

Chasing the Red Apple

Turkey's Quest for Strategic Autonomy

Marianna Serveta

The red apple (Tur. kızıl elma), among the most prominent symbols of Turkish nationalism, has been used since the Ottoman period for describing Turkey's pursuit of autonomy and global power. Referring to the Turkish army's prowess, President Erdoğan often uses the symbol of the red apple, a symbol also used by the defence industry when alluding to the quest for strategic autonomy. Tellingly, the Turkish defence company Baykar has named its flagship product, a drone, the Kızılelma. During Erdoğan's recent years in power, the country's quest for strategic autonomy, the pursuit of a modern-day red apple, has intensified. Based on document analysis and interviews with defence experts in Turkey, this study describes what strategic autonomy currently means in a Turkish defence context. Developments in Turkey's local defence industry, with a focus in the period after 2016, are the indicator chosen for evaluating how close Turkey has come to attaining the goal of strategic autonomy.

TURKEY'S RELATIONS WITH NATO are shadowed by a reliability crisis. NATO often views Turkey as an unreliable partner, as when NATO chose to expand a military base in Romania for operations in the Black Sea instead of expanding the existing Çorlu airbase in northwestern Turkey, built for this kind of contingency. For its part, Turkey is not certain that NATO would activate Article 5 and defend the country if attacked, as government representatives often claim with respect to PKK insurgencies. Turkish strategic autonomy should thus be viewed as both resulting from and enhancing this trust deficit between Turkey and NATO.

In the name of strategic autonomy, Turkey has acted in ways that seem to be in conflict with the country's role as a NATO ally. Some examples are particularly illustrative: Turkey's purchase of the S-400 air-defence system from Russia in 2017, Turkey's unilateral interventions in Syria and Libya, and its hedging in the Ukraine-Russia war as well as during the escalation of the Iran-Israel conflict in 2024. Thus, concerns have been raised about the nature of strategic autonomy as a pulling force, whether acquiring strategic autonomy will lead Turkey to increasingly act as a solo player and, consequently, whether expanding strategic autonomy for Turkey means a shrinking potential for cooperation between Turkey and NATO.

Divisions within NATO and the transatlantic community widen the latitude for Turkey to act independently

and seek strategic autonomy.¹ Breaking down the strategic autonomy concept is timely for understanding Turkey's ambitions in the future. Hereafter, a short overview of the strategic autonomy concept is followed by an analysis of how it is reflected in the country's defence industry.

STRATEGIC AUTONOMY IN THE CONTEXT OF TURKISH DEFENCE

The strategic autonomy concept is not as thoroughly developed in Turkey as it is in France or India. When referred to in a defence context, both official documents and academic papers use various terms interchangeably.² Since the end of the 1990s, Turkey has not published a white paper on defence or a revised military doctrine.³ The effects of the concept become visible, however, in various parts of the Presidency's Strategic Plans, which in turn lead defence developments in the country.

Strategic autonomy for Turkey translates into the ability to, when necessary, act independently in various domains of defence and security policy. This firstly entails the ability to independently analyse and assess the country's threat landscape. Secondly, it entails maintaining advanced military capabilities, which the country could set in motion for protecting its national interests. Consequences of the latter are the will to (a) diversify procurement channels, and (b) increase the ownership in the country's most critical defence industries.⁴

The purpose of developing strategic autonomy in Turkey is twofold. On the one hand, it gains leverage for Turkey vis-à-vis its Western allies for integrating the country into the EU's defence architecture and military-industrial complex, as well as for gaining a larger space in the transatlantic community. On the other hand, it enables Turkey to act unilaterally when the country's national interests are not protected through the alliances it is a member of.⁵ That can more easily be conceptualised as *relative* strategic autonomy since the country does not aim for full independence (i.e., absolute strategic autonomy), which would jeopardise the former purpose. Considering Turkey's limited material capabilities, aiming for relative strategic autonomy is a more realistic goal.⁶

From Turkey's perspective, increasing strategic autonomy does not conflict with collective defence, nor is strategic autonomy a force that intrinsically drives Turkey away from NATO.⁷ However, the geopolitical leverage that Turkey gains by strengthening its military capabilities facilitates a higher degree of independent action. This can affect NATO's view of Turkey as an ally, and thereby harm the cooperation potential of Turkey with its traditional allies.

STRATEGIC AUTONOMY IN TURKEY'S DEFENCE INDUSTRY

Strategic autonomy is reflected in the defence industry's technological efforts. Two factors accelerated Turkey's desire to develop its defence industry: the arms embargo imposed on Turkey after the invasion of Cyprus in 1974 and a shift from perceiving the Soviet Union as the main threat to Turkish sovereignty to focusing on internal security threats and the fight against the Kurdistan Worker's Party (PKK) in the 1980s.⁸ Western allies reacted negatively to Turkey's efforts against the PKK, resulting in periodic suspensions of arms sales. Both of these factors highlighted the fact that Turkey could not meet its arms needs for securing its strategic priorities, especially when those were not in line with the priorities of Turkey's allies. The need to build up military capabilities that would facilitate acting without having to endure the limitations of external powers became prominent again after the Arab Spring uprisings reached Syria. Turkey had a failed state on its border, where the United States supported PKK-affiliated Kurdish militia groups fighting the Islamic State (ISIS) yet refused to sell air-defence systems to Ankara. This reinforced Turkey's desire to seek alternatives for ensuring sufficient military capabilities. After the failed coup in 2016, this desire turned into an assertive quest for

strategic autonomy and has been accompanied by militarisation and interventionism.⁹

For Turkey's military operations in Syria from 2016 to 2020, the armed forces relied to a large extent on indigenous weaponry. Although the operations were deemed successful, they highlighted the remaining shortcomings of the local defence industry, mostly regarding Turkey's proxy-warfare capabilities and operations in hybrid-warfare battlegrounds like that of Syria.¹⁰ That entailed challenges in defending ground forces against anti-tank guided missiles and aerial platforms from man-portable air-defence systems.¹¹ The embargoes that Western allies imposed on Turkey in response to these operations exacerbated the industry's shortcomings.¹² Recent events, such as Germany's export license restrictions in 2021, which halted Turkey's battle-tank production, have catalysed the government's will to prioritise efforts towards attaining strategic autonomy.

