling of Syrian Medicines Continues" (in Arabic), 5 November 2020, <https://bit.ly/3qIVyf2>

44 Adnan Abd al-Razaq, "Inflation in Syria Medicines: 130% price increase in 2022"

In addition to rising prices, it is important to note that the availability of medicines on the market is not solely determined by price increases. In some cases, pharmaceutical plants and warehouses intentionally reduce or halt the supply of medicines as a tactic to pressure the government. They resume supplying only after raising the prices. However, even with these price increases, there is no guarantee of absolute availability of locally manufactured medicines, and people continue to suffer from a scarcity of medications.<sup>45</sup> As a result, patients often have no choice but to resort to purchasing imported or smuggled medicines, which are significantly more expensive than national products. Furthermore, there have been reports of citizens noticing official medicine prices being crossed out and rewritten in pen. This suggests two possibilities: either genuine price increases that have not been officially announced or attempts by pharmacies, warehouses and manufacturers to offset potential losses.<sup>46</sup> A pharmacist in Damascus described how warehouses, for instance, use a tactic called 'loading' to make up losses: "Pharmaceutical warehouses offer a small quantity of the missing medicine to pharmacists, who must order less popular items. To obtain the missing medicine, pharmacists may need to request 10% to 50% of another type with a short expiry date or low demand. Sometimes, the medicine is available but lacks price regulation and invoices."<sup>47</sup>

The decline in the effectiveness of locally manufactured medicines has also become a noticeable trend evidenced by numerous complaints in official newspapers and observations by doctors.<sup>48</sup> Reports of side-effects like allergies, urticaria and acne indicate the presence of impurities in the active substances or irregular materials that do not meet good manufacturing standards.<sup>49</sup> To cope with current conditions, many manufacturers have resorted to using cheaper and less pure imported active substances. Additionally, many importers have turned to cheaper sources of medicines from Asian countries like China, India and Iran as more affordable alternatives. However, this change has raised concerns about the lower quality and effectiveness of imported medicines compared to their European counterparts. Reliance on Asian imports as a cost-saving measure has increased since 2018 and is driven by budget constraints and declining revenue experienced by pharmaceutical companies.<sup>50</sup>

Various factors contribute to this decline in quality, including weakened infrastructure affecting manufacturing, storage, and transport. Prolonged power outages and fuel shortages lead to inadequate conditions for proper storage and transport of medicines. Some warehouses and plants extend the storage of medicines to monopolise them, compromising their effectiveness and quality.

A lack of proper control and monitoring by the Ministry of Health, which is responsible for overseeing the entire process,<sup>51</sup> coupled with corrupt practices during inspections, exacerbates the situation.<sup>52</sup> Previously subject to monitoring and quality control, all locally produced medicines in Syria are generic,<sup>53</sup> but the cancellation of most foreign licenses for pharmaceutical plants has led to discontinuation or decreased quality of certain medicines. Plants now function without proper control, leading to corruption in local internal supervision, as was noted by a pharmacist in Latakia.<sup>54</sup>

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45 Enab Baladi, "Raising the Prices of Medicines in Syria by Rates That Reached 80%" (in Arabic), August 2022, <https://bit.ly/3Nr2HJX>; North Press Agency, "Damascus Pharmacists Syndicate: 30 Percent of the Missing Medicines Were Available After Raising Their Prices" (in Arabic), 23 January 2023, <https://bit.ly/46eziu3>

46 Interview with a pharmacist in Damascus, 29 March 2023.

47 Ibid.

48 Interview with a gastroenterologist in Latakia, April 2023.

49 Ibid.

50 Interview with a pharmaceutical warehouse representative in Homs, February 2023.

51 Interview with a warehouse manager in Damascus, April 2023.

52 In an interview with a former pharmaceutical representative in Homs, he mentioned corrupt practices during inspections which were solved on one of the occasions two years ago where he was present by paying SYP 10,000 (equivalent to USD 8 at the official exchange rate of SYP 1,250 per USD in April 2021) for the health directorate staff."

53 Generic medicines are those the original patent of which has expired and which may now be produced by manufacturers other than the original innovator (patent-holding) company.

54 Interview with a pharmacist in Latakia, 19 March 2023.



Before 2011, government health facilities in Syria provided accessible services and medicines, although the quality was not always optimal. However, there has been a significant decline in their ability to meet the medical and medicinal needs of Syrian citizens. Reports indicate that citizens are struggling to obtain medicine from these facilities, even for basic procedures, and often have to purchase medications from external pharmacies due to a lack of supplies. A doctor at Tishreen Public Hospital in Latakia explained that patients are now forced to purchase medicines themselves, including anaesthetics that it is illegal to sell in pharmacies. Private hospitals also purchase a significant portion of their medicines through irregular methods, such as buying smuggled medicines or withdrawing medicines from public hospitals to sell in private ones. Furthermore, private hospitals may use medicines intended for one patient for another patient and charge both patients the full amount, which is not only illegal but also potentially dangerous.<sup>55</sup> Consequently, there is a scarcity of medicines in public hospitals, including ones required for expensive treatments such as autoimmune diseases and cancer, which were previously obtained through government facilities.

