Dimensions
for Strategic Studies

TURKEY'S DEFENSE INDUSTRY: FOUNDATIONS AND FUTURE

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Introduction

The defence industry is a hot topic in Turkish politics. Ankara's latest military actions in Libya, Syria and Nagorno-Karabakh pushed the sector further into the spotlight.

In the Turkish government, the defence industry is used as a tool for political gain by supporting the rhetoric of the AKP-MHP alliance and promoting the 'Turkish dream' where the country is put forward as all-powerful and capable of looking after its own.

The rhetoric of the current administrations shares its roots in the '60s and '70s with the defence industry. The Johnson Letter, Cyprus Campaign and arms embargo convinced the public to support the national arms industry, regardless of political leaning.

The difficulties in the '60s and '70s convinced the public, policymakers and military circles to invest and build up national defence. So, the foundations of today's military-industrial complex in Turkey were laid.

The industry has been transformed several times and finally took its current shape after the failed 15 July coup. Post15- July, Turkish foreign policy relied heavily on military actions and instrumentalised national security.

The most significant event in this era is the purchase of the S400- missiles from Russia, marking a critical turning point for Turkey's foreign policy.

This paper aims to understand the current state of the Turkish defence industry. For this purpose, it is essential first to explore its history, which will explain Turkey's ambition, limitations, and why it is vital for Turkey's foreign policy.

Afterwards, later sections focus on Turkey's take on the defence industry while examining its role at home and abroad.

Finally, to consider the sector's future, this paper will analyse the risks and expected trajectory.

First: THE HISTORY

There are a limited number of works and theories to study the Turkish defence industries from a historical perspective. Moreover, all these studies have different views.

Available academic studies are minimal and lack a comprehensive narrative to explain the changes the industry experienced. Surprisingly, the most comprehensive narration results from works by Arda Mevlütoğlu. Meanwhile, the Directorate of Defense Industries (SSB) has a similar but slightly different perspective.

The main difference is that Directorate focuses on institutions, legal structures and regulations.[1]

Mevlütoğlu, on the other hand, focuses on the abilities and limitations of the industry and hence presents a better picture of the industry and the changes it experienced. Finally, he exceeds the Directorate's classification and better explains the developments after 1985 regulations.[2]

For this purpose, in this work, Arda Mevlütoğlu's perspective is the primary source alongside other studies since it is more rational and comprehensive.

1. LATE OTTOMAN EMPIRE

Before 1923, the defence industry of the late Ottoman Empire was far from adequate. The local sector barely produced shells, projectiles, other basic ammunitions and performed basic repairs.[3]

(1) İsmail Demir, Transformation of the Turkish Defense Industry: The Story and Rationale of the Great Rise, in Insight Turkey Volume 22 No 3, SETA Vakfı Publications, September 2020.

(2) Arda Mevlütoğlu, An Assessment of Turkish Defence Industry, Osservatiora Turchia, CeSPI, https://www.cespi.it/sites/default/files/osservatori/allegati/brief_27_-_arda_assessment_on_turkish_defenceindustry.pdf.

(3) Mesut Uyar and Edward J. Erickson, Osmanlı Askeri Tarihi, İş Bankası Publising, March 2020.

Having missed the rapid industrialisation of Europe, the Ottoman economy lacked the means to develop such an industry, and it was nearly impossible to find a healthy modern industrial sector in any field other than defence.

Nevertheless, the shock of the Balkan Wars pushed Ottoman Empire to take action and develop a more modern and capable Armed Forces. For this purpose, foundations were established to collect donations from the public and officers. These efforts enjoyed modest successes as the Ottoman Empire had territorial anxiety and focused on arms purchases to save the day.[4]

2. THE YOUNG REPUBLIC

Turkey inherited a poor structure from the late Ottoman era and only managed to survive in military campaigns on all fronts thanks to the arms imports and purchases from other countries. In the Young Republic, the most common theme was the existence of small and medium-sized workshops led by talented entrepreneurs.

The first arms factory of the Young Republic opened in Istanbul, by Şakir Zümre, in 1925.[5] A veteran and half-brother of famous Enver Paşa, opened his factory in the '30s to produce pistols, mortar ammunition and other minor weapons.[6]

The Navy invested in Gölcük to build a pool to repair TCG Yavuz in the sea. The ship famously led the Ottoman Empire into the First World War alongside Germany and Austria-Hungary. The pool Project laid down the institutions of Gölcük Base, the most extensive base of the Turkish Navy currently.[7] In the air, Young Republic had Vecchi Hürkuş. Hürkuş's investments had their best days in the '30s.[8]

(4) Ibid

(5) Arda Mevlütoğlu, Türk Savunma Sanayiinin Dànüşümü, 17 April 2020. https://www.perspektif.online/turk-savunma-sanayiinin-donusumu/

(6) Ibid

(7) İsmail Demir, Transformation of the Turkish Defense Industry: The Story and Rationale of the Great Rise, in Insight Turkey Volume 22 No 3, SETA Vakfı Publications, September 2020.