Strategic autonomy is a central driver for building a Turkish defence-technology industrial base that is increasingly indigenous and becoming more self-sufficient in critical systems and subsystems. In defence industry terms, strategic autonomy amounts to self-sufficiency. Some turning points, described below, gave rise to a quest for self-sufficiency during Turkey's defence industrialisation process. Following a brief summary of these turning points, the development of Turkey's procurement strategy since 2016 is described. A consideration of the indicators of the defence industry's self-sufficiency is succeeded by an evaluation of how well Turkey has approached the goal of strategic autonomy.

From off-the-shelf to gradual coproduction efforts

From producing small arms and ammunition in the early republican era, Turkey initiated off-the-shelf procurement to modernising its capabilities. It had halted efforts to boost the local defence industry until the mid-1960s. Yet, between the 1960s and the 1970s, aiming to build power-projection capabilities with regard to crises in Cyprus, it initiated indigenous programmes to strengthen its naval forces. The 1974 US embargo boosted the desire for indigenous production of critical components and strengthening the maintenance network of purchased equipment. Considering off-the-shelf procurement and even technology transfer, Turkey made efforts to diversify its resources. It entered into negotiations with the United Kingdom and Italy in aviation programmes, and began submarine coproduction cooperation with Germany, along with the purchase of German frigates and missiles. During this period, companies such as ASELSAN

were founded and later led defence industry developments in the country.¹³

From the 1980s on, the private sector was encouraged to become involved in the defence industry and to initiate cooperation with foreign actors. This paved the way to focussing on technology transfer and joint-venture models, moving Turkey's defence industry efforts away from relying on off-the-shelf procurement. The creation of the Undersecretariat for Defence Industries (Savunma Sanayii Müsteşarlığı, ssm) in 1985 concentrated these efforts and placed them under the country's political leadership. This gave the country's leadership an influential role in defence-industry matters.¹⁴ Until the end of the 1990s, Turkey experienced domestic turbulence related to the PKK insurgencies, and defence industry issues were politicised and embedded in the country's foreign-policy priorities. Thus, Turkey saw its involvement in multinational programmes as an escalation of its joint ventures and an additional layer for securing procurement. Turkey then joined programmes such as the European Future Large Aircraft and initiated coproduction with foreign companies. The so-called "postmodern coup" in 1997 again brought the ssm under the military-controlled defence ministry, which until the Justice and Development Party (AKP) came to power, favoured off-the-shelf procurement.¹⁵

AKP's focus on an indigenous development model

Efforts to increase the defence industry's self-sufficiency continued in the 2000s, with some shifts in direction. Continuing to prioritise local defence-industry involvement, the AKP government emphasised indigenous solutions and technological autonomy in order to circumvent foreign actors' resistance to sharing sensitive and cutting-edge technology. An indigenous-development model was then favoured over joint production.¹⁶ Thus, the AKP's first decade in power saw large investments in local programmes, including the Altay battle tank, the ANKA drone and the MİLGEM corvette, as well as the cancellation of programmes that would require off-the-shelf procurement from foreign suppliers.¹⁷ During this time, initiatives were also taken to nationalise joint ventures.

In the second half of the 2000s, local subcontractors gained more influence in procurement programmes, and focus was placed on building major platforms with as many locally produced subsystems as possible. This procurement model, referred to as the "unique design model," expanded the production of land vehicles, infantry weapons, intelligence systems and command-and-control communications.¹⁸ The fact that

indigenisation began on a major platform level and not on a component level benefited local capacity-building and the defence industry's prospects for becoming a system integrator.¹⁹ The development of the TB2 drone is illustrative. The fact that the drone can be equipped with different electrooptical systems (from the Canadian Wescam to the Turkish ASEFLIR-600) or none at all (i.e., the recipients purchase the electrooptical system independently) endows the industry with great development and manufacturing potential. It also reduces dependence on a single supplier of components. The national warship programme (MİLGEM) is similarly illustrative. Through MİLGEM, Turkey locally designs, builds, and equips surface combatants, ranging from corvettes to destroyers. Turkey has exported different versions of the MİLGEM, for example to Ukraine and Pakistan.²⁰ These platforms are equipped with electronics and weapon systems that are different from those operated by the Turkish navy. This creates opportunities for advanced modification and integration within the industry.

This procurement method, which emphasises indigenous solutions and the manufacture of uniquely designed platforms, broadens a country's potential for both international cooperation and export.²¹ Indeed, the industry's gradual indigenisation during the 2000s did not result in Turkey's withdrawing from international collaborations. Although, apart from its collaboration with traditional Western allies, the industry began to embark on cooperation with non-traditional allies, particularly after the outbreak of the civil war in Syria. This was evident, for example, in its efforts to initiate a programme to develop a long-range air and missile-defence system, which a Chinese company won the tender for in 2013.²² Even Turkish defence exports saw an increase towards the second half of the 2000s. From USD 487 million in 2006, the defence industry attained USD 1.953 billion in exports in 2016.²³

The post-2016 period and current procurement strategy

Turkey's efforts at indigenisation and broadening its cooperation network have intensified since 2016. These efforts were streamlined when the president placed the ssm under his direct control in 2018, renaming it to Savunma Sanayii Başkanlığı (SSB), as part of comprehensive reforms following the failed coup attempt two years earlier.²⁴ Apart from the intelligence agency, the SSB is the only other agency that is under the direct control of the president. Through this reform, the SSB gained considerable strength in terms of budget and legal framework compared to the ministries. This

reflects the importance the Turkish government places on the defence industry, viewing it as a policy tool to enhance the country's political and security footprint in the region.²⁵

Turkey's current procurement strategy, crystallised after the reforms mentioned above, focusses on research and development (R&D) projects. The new Strategic Plan for 2024–2028 echoes the focal points of the 2019–2023 Strategic Plan, such as generating elite human capital to boost technological transformation. The latest Strategic Plan places its main emphasis on R&D, advanced technology development and strengthening indigenous efforts. Ankara views these as catalysers for reducing external dependence, strengthening the Turkish defence industry ecosystem, and moving the country closer to its goal of strategic autonomy.²⁶ More specifically, Turkey's analysis focuses on the military application of AI, the development of unmanned warfare assets with emphasis on naval drones, and advancements in defence technologies, such as smart munitions.²⁷

Indicators of the defence industry's self-sufficiency

In a defence industry context, strategic autonomy translates to self-sufficiency. Consistent with earlier research, indicators of self-sufficiency include: (a) fulfilling the country's defence requirements through local sources, i.e., the level of indigenization, (b) lingering dependencies, (c) the industry's level of sustainability, evaluated through exports, R&D, human resources, dual-use capabilities, and international cooperation; and (d) defence imports along with diversification of suppliers.