Before 2011, Syria grappled with ill-advised medicine use, including excessive use of antibiotics and antidiarrheal medicines, over-prescription of nonsteroidal anti-inflammatory drugs, unwarranted antibiotic treatments of minor respiratory infections and self-medication.<sup>56</sup> However, now as Syrians confront scarcity, inefficacy, and exorbitant prices for crucial medications, they find themselves entangled in the anguish of making profound choices between essential sustenance and unaffordable pharmaceuticals. Consequently, many people are compelled to discontinue or reduce their medications, including ones prescribed by doctors, even when they are potentially life-saving treatments. Seeking respite, some individuals explore alternative avenues like traditional medicine, herbal remedies or even illicit substances.<sup>57</sup> Conversely, others strive to register themselves at healthcare facilities supported by local NGOs or international organisations, where free medicines are made available. Additionally, pharmacies in various cities have established donation boxes, enabling neighbours and friends to contribute unexpired medications for redistribution to those in need.<sup>58</sup>

## 5. The Intersection Between the Pharmaceutical Industry and Illicit Drugs

In the wake of the transformation of Syria since 2011 into a prominent player in narcotics trafficking and production, trading in drugs, particularly Captagon, has become a significant source of foreign currency for the financially struggling state. In this context, there have been several reports suggesting possible exploitation of certain pharmaceutical facilities for the illicit production of drugs, including Captagon.<sup>59</sup> Additionally, there is speculation regarding imports of raw materials, such as theophylline, used in the production of Captagon.<sup>60</sup> The rationale behind this speculation lies in the perception that pharmaceutical factories have relatively easier access to imports of chemical substances than other industries, and their involvement in illicit drug production can be concealed more easily.

Gaining access to reliable information regarding the pharmaceutical industry's involvement in illicit drug production is inherently challenging. Those engaged in such activities have a vested interest in maintaining secrecy. Consequently, the notion of widespread involvement of the pharmaceutical

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55 Interview with a doctor at Tishreen Public Hospital, 7 April 2023.

56 Reginald Sequeira & Sameer Otoom, "Health Care Providers' Perceptions of the Problems and Causes of Irrational Use of Drugs in Two Middle East Countries," *The International Journal of Clinical Practices*, Volume 60, Issue 5, May 2006, pp. 565-570.

57 COAR, "The Syrian Economy at War: Captagon, Hashish, and The Syrian Narco-State," April 2021, <https://bit.ly/46eQBev>

58 Interview with a pharmacist in Damascus, 3 June 2023; Interview with a pharmacist in Tartous, 3 June 2023.

59 COAR, "The Syrian Economy At War: Captagon, Hashish, And The Syrian Narco-State"; Jörg Diehl, Mohannad al-Najjar & Christoph Reuter, "The Assad Regime Would Not Survive Loss of Captagon Revenues," *Spiegel International*, 21 June 2022. <https://bit.ly/3oZqdUU>; Karam Shaar et al., "Sky High: The Ensuing Narcotics Crisis in MENA and the Role of the Assad Regime," *Observatory of Political and Economic Networks*, 14 June 2023. <https://bit.ly/3Xfdjim>

60 Theophylline is a substance used in the production of other legitimate medicines. It is a bronchodilator that belongs to the class of methylxanthine medications. It is primarily used in the treatment of respiratory conditions such as asthma and chronic obstructive pulmonary disease (COPD).

industry in illicit drug production remains unsupported by sufficient evidence. Considering the risks involved, it is unlikely that a high number of major players in the private sector<sup>61</sup> would jeopardise their established companies by engaging in such dangerous activities. The potential consequences if their involvement were to be discovered could be severe.

It is worth noting that the production of Captagon often occurs in makeshift settings such as metal hangars or vacant villas.<sup>62</sup> In these settings, workers combine chemicals using basic machinery and mixers to manufacture the pills. In fact, Captagon can be produced in rudimentary facilities and does not require advanced equipment or specialised expertise in fields like chemistry.<sup>63</sup> Furthermore, many facilities engaged in Captagon production are designed to be easily relocated, allowing those involved to evade detection.<sup>64</sup> This further supports the view that widespread involvement of pharmaceutical manufacturers in the illicit drug industry is unlikely, even though a few may be involved in facilitating imports or production.

## Conclusion

Since 2011, the pharmaceutical industry in Syria has faced numerous challenges resulting in a decline in its ability to meet the healthcare needs of the population. An absence of state support, soaring energy costs, a shortage of skilled workers and the impact of sanctions have all contributed to a deterioration in the quality and availability of medicines. As a result, prices have escalated and access to essential drugs has become limited, leaving the population vulnerable and forced to seek unsafe alternatives or rely on limited sources of assistance. Furthermore, while there is speculation about Syria's involvement in narcotics production, including of Captagon, and potential exploitation of pharmaceutical facilities, concrete evidence of widespread involvement remains elusive. The presence of mobile facilities and makeshift production sites suggests limited association with the pharmaceutical industry.

Under current conditions, the future of the industry appears grim, and without significant efforts by the Syrian state to address the underlying causes it is expected to continue deteriorating. Superficial measures such as occasional price increases are inadequate to address the deep-rooted challenges. Moreover, the possibility of a continuation or tightening of existing sanctions poses a risk of further worsening the situation for manufacturers, potentially leading to an increase in informal imports and exacerbating the shortage of necessary medicines on the local market. Furthermore, the lack of a comprehensive solution may pressure some industry participants to consider giving up and either migrating or becoming further involved in illicit drug production out of desperation. Such a scenario would not only harm the pharmaceutical industry but also have serious implications for public health.

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61 So far one private plant (Medico in the outskirts of Homs) has been identified as being involved but there are no further details. Firas Laham, "Drugs in Syria: Production – Smuggling – Targets" (in Arabic), *Jusoor for Studies*, 22 January 2022, <https://bit.ly/3PaMOOZ>

62 Ben Hubbard & Hwaida Saad, "On Syria's Ruins, a Drug Empire Flourishes," *The New York Times*, 5 December 2021, <https://nyti.ms/3X6lqxF>

63 Karam Shaar et al., "Sky High: The Ensuing Narcotics Crisis in MENA and the Role of the Assad Regime."

64 Ibid

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