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DEFENCE EXPENDITURES IN TÜRKİYE: STRUCTURAL OUTLOOK, DEVELOPMENT PLANS, AND THE RELATIONSHIP WITH ECONOMIC GROWTH¹

TÜRKİYE'DE SAVUNMA HARCAMALARI: YAPISAL GÖRÜNÜM, KALKINMA PLANLARI VE EKONOMİK BÜYÜME İLİŞKİSİ

Elif SAFKAN AYAZ*, Tolga OMA Y **

*LecturerDr, Ankara University, Technology Transfer Office, Ankara, Türkiye; PhD Candidate, Political Economy, Atılım University, Ankara, Türkiye. E-mail: eayaz@ankara.edu.tr; ORCID: 0009-0008-1429-9505

**Prof. Dr., Department of Economics, Atılım University, Ankara, Türkiye. E-mail: tolga.omay@atilim.edu.tr; ORCID: 0000-0003-0263-2258

ARTICLE INFO	ABSTRACT
Received 10.03.2026 Revized 20.04.2026 Accepted 28.05.2026 Article Classification: Research Article JEL Codes H56 L64 O40	<p>This study aims to present the general framework of defence expenditures in Türkiye by examining their historical development, the structural composition of the defence budget, their position within national development plans, and the empirical literature on the defence–growth nexus. The study adopts a descriptive and structural analysis approach, drawing on SIPRI and NATO expenditure data, the texts of Türkiye’s twelve five-year development plans, and a systematic review of the econometric literature on Türkiye. The findings reveal that the defence burden has followed a fluctuating path shaped jointly by geopolitical position, security threats, alliance dynamics and macroeconomic shocks; that the budget composition has shifted from a personnel-heavy structure toward equipment, infrastructure and R&D-oriented spending; and that successive development plans have progressively repositioned the defence industry as a strategic priority sector. The empirical literature remains inconclusive, supporting the Keynesian, neo-classical and neutrality hypotheses in roughly equal measure. The study concludes that the macroeconomic effects of defence spending in Türkiye are contingent on the time period, economic conjuncture and the structure of the domestic defence industry.</p> <p>Keywords: Defence Expenditures, Türkiye, Defence Industry, Development Plans, Economic Growth</p>

MAKALE BİLGİSİ	ÖZ
Gönderilme Tarihi 10.03.2026 Revizyon Tarihi 20.04.2026 Kabul Tarihi 28.05.2026 Makale Kategorisi Araştırma Makalesi JEL Kodları H56 L64 O40	<p>Bu çalışmanın amacı; savunma harcamalarının tarihsel gelişimini, savunma bütçesinin yapısal bileşimini, kalkınma planları içindeki konumunu ve savunma–büyüme ilişkisine yönelik ampirik yazını inceleyerek Türkiye’de savunma harcamalarının genel çerçevesini ortaya koymaktır. Çalışmada betimsel ve yapısal analiz yaklaşımı benimsenmiş; SIPRI ve NATO harcama verileri, Türkiye’nin on iki beş yıllık kalkınma planının metinleri ve Türkiye üzerine ekonometrik yazının sistematik bir değerlendirmesi kullanılmıştır. Bulgular; savunma yükünün jeopolitik konum, güvenlik tehditleri, ittifak dinamikleri ve makroekonomik şoklar tarafından birlikte şekillendirilen dalgalı bir seyir izlediğini; bütçe kompozisyonunun personel ağırlıklı bir yapıdan araç-gereç, altyapı ve Ar-Ge odaklı bir yapıya kaydığını; ardışık kalkınma planlarının savunma sanayiini giderek stratejik bir öncelik sektörü olarak yeniden konumlandığını göstermektedir. Ampirik yazın ise Keynesyen, neo-klasik ve tarafsızlık hipotezlerini yaklaşık olarak eşit ölçüde destekleyerek belirsizliğini korumaktadır. Çalışma, Türkiye’de savunma harcamalarının makroekonomik etkilerinin zaman dilimine, ekonomik konjonktüre ve yerli savunma sanayiinin yapısına bağlı olduğu sonucuna ulaşmaktadır.</p> <p>Anahtar Kelimeler: Savunma Harcamaları, Türkiye, Savunma Sanayii, Kalkınma Planları, Ekonomik Büyüme</p>

¹ This study is derived from the corresponding author’s ongoing doctoral dissertation conducted at Atılım University.