(8) Ibid.

In this era, investments in the defence industries came from entrepreneurial perspectives and talents. However, these investments were humble in both quality and quantity. Consequently, these investments failed to stay alive beyond the Second World War and had little or no impact on Turkey's later defence industry experiences.[9]

The Second World War had a very different profile than past wars. The interwar period witnessed rapid advances in military technology. Thus, the investments in Turkey became obsolete and out of date by the outbreak of the war. And at the end, technologies such as jet fighters, aircraft carriers and radar were the norm, putting centuries between the Turkish and defence industry and its contemporaries.

3. POST-WWII: ACTIVE CONSUMER

With the outbreak of the Second World War, it was soon understood that the equipment and doctrines of the Turkish Armed Forces were inadequate and out of date. During the war, the gap widened as the countries achieved technological advances.

These differences between the availability and reality shaped the future of the Turkish defence industry. Imports and donations began during wartime and contributed to Turkey's foreign policy, aiming to balance each side. After the war, imports and donations only increased.[10]

(9) Arda Mevlütoğlu, Türk Savunma Sanayiinin Dànüşümü, 17 April 2020. https://www.perspektif.online/turk-savunma-sanayiinin-donusumu/

(10) Ismail Demir, Transformation of the Turkish Defense Industry: The Story and Rationale of the Great Rise, in Insight Turkey Volume 22 No 3, SETA Vakfı Publications, September 2020.

On 12 July 1947, Turkey signed a military aid agreement with the United States.[11] On 6 April 1949, Turkey was included in the Mutual Defense Act, designed to help European countries militarily, by President Truman.[12] Turkey joined NATO in 1952 to protect its territories against Soviet threats. As a result, the Turkish military became a consumer of the US defence market.[13]

The Turkish defence industry, at this point, required serious investment to achieve world standards in production in a time when the country lacked the capital needed for development purposes.[14] In addition to financial reasons, defence industry projects now required more complex expertise and production processes: aircraft carriers, jet fighters, radar technology and hydroacoustic. By the end of the Second World War, all the contemporary technologies were already "a system of systems" by the end of the Second World War. These investments required a qualified class of engineers, and not it was the end of the way for the enterprises led by brilliant investors.[15]

However, modernisation came at a price. Arms imported or donated under the collective defence perspective had strict limitations about where and when it could be used. The Johnson Letter, sent to İnönü in 1964, marked the beginning of a new era.[16] If Turkey pursued a different regional role than the US crafted, Ankara would have to invest in defence. It was now a matter of independence.

(11) Kemal Karpat. Studies on Turkish Politics and Society. Netherlands: Brill, 2004.

(12) Ibid.

(13) Ibid.

(14) Arda Mevlütoğlu, Commentary on Assessing the Turkish Defense Industry: Structural Issues and Major Challenges. In Defence Studies, Volume 17 No: 2017 ,3.

(15) Ibid.

(16)Kemal Karpat. Studies on Turkish Politics and Society. Netherlands: Brill, 2004.

4. FOUNDATIONS :1985-1964

The Johnson Letter changed the fate of the Turkish defence industry. The Turkish Army failed to launch a landing campaign into Cyprus in 1964, which quickly acted and invested in protecting itself against future operations.

Today, MKE (Machine and Chemistry Industry) began producing G3 infantry rifles under license, and these weapons meet the needs of the Turkish Army as the most common infantry rifle in the ranks.[17]

The Navy witnessed the most significant steps towards nationalisation in defence industries. Between 1963 and 1974, the Turkish Navy prepared for the imminent landing of Cyprus. Landing ships were built in Turkey domestically. These vessels were constructed thanks to the existing shipbuilding industry in Istanbul primarily, which made passenger ferries in İstinye, Taşkızak and Haliç.[18]

The first indigenous warships were built in this era: TCG Berk and TCG Peyk. The design of these vessels was based on the US-made Claud Jones class destroyers. A donation campaign was launched for the public to finance these ships.

Indeed, the Turkish Army owed so much to its civilian support to enhance and equip the armed forces. After the Balkan Wars, the Ottoman Navy Society was founded (Muavenet-i Millie) and raised money to purchase modern warships to replace the outdated and outmatched Ottoman Navy.[19]

(17) İsmail Demir, Transformation of the Turkish Defense Industry: The Story and Rationale of the Great Rise, in Insight Turkey Volume 22 No 3, SETA Vakfı Publications, September 2020.

(18) Arda Mevlütoğlu, Commentary on Assessing the Turkish Defense Industry: Structural Issues and Major Challenges. In Defence Studies, Volume 17 No: 2017 ,3.