Level of indigenisation

Indigenisation is estimated by examining the level to which a country designs, develops, manufactures, and repairs its defence equipment. From 50 % in 2010, the level of indigenisation increased to 65 % in 2018.²⁸ Since 2018, the Presidency's efforts to localise defence production have quickly led to results: the level of indigenisation reached 80 % in 2023, surpassing the 75 % goal of the 2019–2023 Strategic Plan. The SSB's current target is to reach 85 % indigenisation by 2028.²⁹ Some examples of indigenised (sub)systems that replaced previously procured off-the-shelf subsystems include ASESAN's optics and radars and Baykar's Kızılelma drone.

When considering indigenisation, it is relevant to consider the value of the parts or (sub)systems of a weapon system that are *not* indigenous. The industry might have succeeded with indigenising the majority of its products, for example, an aircraft's skeleton. However,

if it continues to procure an off-the-shelf version of an essential component of a weapons system, for example, an aircraft's engine, then the value of the non-indigenised part (the 20 %) is greater. Thus, the indigenisation level of the Turkish defence industry should be evaluated in tandem with the industry's lingering dependencies.

Lingering dependencies

Areas of lingering dependency include the components, subsystems, and parts that Turkish companies need for manufacturing major platforms. The most critical lingering dependency regards engines. Semiconductors, such as microchips and nanotechnology assets, which are necessary for manufacturing, for example, missile propellants, comprise another critical area where the Turkish defence industry remains dependent on foreign suppliers and vulnerable to global security developments.³⁰

Regarding machine tools, steps have been taken to develop the local machinery industry; machine-tool exports have increased and Turkey's machine-tool market is among the top ten in the world.³¹ However, in 2022, Turkey was still the world's seventh-largest, and Europe's third largest, machine-tools importer.³² It is beyond the scope of this study to explore the extent to which Turkey's weapons production is dependent on foreign machine tools or whether locally produced machine tools are sufficient for its needs. However, it is vital to highlight Turkey's lingering dependency on machine tools, an aspect often missed when evaluating the manufacturing capacity of the country's defence industry.

Despite Ankara's focus on advanced technology development and modernisation, its C4ISR infrastructure (command, control, computers, communications, intelligence, surveillance, and reconnaissance), i.e., the military's "nervous system," is tightly integrated into NATO's equivalent architecture. Considering that Turkey has far to go in modernising its command and control networks, there is a lingering dependency on NATO's critical sensor architecture.³³

The Turkish armed forces operates a variety of procured equipment, such as American F-16 fighter aircraft, AH-1S Cobra helicopters, and M60 battle tanks; German Leopard battle tanks; and Spanish amphibious landing craft.³⁴ Turkey is dependent on foreign suppliers to maintain such systems, although to varying extent, as it also invests in upgrading programmes for configuring the maintenance work it needs to carry out on its own. Moreover, indigenously produced platforms are often equipped with procured weapons; for example, Turkey's naval platforms are equipped with American Harpoon missiles. National R&D projects are currently developing

systems that will eventually replace the procured ones, as is the case of the gradual integration of the ATMACA anti-ship missile into combat platforms.³⁵ Despite this, a certain weapon systems dependency remains.

Considering the regional threat landscape, Turkey's posture has two areas of persisting vulnerability: (a) its anti-ballistic missile capabilities and (b) its airpower's continuous dependency on fourth-generation aircraft. Considering the former, although Turkey has locally developed the Bora and Tayfun ballistic missiles, they are tactical assets, not strategic weapon systems.³⁶ Turkey has not activated its S-400 system since it purchased it from Russia, which indicates that the country remains dependent on NATO for missile defence (either through on-demand deployments or allied countries' capabilities). Regarding the latter, although Turkey's indigenous fifth-generation fighter jet, the TAI Kaan, recently had its maiden flight, it will not enter Turkey's arsenal until 2028, at the earliest. Until then, production will depend on American engines (F110), which will be replaced with indigenously produced engines from 2028.³⁷

Thus, despite developments in the desired direction, the industry's level of indigenisation, along with the lingering dependencies, suggest that Turkey has a long way to go before reaching the goal of self-sufficiency.

Sustainability of the local defence industry

Exports

A few large companies and multiple medium-sized enterprises dominate Turkey's domestic market: the state itself is the main customer. The domestic market cannot absorb all of the local defence industry's products. Exports are thus not only essential for the development of Turkey's defence industry, but also in order to spread out the high initial costs of R&D and production. The combat-proven performance of Turkish weapon systems on various battlefields has catalysed defence industry exports. The NATO-standard high-tech product range of Turkey's weapon systems has attracted interest in the Middle Eastern and African markets, in particular.³⁸ Other factors that have contributed to the increase in exports include the fall in the value of the Turkish lira and the Turkish defence industry's export policies, with their relatively generous after-sale support and technology transfer, as well as the products' cost-effectiveness.³⁹

In 2023, Turkey was eleventh among the world's largest exporters of major arms, although with a mere 1.6%, share in the global arms market.⁴⁰ Its exports were mostly comprised of armoured vehicles, ships, and drones. Between 2016 and 2023, its exports developed as follows, see Table 1:

Table 1. Turkey's defense exports 2016-2023.

Year	Export revenues (billion USD)	Turkey's rank among global exporters	Main clients (share of exporter's total exports, %)			Annual percent change
			1st	2nd	3rd	
2016	1.678	16	Turkmenistan (29)	UAE (20)	Saudi Arabia (20)	-
2017	1.739	15	Turkmenistan (31)	UAE (24)	Saudi Arabia (16)	4%
2018	2.035	14	UAE (30)	Turkmenistan (23)	Saudi Arabia (10)	17%
2019	2.741	14	Turkmenistan (25)	Oman (12)	Pakistan (12)	35%
2020	2.279	13	Oman (19)	Turkmenistan (19)	Malaysia (11)	-17%
2021	3.225	12	Turkmenistan (16)	Oman (16)	Qatar (14)	40%
2022	4.396	12	Qatar (20)	UAE (17)	Oman (13)	36%
2023	5.545	11	UAE (15)	Qatar (13)	Pakistan (11)	25%

Remarks: Turkey's ranking and main clients' data are collected from SIPRI's annual fact sheets on international arms transfers. Export revenues are collected from SASAD's annual performance reports. SASAD uses the price level of the respective year and reports the figures directly in US dollars. The figures are not adjusted to inflation.