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Introduction

Throughout history, defence expenditures have constituted a security imperative for most states. In the case of Türkiye, however, they have ceased to be merely a military preference and have become an instrument of economic and technological transformation as well. By virtue of its geopolitical location, Türkiye is situated at the intersection of Europe, the Middle East and Asia, at a critical geostrategic juncture. As a consequence of this position, regional conflicts, border security, counter-terrorism activities and international security alliances rank among the determining factors that shape Türkiye's defence policies. This situation has caused defence expenditures to occupy a significant place within the public budget and has led to the long-term continuation of policies aimed at strengthening defence capacity.

From the 2000s onward, the scope of Türkiye's defence policies expanded considerably, and defence expenditures went beyond being a mere instrument for meeting military needs to become a strategic policy domain. These policies have aimed at expanding the defence industry and increasing its technological capacity. Among the key policy objectives in Türkiye's development plans are the development of the defence industry, the increase of domestic production capacity and the reduction of external dependency in defence technologies. In particular, within the scope of the Tenth Development Plan (2014–2018) and the Eleventh Development Plan (2019–2023), strengthening domestic and national production in the defence industry, developing high value-added defence technologies and increasing research and development activities were emphasised as priority policy areas (Ministry of Development, 2013; SBB, 2019). This approach demonstrates that defence expenditures are evaluated not merely as an expenditure item for meeting security needs, but also as an important policy tool for developing technological capacity and enhancing the competitiveness of the defence industry.

This study examines the historical development of defence expenditures in Türkiye, the structure of the defence budget and defence industry capacity. In addition, by addressing Türkiye's security environment and defence policies, the economic and strategic dimensions of defence expenditures are evaluated. Accordingly, the general framework of defence expenditures in Türkiye is set out, and the empirical literature on the defence–growth nexus is systematically reviewed. The study is structured in four parts: the first part traces the historical development of the defence burden over the 1960–2024 period; the second part analyses the structural composition of the defence budget; the third part evaluates defence expenditures from the perspective of the development plans; and the fourth part reviews the empirical literature on the relationship between defence expenditures and economic growth in Türkiye.

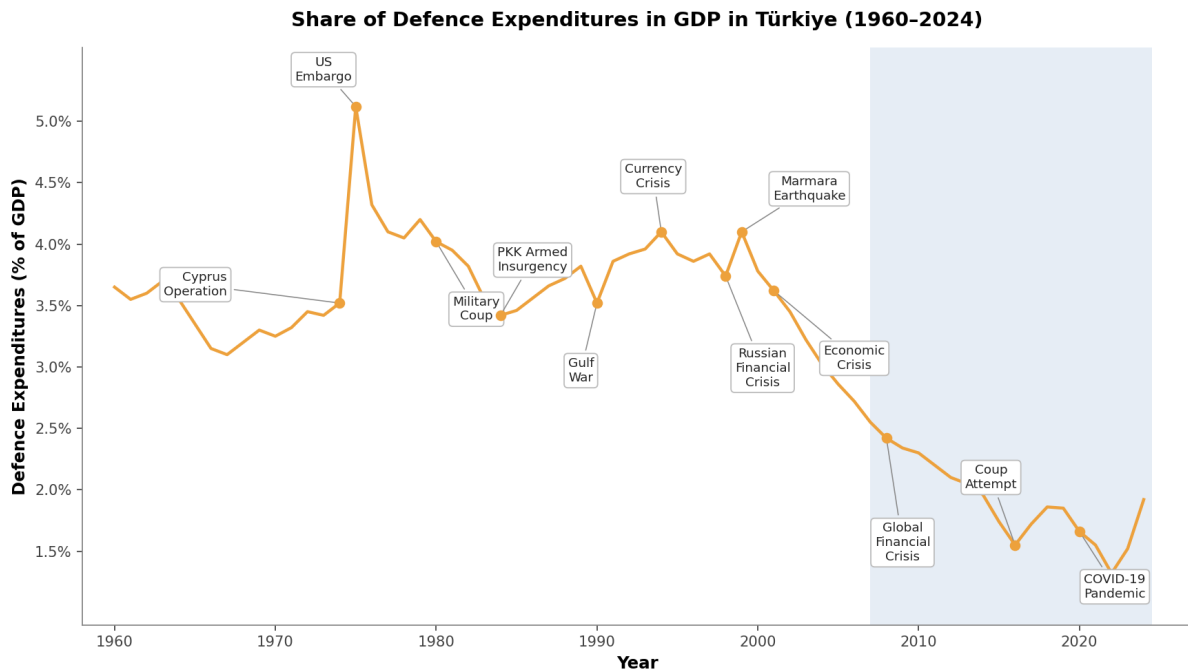
1. The Historical Development of Defence Expenditures in Türkiye