(19) Mehmet Beşikçi, Ottoman Mobilization of Manpower in the First World War, Brill: 2012.

In the 1970s, similar foundations were established to support the armed forces. The Air Force Foundation, Naval Forces Foundation and Armed Forces Foundation were founded in the early '70s.[20] Additionally, the Turkish Armed Forces Foundation established ASELSAN. These foundations laid the base of the modern Turkish Defense Industry. ASELSAN is still primarily owned by the foundation and is Turkey's largest defence company.[21]

In the same era, Turkish Aerospace Industries (TUSAŞ), HAVELSAN, ASPİLSAN and other initiatives were established, sharing the same perspective.

Finally, the arms embargo officially imposed on Turkey between 1975 and 1978 convinced the Turkish public and politicians to back the already growing nationalistic tendencies within Armed Forces to build an indigenous defence industry, capable of providing Armed Forces with its needs to make it a truly independent force, to be able to act independently in its region.[22]

However, in this era, the defence industry proved itself incapable for various reasons. First, the industry lacked private enterprises and investments. Second, military officials enjoyed complete control over Turkey's defence industry and trajectory. Finally, the lack of coordination and a comprehensive strategy was visible. With this in mind, in 1985, Defense Industry Development and Support Directorate (SAGEB) were founded, and a new chapter began for the Turkish defence industry.[23]

(20) İsmail Demir, Transformation of the Turkish Defense Industry: The Story and Rationale of the Great Rise, in Insight Turkey Volume 22 No 3, SETA Vakfı Publications, September 2020.

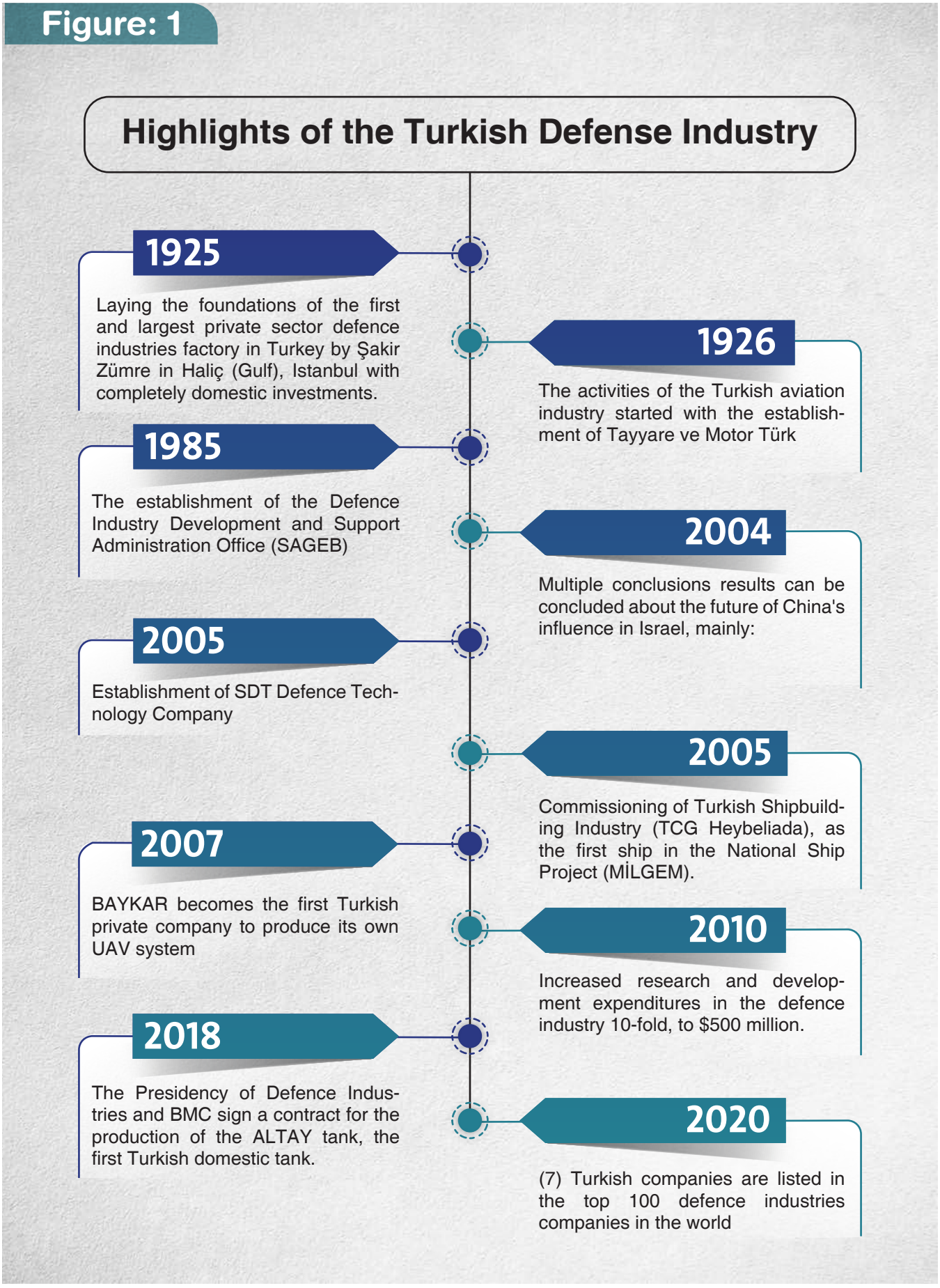
(21) Turkish Armed Forces Foundation, History: https://www.tskgv.org.tr/en/about-us/history