Sources: SASAD. Performans Raporu 2022, p. 8; SASAD. Performans Raporu 2021, p. 10; SASAD. Performans Raporu 2020, p. 11; SASAD. Performans Raporu 2019, p. 8; SASAD. Performans Raporu 2018, p. 8; SASAD. Performans Raporu 2017, p. 5; SASAD. Performans Raporu 2016, p. 5; Yayıllı, Cem (2024) "Turkey's defense, aerospace exports rose by 25% last year," *DefenseNews*, 8 January.

The increase of arms exports from 2016–2023 was a staggering 228 %. As a comparison, exports rose by 102 % from 2009–2016. In 2023, the Turkish defence industry signed contracts with a total value of USD 10.2 billion.⁴¹ Exports are vulnerable, however, to embargoes imposed by third parties, as they disrupt supply chains and lead to complications with export licenses. For its future efforts, the SSB has chosen to tackle this issue by prioritising the production of systems with high local content and by further expanding the industry’s supply channels through the establishment of multi-stakeholder mechanisms.⁴²

R&D

Apart from exports, R&D projects also contribute to making the industry sustainable and integrating it into international supply chains. More than 20 % of Turkey’s overall R&D investments involve R&D in defence, which resonates with the fact that R&D lies at the centre of Turkey’s procurement strategy. The share of private companies in Turkey’s R&D expenditures in defence is around 20 %, which means that R&D investments are mainly covered by public resources.⁴³ Turkey’s R&D investments in defence have been increasing, from USD 50 million in 2002 to USD 2.7 billion in 2022. Since 2020, Turkey’s defence R&D expenditures have been on the increase, amounting to USD 2.4 billion in 2020, USD 2.6 billion in 2021 and USD 2.7 billion in 2022, ranking Turkey fifteenth amongst global R&D spenders.⁴⁴ In 2022, R&D investments amounted to almost a fourth of Turkey’s defence budget (USD 10.6 billion that year). Turkey’s overall R&D expenditures are low compared to the OECD countries. In defence R&D, though, Turkey ranks among the top ten OECD countries.⁴⁵

The R&D Panel, a committee formed in 2016, coordinates Turkey’s defence R&D efforts. For the ongoing projects, the R&D Panel has approved a budget of USD 3.2 billion.⁴⁶ Recent results of indigenous R&D projects include the Long Range Anti-Tank Missile System (UMTAS) and CIRIT laser-guided missile.⁴⁷ The SSB’s efforts to increase the number of R&D projects that will lead to reducing (technological) dependencies are reflected in the 2024–2028 Strategic Plan. Looking ahead, the Presidency prioritises platform and system development projects that will utilise national and local resources.⁴⁸

With the view to strengthening R&D efforts, the SSB also establishes private and public companies, which are encouraged to broaden their partnerships within the fields of defence, aviation, space, and homeland

security.⁴⁹ This can contribute to the sector’s sustainability in the long term, as it drives industry-to-industry relations and could facilitate the Turkish defence industry’s involvement in, for instance, the integration of so-called “deep tech” into NATO. As of now however, the sector suffers from a lack of start-ups.⁵⁰

A key aspect in evaluating R&D is the extent to which a country’s efforts lead to innovations and capability improvements. The European Scoreboard 2023 lists Turkey among *emerging* innovators and mentions that Turkey currently scores low compared to the other European countries.⁵¹ Thus, although Turkey’s R&D efforts are adequate to boost the country’s own capabilities, this innovation deficit signals Turkey’s limited capacity to compete in international markets, at least for the time being.

Human resources

A factor affecting the sustainability of the local defence industry is the increasing brain drain observed among defence experts and qualified workforce. In 2016, the Turkish government purged thousands of highly qualified engineers after assuming their involvement in the failed coup attempt the same year. Only in 2018, 270 senior defence contractors moved to Western countries to pursue better opportunities.⁵² The two latest Strategic Plans (2019–2023 and 2024–2028) address the dearth of human resources as a threat to the defence industry’s development and expansion efforts and mention that strategies should be created to prevent brain drain.⁵³ Regarding the new generation of the workforce, the SSB is planning to increase internships and job placements in the sector through employment programmes and increasing the outreach and number of trainings offered by the Defence Industry Academy.⁵⁴

Dual-use

Another factor that contributes to the industry’s sustainability is civil-military interoperability, i.e., the dual-use of civilian and military assets. Through dual-use, the defence sector can tap into civilian resources when necessary. Dual-use is also relevant for the sector’s self-sufficiency because third countries not only impose restrictions on military products, but also those used for civilian purposes for which there might be military applications. This was observable when the Turkish government developed plans for utilising precision machinery for military purposes. Also regarding exports, multiple Turkish companies have been sanctioned for exporting industrial

products that were later used by third countries' defence industries.⁵⁵

Assets that are relevant for dual-use not only include drones and submarines, but also components or technologies used in civilian assets, such as sensors, acoustic systems, computer chips, and lasers.⁵⁶ The Turkish armed forces has a wide array of civilian assets to tap into when necessary. The manufacturing of dual-use products in Turkey is currently limited, although defence companies such as ASELSAN are increasing their investments in the development of a range of such devices, for example MR and portable X-RAY.⁵⁷ The SSB is working to integrate the electronics sector with the transportation, automobile, and machinery sectors, as part of wider efforts to integrate the civil sector more deeply with the defence industry.⁵⁸ An example of projects that the SSB has initiated is the Ant Project, which is developing communication infrastructure for both civilian and military vehicles. In the latest Strategic Plan, the SSB highlights the need to develop dual-use opportunities between the defence industry and the civil sector to increase efficiency in production.⁵⁹ The areas of interest for the Turkish defence industry, in terms of investment in dual-use technologies, are quantum, AI, and hypersonic technologies, and autonomous systems. Moreover, although currently limited, an increase in technology transfers between the civilian and military sectors could contribute to the industry's future sustainability.