Defence expenditures are among the most important instruments of states' national security policies. The level of these expenditures is determined not only by military needs but also by multifaceted factors such as geopolitical position, security threats, economic capacity and defence policies. When this situation is evaluated for Türkiye, the development of defence expenditures is largely related to the country's geopolitical position and security environment. In their study empirically examining the demand for Turkish defence expenditure, Sezgin and Yildirim (2002) concluded that Türkiye's defence spending is significantly determined by NATO's total expenditures, Greece's defence expenditures and security-related variables.

There are three fundamental reasons for the high level of military expenditures in Türkiye. The first is the prominent role of the military within the political system over many years; in particular, the three military coups in Türkiye's political history and the central role of the armed forces in decision-making processes are considered an institutional factor underlying the high level of defence spending. The second reason is the transformation in Türkiye's defence industry policies: especially from the 1980s onward, a significant change occurred in Türkiye's defence strategy, and an import-substituting approach aimed at reducing external dependency in arms production was adopted. The third reason is Türkiye's security environment; in particular, the prolonged low-intensity conflict in the Southeastern Anatolia Region increased not only arms procurement but also other operational defence expenditures (Elveren, 2021: p. 169).

One of the most widely accepted indicators in analysing the development of defence expenditures is the share of defence spending in GDP. Figure 1 presents the development of the share of defence expenditures in GDP in Türkiye over the 1960–2024 period. When the data obtained from the SIPRI database are examined, it is seen that the share of defence expenditures in GDP has followed a fluctuating course over time. The most striking period in the figure is the highest level of spending observed in the 1960s and 1970s, when expenditures approached 5 per cent in certain years. Owing to geopolitical tensions and the military embargoes imposed after the Cyprus Peace Operation, Türkiye's defence expenditures peaked historically in 1975, reaching 5.12 per cent of GDP. This ratio represents the highest “military burden” level within the 1960–2024 period examined. This experience laid bare the extent to which Türkiye's one-sided dependence on the United States for arms and equipment procurement constrained its strategic autonomy and created a serious vulnerability in its decision-making mechanisms (Egeli et al., 2024: p. 9). This pressure led to fundamental strategic changes in Turkish defence policy. Acting under the motto of “producing one's own weapons with one's own resources,” TUSAŞ was established in 1973 and ASELSAN in 1975. Today, these companies form the backbone of the Turkish defence industry.

Figure 1: The Share of Defence Expenditures in GDP in Türkiye (1960–2024)



Source: Compiled by the authors from the SIPRI Military Expenditure Database (SIPRI, 2025).

The reason expenditures remained at such high levels in the 1970s is both a reflection of the security paradigms of the Cold War era and a direct result of the country's strategic positioning, given Türkiye's responsibility for forming the southeastern flank of the NATO alliance (NATO, 2012). As stated by Egeli et al. (2024: p. 5), the bipolar structure of the Cold War stalled Türkiye's industrialisation initiatives in the defence sphere; the authors emphasise that immediate security concerns during this period took precedence over the long-term development of the defence industry.

Although periodic fluctuations are observed in the figure from the late 1980s onward, the defence burden remained relatively stable within a certain band. During this period, the defence burden was directly affected on the one hand by the armed activities of the PKK, which began in 1984 and peaked in 1999, and on the other hand by the regional instability created by the Iran–Iraq War (1980–1988) and the First Gulf War (1990–1991) (Seren, 2020: pp. 191, 197). PKK-related terrorism imposed a measurable cost directly, both on the defence budget and on economic output. Using the synthetic control method, Bilgel and Karahasan (2017) demonstrated that the real GDP of the provinces in the Eastern and Southeastern Anatolia regions over the 1988–2001 period was approximately 7 per cent lower than it would otherwise have been.