(22) Kemal Karpat, Türk Dış Politikası Tarihi, Timaş Publishing, 2015.

(23) İsmail Demir, Transformation of the Turkish Defense Industry: The Story and Rationale of the Great Rise, in Insight Turkey Volume 22 No 3, SETA Vakfı Publications, September 2020.

ASELSAN systems display in the Galbşı district of the Turkish capital, Ankara, November 2020 ,12 (AA Photo)

Figure: 1


Highlights of the Turkish Defense Industry
1925
Laying the foundations of the first and largest private sector defence industries factory in Turkey by Şakir Zümre in Haliç (Gulf), Istanbul with completely domestic investments.
1926
The activities of the Turkish aviation industry started with the establishment of Tayyare ve Motor Türk
1985
The establishment of the Defence Industry Development and Support Administration Office (SAGEB)
2004
Multiple conclusions results can be concluded about the future of China's influence in Israel, mainly:
2005
Establishment of SDT Defence Technology Company
2005
Commissioning of Turkish Shipbuilding Industry (TCG Heybeliada), as the first ship in the National Ship Project (MİLGEM).
2007
BAYKAR becomes the first Turkish private company to produce its own UAV system
2010
Increased research and development expenditures in the defence industry 10-fold, to $500 million.
2018
The Presidency of Defence Industries and BMC sign a contract for the production of the ALTAY tank, the first Turkish domestic tank.
2020
(7) Turkish companies are listed in the top 100 defence industries companies in the world

5. 2000-1985'S: FIRST STEPS

The Turgut Özal era was a new beginning for Turkey. Özal himself was a strong advocate of free-market and private enterprises. His period witnessed such changes in the Turkish defence industry. The establishment of SAGEB enabled civilian authorities to have a say in the defence industry first time in decades.[24]

At this time, Turkish investors established defence companies or existing companies began their activities in defence industries. Foreign investments and partnerships were encouraged. Also, licensed production was the theme in this era due to better relations with NATO countries and their investments in Turkey.

The F16- project was the star of this era. These jets were assembled in Turkey. As the years progressed, the share of parts produced in Turkey increased and the level of expertise increased.[25] Other than F16-s, other significant projects such as Armored Combat Vehicles, Small Cargo Aircrafts, Beginner Trainer Aircraft and Cougar Helicopters were jointly produced in Turkey with the help of and under the license of foreign companies.[26]

(24) Ibid.

(25) Arda Mevlüto lu, Commentary on Assessing the Turkish Defense Industry: Structural Issues and Major Challenges. In Defence Studies, Volume 17 No: 2017 ,3.

(26) İsmail Demir, Transformation of the Turkish Defense Industry: The Story and Rationale of the Great Rise, in Insight Turkey Volume 22 No 3, SETA Vakfı Publications, September 2020..

According to the Arda Mevlütoğlu, the Turkish defence industry first began conceptualising and experiencing its designs by the end of the '90s. Also, in these years, projects became more complex and diverse, thus requiring the involvement of smaller companies. As a result, an ecosystem of defence companies emerged in the late '90s.[27]

Turkish Aerospace Industries (TAI) has delivered the final upgraded Fighting Falcon F16 aircraft to the Turkish Air Force.

(27) Arda Mevlütoğlu, Türk Savunma Sanayiinin Dànüşümü, 17 April 2020. https://www.perspektif.online/turk-savunma-sanayiinin-donusumu/

6. 2000's: THE GROWTH

In the mid2000-s, the Turkish defence industry delivered significant and complex projects to private enterprises. Even many of these projects experienced frequent delays or cancellations.[28]

In this era, the Turkish defence industry began its significant projects to shape the future and prove its ability to equip and provide the Turkish Armed Forces successfully. These projects included Atak Milgem, TCG Anadolu, Altay and Anka. Many of these projects enjoyed sizeable public support and became symbols of national pride in Turkey.