International cooperation

Although Turkey has boosted its indigenisation efforts, it values international cooperation. Notwithstanding this, the procurement of the Russian S-400 air-defence system in 2017 led to the termination of Turkey's participation in the F-35 Lightning II programme and hurt the country's potential for cooperation with Western partners. The S-400 deal was a high-level strategic transaction between Russia and Turkey and not a defence-industry transaction aiming to strengthen Turkey's defence industry efforts; rather, the deal's political value was larger than its value in meeting the needs of the industry. As a defence industry expert stated: "This was the most expensive defence deal ever. A rough estimate is 2.5 billion dollars for the missiles, at least 12 billion for the cancelled workshares of the Turkish companies in the F-35, and 20 billion for F-16 to fill the gap for the absence of F-35. Those were opportunity costs with zero Turkish local contents."⁶⁰ The cancelled workshares included the production of 400 aircraft parts for which Turkish companies would have been the sole producers.⁶¹ At the time, this Russo-Turkish cooperation

weakened the industry's growing potential. However, it did not affect Turkey's cooperation with non-Western partners, such as South Korea, Japan and China.

Looking ahead, according to the 2024–2028 Strategic Plan, the SSB will be focusing on increasing international institutional cooperation.⁶² The SSB has recently undergone a restructuring and opened a department for international cooperation programmes that focus on NATO countries. According to the Strategic Plan, in addition to the partnerships developed with foreign companies by 2023, the aim is to establish two new partnerships with friendly and allied countries by 2026 and three more by 2028. The countries are not specified.⁶³ Moreover, the SSB has identified a way to increase international cooperation by establishing a state-to-state mechanism.⁶⁴ This does not exclude industry-to-industry relations, a field where the companies founded by the SSB could play a critical role. Another factor contributing to the local defence industry's sustainability is that a precondition for Turkey's entering a partnership is that it is treated as an equal partner. This entails prioritising projects that boost local expertise and result in more benefits for the defence industry than solely the end product.⁶⁵

Evaluating human resources, dual-use, and international cooperation, the Turkish defence industry shows signs of both positive development and continuous vulnerability. This pushes the goal of self-sufficiency further into the future.

Imports and diversification efforts

Turkish defence imports have undergone a qualitative transformation. After the 1990s, imports have shifted in the 2000s from off-the-shelf procurement of major platforms to subsystems and components, such as engines. Between 2012 and 2015, import expenditures decreased (from USD 1.409 billion in 2012 to 1.067 in 2015). Since 2016, imports developed as shown in Table 2 below.

For the period 2016–2022, imports increased by 109%. In 2023, Turkey ranked seventeenth among the world's top importers of defence equipment, with a share of 1.6% in the global arms market.⁶⁶ The imports trend since 2016, when compared to the preceding period, shows that the share of imports in the total turnover of the sector has not changed. The relatively high imports despite increased efforts at indigenisation could be linked to Turkey's military operations in Syria and Iraq, as well as to its projection of power in its neighbourhood. If evaluated in parallel to the country's exports, however, it can be stated that increased exports have relied on increased imports.

Table 2. Turkey's defense imports 2016-2022.*

Year	Import expenditures (billion USD)	Turkey's rank among global importers	Main suppliers (share of importer's total imports, %)			Annual percent change
			1st	2nd	3rd	
2016	1.289	6	USA (63)	Italy (12)	Spain (9.3)	-
2017	1.544	12	USA (59)	Spain (16)	Italy (10)	20 %
2018	2.449	13	USA (60)	Spain (17)	Italy (15)	59 %
2019	3.088	15	USA (38)	Italy (24)	Spain (19)	26 %
2020	2.161	20	USA (29)	Italy (27)	Spain (21)	-30 %
2021	2.062	17	Italy (30)	USA (22)	Spain (21)	-5 %
2022	2.700	19	Italy (35)	Spain (20)	Russia (19)	31 %

Remarks: Turkey's ranking and main suppliers' data are collected from SIPRI's annual fact sheets on international arms transfers. Import expenditures data are collected from SASAD's annual performance reports. SASAD uses the price level of the respective year and reports the figures directly in USD. The figures are not adjusted to inflation. * At the time of writing, SASAD had not published the performance report for 2023. Thus, the data on imports are only presented up to 2022.

Source: SASAD. Performans Raporu 2012, p. 3; SASAD. Performans Raporu 2015, p. 11; SASAD. Performans Raporu 2022, p.12; SASAD. Performans Raporu 2021, p.16; SASAD. Performans Raporu 2020, p.13; SASAD. Performans Raporu 2019, p.13; SASAD. Performans Raporu 2018, p.13; SASAD. Performans Raporu 2017, p. 13; SASAD. Performans Raporu 2016, p. 13.

Throughout the years discussed here, but mostly since 2016, most of Turkey's defence imports derived from Europe and the US, followed by "other countries," as the Defence and Aerospace Industry Manufacturers Association (SASAD) categorises the rest of the world's exporters. The share of other countries progresses as follow, see Table 3:

Table 3. Turkey's defense imports from "other countries" 2016-2022.

2016	2017	2018	2019	2020	2021	2022
15 %	7,6 %	8 %	10 %	13 %	15 %	11 %

After dipping between 2018 and 2019, the share of other countries has increased again since 2020.⁶⁷ 70 % of its imports are still from the American and European industries on which the Turkish defence industry has long remained dependent.

Nevertheless, diversification efforts are becoming more visible. As shown in Table 2, Turkey received 19 % of its defence imports from Russia in 2022. According to SIPRI data, even in 2023, imports from Russia accounted for 15 % of Turkey's defense imports.⁶⁸ For subsystems vital for the domestic manufacturing of platforms, Turkey has opened up to new markets, as marked by the recent USD 200 million agreement with a South Korean company for the procurement of engines and automatic transmissions.⁶⁹ Turkey had already purchased trainer

aircraft and armoured vehicles from South Korea, delivered in 2012 and 2020, respectively.⁷⁰ The most recent addition, however, sheds light on the qualitative shift in Turkish imports, as well as Turkey's desire to spread out its dependency channels.