This period also emerged as one in which Türkiye was subjected to serious restrictions in defence procurement. While many NATO countries preferred to reduce their defence expenditures with the end of the Cold War, the PKK attacks Türkiye faced and the Turkish–Greek tension brought the need for urgent procurement onto the agenda. Allies in the post-Cold War strategic environment were reluctant to meet this need. Citing operations against the PKK, several allies—particularly Switzerland, Norway and Germany—halted sales of military equipment, and some contracts concerning artillery, missiles and naval platforms were cancelled. In the same period, the Clinton administration in the United States also looked unfavourably on Türkiye's requests for attack helicopters and additional frigates (Egeli et al., 2024: p. 14). While these embargoes made it difficult to meet military needs in the short term, they clearly revealed the structural fragilities of the import-dependent defence procurement model. These developments paved the way for strengthening policies aimed at developing the domestic defence industry and for accelerating localisation efforts in defence production.

During this period, the distribution of defence expenditures was shaped not only by security pressures but also by economic constraints. Seren (2020: p. 197) emphasises that, in examining Türkiye's military expenditure trends, not only security risks and threat perceptions but also macroeconomic and structural shocks—such as the 1994 currency crisis, the 1998 Russian financial crisis, the 1999 Marmara earthquakes and the 2000–2001 economic crises—must be taken into account. Having faced periodic economic crises since the 1990s, Türkiye saw its growth rate decline to –9.5 per cent in 2001, the lowest value of the post-1945 era. Following this crisis, Türkiye launched the “Transition to a Strong Economy Programme” in 2002, implementing tight monetary and fiscal policies, and regained economic stability with an average growth rate of 5.2 per cent over the 2002–2012 period (Seren, 2020: pp. 197–198). Thus, the fluctuations in defence expenditures during this period cannot be explained by a single component; threat perception, procurement constraints and economic conditions exerted a simultaneous and holistic effect.

The increase observed in Türkiye's defence expenditures after 2002 is the product of a multidimensional transformation that cannot be explained by a single factor. Erdağ (2021) argues

that the increase in Türkiye's military expenditures during this period can be explained not only by diversifying security threats, but also by the pursuit of autonomy, the desire to become a regional actor, the increase in economic capacity, efforts to nationalise the defence industry, and NATO's inability to provide an adequate security umbrella, particularly against missile threats. The new government that came to power in 2002 represents the beginning of a radical transformation process in the defence industry. With the appointment in 2004 of the first civilian head of the Undersecretariat for Defence Industries (SSM) with a defence industry background, Türkiye entered an era of "domestic solutions" that replaced the previous model based on joint ventures and technology transfer. Within the framework of this new approach, the Altay Main Battle Tank, the T129 ATAK attack helicopter, the Anka UAV and the MİLGEM corvette programmes were realised (Egeli et al., 2024: pp. 16–17). These programmes point to a structural break that transformed not only the quantitative magnitude of Türkiye's defence expenditures but also their qualitative composition.

The ground on which this multidimensional transformation took concrete form was the relatively stable and favourable security conjuncture that Türkiye enjoyed in the early 2000s. During this period, the terror threat was brought largely under control, relations with neighbouring countries moved toward normalisation, and Russia, given its economic and political capacity at the time, did not pose a direct challenge to Türkiye (Kurç et al., 2025: p. 392). This favourable conjuncture opened space for a radical and structural transformation in the defence industry. The restrictive approach of foreign partners and export-control authorities to the transfer of advanced technology pushed Türkiye toward developing its own production capacity, although this process also entailed challenges such as rising costs and prolonged production times (Kurç et al., 2025: p. 392; Cakirozer, 2003). For example, the United States did not grant access to the software source codes and the threat library of the self-protection systems supplied for Türkiye's F-16 aircraft (Cakirozer, 2003, as cited in Kurç et al., 2025: p. 392). Similarly, although Türkiye requested to join the F-35 programme as a Level-2 partner, it was admitted only as a Level-3 partner, and the question of access to source codes remained unresolved (Güvenç and Yanik, 2012: pp. 120, 124–125).