Of these projects, Atak, Altay and TCG Anadolu were developed under foreign designs with license. Anka was "inspired" by Israeli UAV designs operated by Turkey. Milgram, however, was designed entirely by officers of the Turkish Navy.[29]

In these projects, which all are complex and can be evaluated as a "system of systems," sub-contractors had a much more significant role. Consequently, increasing volume in the defence industry allured other small and medium-sized enterprises to invest in the Turkish defence industry. Especially, OSTİM became a hub for such companies.[30]

In these years, the position of the defence industry we observe today also emerged: a pyramid-shaped ecosystem with ASELSAN at the top, other public companies and private enterprises chasing it such as TAI, Bayraktar, Otokar, BMC, Roketsan and SSM.

(28) Ibid.
(29) İsmail Demir, Transformation of the Turkish Defense Industry: The Story and Rationale of the Great Rise, in Insight Turkey Volume 22 No 3, SETA Vakfı Publications, September 2020.
(30) Ibid.

Figure: 2

The major Turkish-manufactured weapons

UAV (Drone)

ANKA

Producing companies

TUSAŞ

UAV (Drone)

BAYRAKTAR TB2

Producing companies

BAYKAR

UAV (Drone)

BAYRAKTAR AKINCI

Producing companies

BAYKAR

Warplane

HÜRKUŞ

Producing companies

TUSAŞ

Helicopter

T129 ATAK

Producing companies

TUSAŞ

Armoured Vehicle

KAPLAN STA

Producing companies

FNSS

Armoured Vehicle

AKINCI ZMA

Producing companies

FNSS

Armoured Vehicle

COBRA

Producing companies

BAYKAR

Submarine

TS1700

Producing companies

STM

Air Defence System

HİSAR

Producing companies

ROKETSAN

Tanks

ALTAY

Producing companies

BMC

7. 15 JULY – PRESENT: THE HARVEST

On 15 July 2016, a failed coup attempt in Turkey took place, revolutionising Turkey's politics, economy, foreign relations, and defence industries.[31]

First of all, the Turkish defence industry completed complex and assertive projects, and many of them have been visible in Turkey's military outlook.[32]

Atak helicopters played a crucial role in Turkey's fight against PKK insurgency and operations beyond its Southern borders. On the other hand, the Milgram project successfully began its second phase with the construction of I-Class frigates. Altay's main battle tank finally will start serial production after long delays due to sanctions placed on its engines. Altay's later versions will be powered by engines designed and produced by Turkish engineers. TCG Anadolu is expected to begin sea trials by the end of this year and be in service within 2022.

Meanwhile, the Turkish defence ecosystem produced its solutions and made the headlines. The most important and influential developments in this field came from crewless aerial vehicles. Bayraktar is now Turkey's signature piece of equipment as it became famous in the Libya, Syria and Nagorno-Karabakh crises.

Finally, the Turkish defence industry is now an ecosystem of subsystems.[33] Turkish equipment uses increasingly more in-country built ammunitions and auxiliary systems. If a Bayraktar is exported, hundreds of MAM-L bombs also are shipped as a result. Or, the armoured vehicles produced by BMC, FNSS, Otokar or Katırcılar use subsystems developed by local companies, especially ASELSAN. As a result, the whole ecosystem benefits from each sale in each project. At the same time, the industry can develop such projects to sustain itself.[34]

(31) Arda Mevlütoğlu, Türk Savunma Sanayiinin Dönüşümü, 17 April 2020 https://www.perspektif.online/turk-savunma-sanayiinin-donusumu/.

(32) Murat Yeşiltaş, Deciphering Turkey's Assertive Military and Defense Strategy: Objectives, Pillars and Implications, in Insight Turkey Volume 22 No 3, Seta Vakfı Publications, September 2020.

(33) Arda Mevlütoğlu, Türk Savunma Sanayiinin Dànüşümü, 17 April 2020. https://www.perspektif.online/turk-savunma-sanayiinin-donusumu/

(34) Can Kasapoğlu, Turkey Enters Tunisia's Weapons Market with Combat Proven Arms: A Technical and Strategic Assessment, Jamestown Foundation Terrorism Monitor Volume: 19 Issue: 2, January 2021..

In this ecosystem, specialisation is established through the leadership of the Directorate of Defense Industries (SSM), and only ASELSAN is exempt from this fact because it maintains the role of the locomotive of the Turkish defence industry. As a result of being at the top of the ecosystem, nearly all the projects in the industry contain ASELSAN's technology and solutions.

Meanwhile, the post2016- era witnessed yet another change in the defence industry's role and perception in Turkey and its politics. After the failed coup attempt, Turkey began answering security threats by using great force, and the defence industry became embedded with Turkey's image abroad.[35]

Bayraktar TB2 gained its reputation in the skies of Libya, Syria and Nagorno-Karabakh. The system eliminated dozens of Russian made air defence systems and made the headlines globally.