The Qatari, Ukrainian, Pakistani, and Chinese defence industries are more examples of the visibility of Turkish diversification efforts. Ukraine is a friendly, albeit not yet traditional ally of the West. In the Turkish perspective, cooperation with Ukraine is a case of diversification. The cooperation between the countries has deepened, as seen in the acquisition of Ukrainian engines for the Akıncı and Kızılelma drones, as well as the ATAK helicopter; or in the agreement on producing Turkish drones in Ukrainian factories.⁷¹ Pakistan, another diversification partner, is neither a traditional nor necessarily friendly ally of the West, as it enjoys tight defence industry cooperation with China. Nevertheless, the Turkish defence industry serves the Pakistani armed forces through multiple projects.⁷² An example is a project for the modernisation of the Pakistani Navy's submarines.⁷³ In a similar vein, Turkish-Qatari relations have intensified since 2014 and recently led to the signing of multiple defence cooperation agreements.⁷⁴ The cooperation between the countries has deepened particularly since 2018 under the auspices of BMC, a Turkish-Qatari venture that manufactures and repairs military vehicles.⁷⁵ In a similar pattern of diversification of defence industry cooperation, common Turkish-Chinese efforts resulted in the production of the Bora tactical ballistic missile

in 2017.⁷⁶ Among the ssb's priorities for enhancing the sustainable development of the defence industry and reducing the sector's vulnerability, the 2024–2028 Strategic Plan highlights the need for diversification.⁷⁷ Thus, it should be expected that Turkey's diversification efforts, in the form described above, will broaden.

A factor that should be kept in mind, however, is that imports are tightly linked to depreciation of the local currency. The imported systems and components are priced in the currency of the suppliers, which has the effect of raising the cost of system integration and production for the Turkish companies.⁷⁸ This problem will remain as long as the Turkish lira is volatile.

Thus, despite positive developments, an evaluation of imports and diversification efforts indicates that Turkey has not yet effectively reached the goal of strategic autonomy.

CONCLUDING REMARKS AND FUTURE PROSPECTS

Strategic autonomy can be seen along a spectrum: countries aim for different levels of autonomy in various areas of strategic interest. Not even global powers attain absolute strategic autonomy in all areas. Independent foreign-policy action, however, requires self-reliance and thus self-sufficiency in absolute terms. In Turkey, defence industry developments, particularly since 2016, indicate maturing capabilities. However, the existing bottlenecks suggest that the country has a long way to go before attaining self-sufficiency and being able to set in motion its military capabilities in a manner completely unhindered by its allies.

All indicators chosen for evaluating self-sufficiency suggest the same. The industry scores high on *level of indigenisation* (currently 80%), yet the non-indigenised 20% regards critical (sub)systems without which the locally manufactured products can neither operate, nor fulfil their potential. Vulnerabilities in posture continue Turkey's dependency on its allies, for example, when considering missile defence. Due to diversification efforts, Turkey's *lingering dependencies* even apply to non-traditional allies, such as Russia and Qatar. However, some dependencies have political value. For instance, Turkey's radar and sensor infrastructure is integrated into NATO's architecture, providing Turkey with benefits in terms of intelligence-gathering, algorithmic-warfare capacity, and interoperability through the advanced networks of NATO member states. This indicates that relative (instead of absolute) autonomy is not only a result of capability but also of choice. Turkey enjoys positive trends regarding the *sustainability of its defence industry*, as exports increase both in quantity and

in terms of diversification, and the Presidency invests considerably on international cooperation efforts and R&D. Moreover, although the local manufacture of dual-use products is limited, there is an array of assets for civilian use that the Turkish defence sector can tap into. However, none of these factors is immune to foreign influence; for instance, export licenses usually pass through third parties. Factors such as the brain drain among the qualified workforce, the innovation deficit within the country's R&D efforts, and the lack of start-ups negatively affect the sector's sustainability and Turkey's capacity to compete in international markets.

Although Turkey's *defence imports* are vulnerable to the currency crisis and have not decreased considerably, they have undergone a qualitative transformation, maintaining a need for (sub)systems and components rather than major platforms. However, some of those subsystems, for example engines, are essential both for pushing the indigenisation of the industry and the country's export potential. Lastly, considering Turkey's *diversification efforts*, vital steps have been taken for opening up to new markets, both for imports and for cooperation, yet the largest part of Turkey's supply chains still lies with the country's traditional allies in the West. Future research should look into how lingering dependencies regarding machine tools affect the potential for manufacturing the systems that Turkey's defence industry currently focuses on.

As in the red apple myth, the more distant the goal of strategic autonomy the more alluring it becomes. Turkey is monitoring all regional conflicts and uses the lessons learned for defining which assets will be critical in the future of warfare and for fuelling its own efforts in the high-tech defence industry. Regarding future prospects, the ssb invests in all areas it considers to be building blocks for the industry's self-sufficiency. Although the country would prefer to produce all systems independently, it is not economically feasible. The latest Strategic Plan highlights the desire to increase cooperation projects. This not only facilitates diversification, but also gains Turkey leverage vis-à-vis its Western allies for integrating the country in the West's military industry complex. The documented desire for cooperation projects sends the message that in the case of limited interest from the West, Turkey could instead enhance its efforts to integrate itself into alternative cooperation networks.

Areas where the country would prefer *complete independence* are the production of ammunitions, robotics, and drones. Successful developments in these areas would provide Turkey with a competitive edge, which would open up a larger space for the country

in the transatlantic community's armaments network. The naval shipbuilding industry is also an area where Turkey should be expected to continue to operate independently. Thus, major naval systems and combat management systems for warships are examples of products that Turkey would like to manufacture on its own. Examples of subsystems are electronic warfare systems, software, and optics.

To share the high costs and technical risks, and to enhance foreign policy benefits, aircraft and sophisticated drones could be areas where the Turkish defence industry is *willing to cooperate*, provided that Turkey retains local expertise. Considering the S-400 deal, however, it is uncertain which Western countries would be willing to cooperate with Turkey in this area. *Cooperation with mutual independence* would potentially regard testing and certification, design and engineering processes, advanced weapon system production, and sensors and radars. Currently, Turkey both procures off-the-shelf items and manufactures indigenous products in areas such as ammunition, weapon systems for platforms, and infantry weapons. *Off-the-shelf procurement* can be expected to continue, for example, regarding microchips and semiconductors, yet unlikely for major platforms (if the decision is made according to the industry's needs). However, whether Turkey will procure a major platform in the near future will also depend on its progress in building its fifth-generation fighter jet, TAI KAAN. Considering the analysis of the

country's threat landscape, it is not impossible that the country purchases fifth-generation fighter jets until the locally produced model enters the armed forces' arsenal. Lastly, areas where Turkish defence *R&D efforts* should be expected to focus are smart technologies and high-tech defence technology that counters emerging disruptive technologies.