After distinguishing Bayraktar's and other equipment roles in diplomacy, the Turkish defence industry finally entered the era of strategic arms sales. Bayraktar have been sold to Ukraine when most needed. Poland, an EU and NATO member country, purchased Bayraktar from Turkey to send amicable messages to its allies in the west. Latvia is another country on the queue, and Latvia's defence minister previously stated that the 1915 event could not be labelled as genocide and the Latvian Parliament's decision to recognise the events as genocide is irrelevant.[36]

(35) Murat Yeşiltaş, Deciphering Turkey's Assertive Military and Defense Strategy: Objectives, Pillars and Implications, in Insight Turkey Volume 22 No 3, Seta Vakfı Publications, September 2020.

(36) Interview with Artis Pabriks, Anadolu Agency, https://www.aa.com.tr/en/europe/latvian-deputy-preimer-artis-pabriks-evaluates-bilateral-relations-and-cooperation-in-defense/2268211

Another curious case is the sales of TB2 to Morocco. The North African country allegedly purchased Bayraktars for nearly half the price sold to other countries. Two months after the sales, Sedat Peker, who is in exile, announced that Bayraktar sales to Morocco were a part of efforts to bring him home.[37]

Finally, the Turkish defence industry's outlook was shaped by private initiatives and products in this period. Even projects pursued by public companies include several other bodies of various sizes. Previously, military officials and public companies owned mainly by the military itself had steered the defence industry. Thanks to this change, the Turkish defence industry can now quickly develop and produce projects and export its outputs easily.

Turkey had 56 defence companies in 2002. Now the country has more than 1500 companies operating in the industry. The number of personnel reached 75000, according to the Directorate of Defense Industries.[38]

(37) Turkey accused of donating drones to Morocco, Nordic Monitor, https://nordicmonitor.com/05/2021/turkey-promises-to-donate-drone-to-morocco-in-return-for-extraditing-a-mafia-boss/

(38) İsmail Demir, Transformation of the Turkish Defense Industry: The Story and Rationale of the Great Rise, in Insight Turkey Volume 22 No 3, SETA Vakfı Publications, September 2020.

Figure: 3

The major Turkish military industrial companies

TÜRKHAVACILIK UZAYSANAYİİ

Date of Establishment: 1973

Helicopters:
- GÖKBEY
- T129 ATAK

Warplanes:
- HÜRKUŞ
- HÜRKUŞ-C

UAVs (Drones):
- ANKA
- AKSUNGUR

BMC

Date of Establishment: 1964

Tanks:
- ALTAY

Armoured Vehicle:
- KİRPİ.VURAN.
- AMAZON

Otokar

Date of Establishment: 1963

Armoured Vehicles
- AKREP II .
- COBRA II.
- KAYA II .

FNSS

Date of Establishment: 1986

Armoured Vehicles
- AKINCI ZMA.
- ZMA-15.
- KAPLAN STA

BAYKAR

Date of Establishment: 1984

UAVs (Drones):
- BAYRAKTAR AKINCI
- BAYRAKTAR TB2
- BAYRAKTAR DİHA
- BAYRAKTAR MİNİ İHA

HAVELSAN

Date of Establishment: 1982

Turkey's most important weapons technology company, manufactures control and surveillance systems.

VESTEL

Date of Establishment: 2003

UAVs (Drones):
- KARAYEL.
- ARI.

STM

Date of Establishment: 1991

Frigate:

Submarine:
- TS1700

roketsan

Date of Establishment: 1988

Heat-seeking missiles:

Satellites:

Air Defence Systems:
- HİSAR

Second:
STRATEGIC IMPORTANCE FOR TURKEY

Turkey’s foreign policy and strategic ambitions are accessible but challenging to recognise. For the most part, Turkey's foreign policy and strategic perspectives are consistent and have a far-reaching history. But Turkey's actions in the last decade are difficult to understand without knowing the context.

Given the limitations of this paper, it is nearly impossible to explain the changes in Turkey's foreign policy in the past ten years. But, considering the long term developments, it is fair to say that Turkey aims to increase its sphere of influence and build better trade ties, reach the high seas through bases and secure its frontiers, if necessary.

After several terrorist attacks within its borders and PKK/PYD's potential to emerge along Turkey's southern border from the Zagros Mountains to the Mediterranean shores, Ankara intervened in the Syrian crisis. And very lately, Turkey has had to defend Idlib to prevent yet another refugee crisis happening so close to home. In this sense, it had taken military action to reach its goals.[39]

Turkey is having a dispute with its neighbours in the Mediterranean Sea because of maritime delimitation issues. As a result, Turkey signed a memorandum of understanding (MOU) with the UN-recognised Tripoli government to secure its rights in the Eastern Mediterranean. Hence, Turkey intervened militarily in the Libyan crisis. They provided military counselling, fire support, military training, equipment sales, mercenaries and air defence with its onshore frigates.[40]

(39) Murat Yeşiltaş, Deciphering Turkey's Assertive Military and Defense Strategy: Objectives, Pillars and Implications, in Insight Turkey Volume 22 No 3, Seta Vakfı Publications, September 2020.

(40) Anchal Vohra, It's Syrian vs Syrian in Libya, https://foreignpolicy.com/05/05/2020/libya-civil-conflict-syrian-mercenaries-turkey-russia-gna-haftar/

In 2019 and 2020, Turkey utilised gunship diplomacy when its Mediterranean diplomacy was limited. Turkish research vessels paced the seas once claimed by Greece and the Republic of Cyprus. The Turkish Navy escorted research vessels and actively defended the ships at times.[41]
On some occasions, the Turkish Navy dissuaded foreign research vessels in the region.[42] Yet again, Turkey's strategy included military action.

When Turkey's long-term ally Azerbaijan sought help in the Caucuses, Turkey did not hesitate and put all its might behind Azerbaijan. As a result, The Second Nagorno-Karabakh War became a victory for Turkey and Azerbaijan. Thus, once more, Turkey achieved strategic goals with military means.

The theme continued. For diplomatic gains, Turkey generously used its military capacity, selling Bayraktars to Ukraine, Poland and Latvia and accessed alliances, building solid relationships with these countries, which is expected to benefit Turkey, especially inside multinational organisations such as the UN, NATO and EU.[43]
Lately, when Saudi Arabia pursued normalisation with Turkey, Bayraktar and Vestel sales were on the table as a part of the negotiations.

In a sense, Turkey's growing inability to launch diplomacy to ensure a regional leadership role and protect its red lines made military action Turkey's only option by involving its military might in crises or selling military equipment.

As a result, the defence industry is a strategic sector for Turkey's foreign relations. Even the Director of Defense Industries, İsmail Demir, explained in Antalya Diplomacy Forum that Turkey sees the defence industry as an "important diplomatic tool."[44]

(41) Fatih ve Yavuz Sondaj Gemileri Güvende, TRTHaber, https://www.trthaber.com/haber/gundem/fatih-ve-yavuz-sondaj-gemileri-guvende434063-.html

(42) Cyprus Accuses Turkey of Blocking Ship Again in Gas Exploration Standoff, Reuters, https://www.reuters.com/article/us-cyprus-natgas-turkey-idUSKCN1G71MF

(43) Rifat Öncel, Perspective: Drivers and Implications of Bayraktar TB2 sale to Poland, https://www.setav.org/en/perspective-drivers-and-implications-of-bayraktar-tb-2sale-to-poland/

(44) Turkey Sees Defense Industry As Important 'Diplomatic' Instrument, Daily Sabah, https://www.dailysabah.com/business/defense/turkey-sees-defense-industry-as-important-diplomatic-instrument

Another dimension to the strategic importance of the defence industry to Turkey is the domestic politics and perception of the Turkish public. The public perceives the issue as being "a national matter" and supportive of the defence investments at large.

Turkey's problematic relations with Western countries and past events such as arms embargo in the '70s, foreign support to PKK or current open or hidden sanctions on Turkey contribute to the perception of a national matter.

On the other hand, after nearly 20 years in power, the AKP administration draws a contrast between the Turkish defence industry's current situation and its shape in 2002 to persuade more votes, this discourse, in line with the existing current nationalist AKP-MHP (and Vatan, BBP) alliance and AKP's rhetoric towards the opposition and Turkish politics in general. As a result, the defence industry is a vital political tool in domestic politics and bears solid value to the current administration.

Third:
ECONOMIC AND POLITICAL CONSTRAINTS

Turkey's defence history is where sanctions and embargos are not exceptions. The very existence of the industry itself owes so much to the embargos and sanctions that the Turkish military-industrial complex had as well as economic and political constraints. These constraints made it flourish from 1964 to today.

Now, Turkey faces the threat of CAATSA sanctions, and the risk of these sanctions becoming serious is a definite possibility. Western countries that ally with Turkey within NATO impose bans on arms sales to Turkish companies.

US Congress still blocks sales to Pakistan as engines in Atak are provided by a partial US company. Rolls-Royce withdrew from the consortium to power Turkey's TF-X in 2019. And most importantly, Turkey is now excluded from the F35-joint production program, and the deliveries of the planes owned by Ankara are in question while four planes sit in a hangar at Fort Worth Base in Texas.

Finally, critical systems and materials required for essential projects are denied from Turkish ownership because of political motivations.

These political constraints put severe stress on the already overstretched Turkish defence industry. The domestic sector is about to reach another level, and these limitations complicate its defence mission. To develop advanced technology systems, the industry needs foreign assistance, and to stay alive, the industry needs sales to foreign countries.