From Turkey's perspective, strategic autonomy is not a force that intrinsically drives Turkey away from NATO, nor is it in conflict with collective defence. Cooperation with states that the West sees as adversaries or antagonists is seen in Turkey as part of the country's efforts to broaden its partnership network in order to circumvent limitations imposed by external powers. Through strategic autonomy, and in an effort to build up its posture and spread out or decrease its dependencies, Turkey is trying to recalibrate its role in the region, increase its value for the West, and reintroduce itself as an equal partner. This has the ambition of influencing the West's threat-perception analysis and its ability to attain its goals. The way Turkey operationalises strategic autonomy in its defence industry efforts progressively provides it with greater latitude for independent action. Whether or not NATO and the EU countries eventually decide to integrate Turkey more deeply into the West's defence architecture and military-industrial complex will determine whether Turkey utilises its maturing military capabilities to serve the alliance's shared goals or pursue its own regional ambitions. ■

Endnotes

- 1 Interview with Professor Serhat Güvenç, Istanbul, 28 March 2024.
- 2 Examples include holistic defense, defense autarky, and operational independence.
- 3 Turkey's national security strategy continues to be based on i) "active deterrence," which entails coercive diplomacy combined with military means to tackle regional threats, and 2) the "two-and-a-half-war doctrine," which means that Turkey maintains high combat-readiness to fight two conventional wars and at the same time run an anti-PKK low-intensity campaign both within and outside Turkish territory. See Kasapoğlu, Can (2022) "Techno-Geopolitics and the Turkish way of drone warfare," Atlantic Council in Turkey.
- 4 This is the author's own definition, resulting from the analysis of both primary and secondary data.
- 5 Interview with Professor Murat Yeşiltaş, SETA, Istanbul, 21 March 2024.
- 6 Interview with Professor Serhat Güvenç, Istanbul, 28 March 2024.
- 7 Interview with Özgür Ünlühisarcıklı, German Marshall Fund, Ankara, 2 April 2024.
- 8 See Bağcı, Hüseyin, Kurç, Çağlar (2017) "Turkey's strategic choice: Buy or make weapons?" *Defense Studies*, Vol. 7(1), p. 42, 43.
- 9 See Kutlay, Mustafa, Öniş, Ziya (2021) "Turkish foreign policy in a post-western order: Strategic autonomy or new forms of dependence?" *International Affairs*, Vol. 97(4), p. 1085–1104.
- 10 See Kasapoğlu, Can (2020) "Turkey's burgeoning defense technological and industrial base and expeditionary military policy," *Insight Turkey*, Vol. 22(3).
- 11 See for example Rossiter, Ash, Cannon, Brendon, J. (2022) "Turkey's rise as a drone power: trial by fire", *Defense and Security Analysis*, Vol. 38(2), p. 210-229.
- 12 Egelı, Sıtkı, Güvenç, Serhat, Kurç, Çağlar, Mevlütoğlu, Arda (2024) "From client to competitor: The rise of Türkiye's defence industry," *İSS*, p. 22.
- 13 For a detailed historical overview of the defense industry developments in Turkey, see Egelı, Güvenç, Kurç, Mevlütoğlu, 2024, p. 5–9.
- 14 *Ibid*, p. 11.
- 15 The coup in 1997, where the military ousted the religious Welfare Party-led government, is referred to as postmodern because it was carried out through pressure behind the scenes, instead of direct military intervention.
- 16 *Hürriyet* (2005) "Savunmada ortak üretim dönemi bitiyor" [The era of joint production in defense is ending], 7 July.
- 17 *Hürriyet* (2004) "Tank ve helikopter ihaleleri iptal edildi" [Tank and helicopter tenders cancelled], 14 May.
- 18 Egelı, Güvenç, Kurç, Mevlütoğlu, 2024, p. 18; Savunma Sanayii Müstesarlığı. "2018–2022 Savunma Sanayii Sektörel Strateji Dokümanı" [Undersecretariat for Defence Industries, 2018–2022 Defense Industry Sectoral Strategy Document], p. 32.
- 19 Interview with defence expert, Dr. Çağlar Kurç, Ankara, 2 April 2024. System integration refers to the capacity of a defence company to bring together diverse components and ensure the proper functioning of the final product.
- 20 Nugent, Bob (2023) "The MILGEM Programme: Turkish Naval Procurement and Exports," *European Security and Defense*, 31 May.
- 21 Seren, Merve (2020) "Turkey's military spending trends: A reflection of changes in defense policy," *Insight Turkey*, Vol. 22(3), p. 204.
- 22 Egelı, Sıtkı (2019) "Making sense of Turkey's air and missile defense merry-go-round," *All Azimuth*, Vol. 8(1), p. 69–91.
- 23 Savunma Sanayii Müstesarlığı. "2018–2022 Savunma Sanayii Sektörel Strateji Dokümanı" [Undersecretariat for Defense Industries, 2018–2022 Defense Industry Sectoral Strategy Document], p. 11.
- 24 Savunma Sanayii Başkanlığı (SSB) is translated as the Defence Industry Agency.
- 25 Interview with defence-industry expert on condition of anonymity, Ankara, 5 April 2024.
- 26 Savunma Sanayii Başkanlığı. *2024–2028 Stratejik Planı*, p. 26.
- 27 Interview with Sine Özkaraşahin, EDAM, Istanbul, 18 April 2024.
- 28 Akça, İsmet, Özden, Barış, Alp (2021) *A political economic map of the Turkish defense industry*. Heinrich Böll Stiftung, p. 40.
- 29 Savunma Sanayii Başkanlığı. *2024–2028 Stratejik Planı*, p. 17, 80.
- 30 Interview with defence-industry expert on condition of anonymity, Ankara, 3 April 2024.
- 31 Simply put, machine tools are the machines that produce machines and thereby weapons systems. *South East European Industrial Market* (2024) "Türkiye's machine tool market," 18 March.
- 32 TIAD. *Türkiye Takım tezgahları ve tamamlayıcı ekipmanları 2023 — 3. Çeyrek sektör analizi*. [Turkey machine tools and complementary equipment 2023 — Q3 sector analysis], p. 2.
- 33 Kasapoğlu, Can (2022) "Transforming from arms importer to trendsetter: Assessing the growth of Turkey's defense industries," *Defense Journal by Atlantic Council in Turkey*, 22 December.
- 34 İSS. Chapter Three: Europe: The military balance 2024, p. 148–150.
- 35 *Turkish Defense News* (2022) "Turkish navy to integrate ATMACA missiles to all combat platforms," 6 February.
- 36 Kasapoğlu, Can (2020) "Turkey's burgeoning defense technological and industrial base and expeditionary military policy," *Insight Turkey*, Vol. 22(3).
- 37 *Milliyet* (2024) "Milli uçak KAAN gök vatanda! İşte F-16 ve KAAN karşılaştırması" [National aircraft KAAN is in the sky homeland! Here is the comparison between F-16 and KAAN], 22 February.
- 38 Sünnetci, İbrahim (2024) "Turkish Defense & Aerospace Industry Makes a Grand Entrance at WDS 2024 with 65 Companies!" *Defense Turkey*, Vol. 18(130).
- 39 Interview with Sine Özkaraşahin, EDAM, Istanbul, 18 April 2024.
- 40 Wezeman, Pieter et al. (2024) *Trends in international arms transfer, 2023*. SIPRI Fact Sheet, p. 2.