The biggest economic constraint for the Turkish defence industry is the inflation and depreciation of the Turkish Lira against foreign currencies, as the Lira lost half of its value between 2018 and 2021.

The prices of raw materials and machinery used in the industry are set in US dollars, and each loss in the value of the Turkish Lira affects the defence industry. Moreover, the depreciation in the Turkish Lira negatively affects Turkey's defence budget, the primary consumer in the market. It is questionable whether the ecosystem can sustain itself if a deduction in the Turkish Army's budget occurs, especially considering political difficulties to sell arms to foreign countries.[47]

A further economic difficulty caused by the depreciating Turkish Lira is the brain drain. The Turkish defence industry is losing an experienced workforce to its American, German and Dutch rivals. Purchasing power and political climate in Turkey is the price to pay for Turkish defence industry's workers. It was considering Temel Kotil's plans to hire 6000 more qualified engineers in ten years to complete projects, including TF-X.[48]

Briefly, the Turkish defence trade achievements are a result of both long-term investment and a healthy ecosystem led by a few key players. But the political and economic difficulties blur the future for the industry. Specific projects such as Altay already suffered from these complications.

To sustain the ecosystem, the Turkish defence industry needs exports and is complicated by political and economic difficulties.

(47) Arda Mevlütoğlu, An Assessment of Turkish Defence Industry, Osservatiora Turchia, CeSPI, https://www.cespi.it/sites/default/files/osservatori/allegati/brief_27_-_arda_assessment_on_turkish_defenceindustry.pdf

(48) TUSAŞ Genel Müdürü Temel Kotil TUSAŞ'ın Projelerini Anlattı, Defensehere.com, https://defensehere.com/tr/tusas/tusas-genel-muduru-temel-kotil,-tusas-in-projelerini-anlatti/141753

Bayraktar TB2 UAV (Drone) manufactured by the Turkish company Baykar Makina participates in a military parade marking the end of the military conflict in Nagorno-Karabakh, Baku, Azerbaijan. December 2020 ,10 (Reuters photo).

Fourth:
TURKISH DEFENSE INDUSTRIES IN FUTURE: WHAT TO EXPECT WHAT NOT TO EXPECT

External developments such as sanctions and embargos have influenced Turkey's defence industry's past. Most of the time, these events forced Turkey to develop its local defence industry, as happened in the 1970s.

Today, Turkey faces similar experiences and good and bad news. The good news is, Turkey has been able to shine amid these political and economic difficulties. Turkey's UAV and UCAV program results from Israel and USA's reluctance to sell or share technologies with Turkey. Or the Altay program finally has its engine, which is expected to be used in different platforms and constitute a base for future engine platforms.[49]

On the other hand, Turkey's defence industry owes much to its partnerships and joint production with Western companies, especially to the projects of the late '90s. The aerospace industry is a strong example in this sense. The industry had its roots in the '80s when Turkey began producing F16- jointly with Lockheed Martin. Later, Turkey modernised F16-s and developed a certain degree of knowledge through the project. F35- was a step towards Turkey increasing their expertise and preparing the TF-X project industry. The loss of F35- expertise is irreplicable.[50]

The sector now faces different risks. The most considerable is economic: crucial significant projects may be delayed or postponed, and consequently, the ecosystem may not survive.

(49) Turkey Successfully Tests Its First 1500 Horsepower Tank Engine, Defensehere.com, https://defensehere.com/eng/defense-industry/turkey-successfully-tests-its-first-1500-horsepower-tank-engine/142038

(50) Arda Mevlütoğlu, The Future of Turkey's Airpower: The Fifth GEneration Challenge, In Insight Turkey Volume 22 No: 3, Seta Vakfı Publications, September 2020.

Now, Turkey has completed all its long-term projects and investments. Turkey's future projects require critical technologies, materials, and extensive know-how in areas Turkey severely lacks. On top of that, the Turkish defence industry needs other potential buyers for its products.

The second risk is diplomacy. Following Turkey's instrumentalisation of its military-industry complex for strategic purposes made the industry a target for sanctions, an increase or persistence of the sanctions will be harmful.

The third risk is the domestic economy of Turkey, as the industry may lack qualified human capital for significant projects.

Finally, the fourth risk arises from Turkey's domestic politics. Overpoliticization of defence by the current administration risks entrenchment with senior AKP-circles and may cause trouble if AKP is replaced.

The highest possibility is that the first and third risks will be influential in the trajectory of the Turkish industry, and the ecosystem will suffer a shrinkage which may cause small and medium-sized companies to either go bankrupt or leave the industry for good.

Even in the worst-case scenario, the Turkish defence industry is here to stay, and the question is about its future size, which I believe will keep growing but at a slower rate.

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