- 41 *Hürriyet* (2024) “Savunma Sanayii’nden 2023 yılında 10 milyar dolarlık sözleşme” [10 billion dollar contract from Defense Industry in 2023], 17 February.
- 42 Savunma Sanayii Başkanlığı. *2024–2028 Stratejik Planı*, p. 96.
- 43 Akça, Özden, 2021, p. 55.
- 44 Studt, Tim (2022) *Global R&D Funding Forecast 2022*. Industrial Research Institute.
- 45 Organisation for Economic Co-operation and Development (OECD), Research and Development Statistics (RDS) Database.
- 46 Savunma Sanayii Başkanlığı. AR-GE ve Teknoloji Yönetim Portalı, [R&D and Technology Management Portal], *Ar-Ge Paneli (ssb.gov.tr)*
- 47 Seren, 2020, p. 205.
- 48 Savunma Sanayii Başkanlığı. *2024–2028 Stratejik Planı*, p. 15, 55.
- 49 Savunma Sanayii Başkanlığı. *2018–2022 Savunma Sanayii Sektörel Strateji Dokümanı* [2018–2022 Defense Industry Sectoral Strategy Document], p. 10.
- 50 Volkan Öskiper, Turkey’s ministry of Foreign Affairs, Speech at Atlantic Council’s virtual event “Turkey’s emerging defense technologies and the future of NATO,” 9 July 2024.
- 51 European Commission. “European Innovation Scoreboard 2023,” p. 28.
- 52 *Ahval* (2019) “Exodus from Turkey hits defense contractors,” 9 January. For an explanation of the brain drain in the sector, also see Savunma Sanayii Dergilik (2019) “Savunma sanayii ve beyin göçü” [Defense industry and brain drain], 17 April.
- 53 Savunma Sanayii Başkanlığı. *2019–2023 Stratejik Planı*, p. 70; Savunma Sanayii Başkanlığı. *2024–2028 Stratejik Planı*, p. 44.
- 54 Savunma Sanayii Başkanlığı. *2024–2028 Stratejik Planı*, p. 91, 92.
- 55 See U.S. Department of the Treasury, (2023) “Treasury Targets Russian Financial Facilitators and Sanctions Evaders Around the World,” 12 April.
- 56 See Wassenaar Arrangement Secretariat (2023) “Wassenaar Arrangement on export controls for conventional arms and dual-use goods and technologies. Public documents Volume II. List of dual-use goods and technologies and munitions list.”
- 57 *Savunma Sanayii Dergilik* (2023) “Savunma teknolojilerinde çift kullanım” [Defense Industry Magazine (2023) “Dual use in defense technologies], 18 April.
- 58 Savunma Sanayii Başkanlığı. *2024-2028 Stratejik Planı*, p. 43, 65.
- 59 Savunma Sanayii Başkanlığı. *2024-2028 Stratejik Planı*, p. 65.
- 60 Interview with defense industry expert, on condition of anonymity, Ankara, 4 April 2024.
- 61 Tirpak, John, Everstine, Brian (2019) “Cold Turkey: Shanahan pushes Ankara out of F-35,” *Air and Space Forces Magazine*, 7 June.
- 62 Savunma Sanayii Başkanlığı. *2017–2021 Stratejik Planı*, p. 54.
- 63 Savunma Sanayii Başkanlığı. *2024-2028 Stratejik Planı*, p. 61.
- 64 Ibid.
- 65 Interview with defense expert, Dr. Çağlar Kurç, Ankara, 2 April 2024.
- 66 Wezeman, Pieter et al (2024) *Trends in international arms transfer, 2023*. SIPRI Fact Sheet, p. 6.
- 67 SASAD. *Performans Raporu 2022*, p.12; SASAD. *Performans Raporu 2021*, p. 16; SASAD. *Performans Raporu 2020*, p.13; SASAD. *Performans Raporu 2019*, p.13; SASAD. *Performans Raporu 2018*, p.13; SASAD. *Performans Raporu 2017*, p. 13; SASAD. *Performans Raporu 2016*, p. 13.
- 68 Wezeman, Pieter et al (2024) *Trends in international arms transfer, 2023*. SIPRI Fact Sheet, p. 6.
- 69 Tiwari, Sakshi (2023) “Turkey signs \$200 million deal with South Korea as Seoul starts eating into European defense market,” *Eurasian Times*, 31 January.
- 70 SIPRI. Arms transfer database.
- 71 Dost, Pinar (2024) “The Ukraine-Turkey defense partnership with the potential to transform Black Sea and Euro-Atlantic security,” *Atlantic Council*, 5 March; *Shephard* (2021) “Turkish Aerospace buys Ukrainian engines for Atak,” 6 July.
- 72 Siyez, Baladır (2023) “Pakistan-Türkiye defense industry cooperation,” *Defence Turkey*, Vol. 17(121), p. 34–35.
- 73 STM. Pakistan Navy AGOSTA 90B Class Submarine Modernization Project: Khalid Class Agosta PNS Hamza.
- 74 *Anadolu Agency* (2023) “Türkiye, Qatar sign 12 agreements, issue joint declaration after high strategic committee meeting,” 4 December.
- 75 Adly, Ayman (2022) “BMC Türkiye welcomes cooperation with Qatari companies,” *Gulf Times*, 26 September.
- 76 Kasapoğlu, Can (2019) “Turkey’s Bora missile saw combat debut: What next?” *Anadolu Agency*, 19 May.
- 77 Savunma Sanayii Başkanlığı. *2024-2028 Stratejik Planı*, p. 54.
- 78 Saleh, Deena (2023) “An economic perspective into Türkiye’s Defense Sector and Arms Production: Domestic and Global Implications,” PRISME, Spring 2023, p. 5.