Kurç et al. (2025) comprehensively analyse the gap between the discourse of autonomy in Türkiye's defence industry policy and the structural realities. Türkiye has become a rising supplier in the international arms market with a broad product range extending from unmanned aerial vehicles to armoured vehicles, from corvettes to precision munitions, and captured a 1.6 per cent share of global arms exports in the 2019–2023 period (Kurç et al., 2025: p. 383). However, the most critical turning point of this period occurred with the procurement of the S-400 system in 2017. Türkiye's choice of an air defence system incompatible with NATO systems led to significant tensions in its defence cooperation relations with its allies. This process became one of the principal elements of the developments that led the United States to impose sanctions on Türkiye and ultimately to Türkiye's removal from the F-35 programme in 2019 (Egeli et al., 2024: pp. 22–23).

After 2016, the defence industry gained significant momentum: the sector's total turnover reached USD 8.9 billion in 2020, the cumulative contract value rose to USD 60 billion in 2022, and the number of defence projects increased from 62 in 2002 to 812 in 2022 (Adar and Tanrıverdi Yaşar, 2023: pp. 4–5). However, a serious financial fragility also emerged during this acceleration. With the depreciation of the Turkish lira from 2018 onward, defence expenditures continued to increase in lira terms but declined significantly in dollar terms. According to SIPRI data, the share of defence

expenditures in GDP fell to 1.5 per cent in 2023, remaining markedly lower than in previous years (Kurç et al., 2025: p. 395). Moreover, payment delays by main contractors to their subcontractors came to threaten the sustainability of the small and medium-sized enterprises in the sector (SASAD, 2018, as cited in Kurç et al., 2025: p. 395). After 2014, the intensification of the Syrian civil war, the emergence of autonomous Kurdish structures and the continued PKK presence in Iraq markedly affected Türkiye's security perception and sustained the military operations conducted in both Iraq and Syria (Akça and Özden, 2025: p. 12); the successful battlefield use of Turkish weapon systems—most concretely the Bayraktar TB2 UAV across different conflict environments—enhanced their appeal through a demonstration effect and contributed directly to the acceleration of exports. Behind these visible successes, however, serious structural problems persisted. The Turkish defence industry has not yet fully overcome its dependence on foreign inputs; as production capabilities have increased, this dependence has shifted from the level of main systems to the level of sub-systems and components (Kurç et al., 2025: pp. 393, 397). The relatively small scale of the domestic defence market exerts pressure on the unit costs of domestic systems and makes it increasingly difficult to achieve economies of scale; the principal way of overcoming this problem has been to turn toward exports. As a concrete reflection of this picture, the unit cost of the KAAN combat aircraft is projected to exceed that of its foreign counterparts, and it is assessed that this cost can be brought to a competitive level only through export orders (Kurç et al., 2025: pp. 395–396). In addition, the transition from prototype to serial production has been beset by cost-efficiency problems. For instance, in the Altay Main Battle Tank project launched in 2004, the 2020 target of delivering 15 tanks was not met; only two tanks had been delivered by April 2023, and the serial-production contract could be signed only in 2024—delays in which the selection of an inexperienced prime contractor and Germany's refusal to supply the power pack played a decisive role (Kurç et al., 2025: p. 396; Fiorenza, 2024; Domingo, 2024). Similarly, in the Boran Howitzer project begun in 2008, testing was planned for completion by 2020, yet deliveries began only in 2022 and serial production in 2023, while the TF-2000 frigate project launched in 2007, expected to be completed in 2021, has yet to be finished (Kurç et al., 2025: p. 396; Yiğitoğlu, 2023; Çavdar, 2024).

When Türkiye's defence expenditures over the 1960–2024 period are examined, it becomes clear that these expenditures are the composite product not only of immediate security concerns, but also of changing alliance dynamics, chronic economic fragilities and radical structural transformations in the defence industry. The tension between the discourse of autonomy and structural external dependency has constituted the defining axis of Türkiye's defence policy throughout this long period.

2. The Structural Analysis of Türkiye's Defence Budget

How much a state spends on defence is as important as the components of which this expenditure consists. The composition of the defence budget is not merely a fiscal choice; it is also an integrated reflection of threat perception, strategic priorities and industrial capacity. Both the pressures created by the country's geopolitical position and the radical changes experienced in the defence industry over the last two decades make it necessary to examine this issue separately for the specific case of Türkiye.

Türkiye's defence budget, historically personnel-intensive and largely dependent on foreign procurement, has gradually evolved toward a composition increasingly focused on domestic production and R&D-oriented modernisation. This transformation is not coincidental; it is the

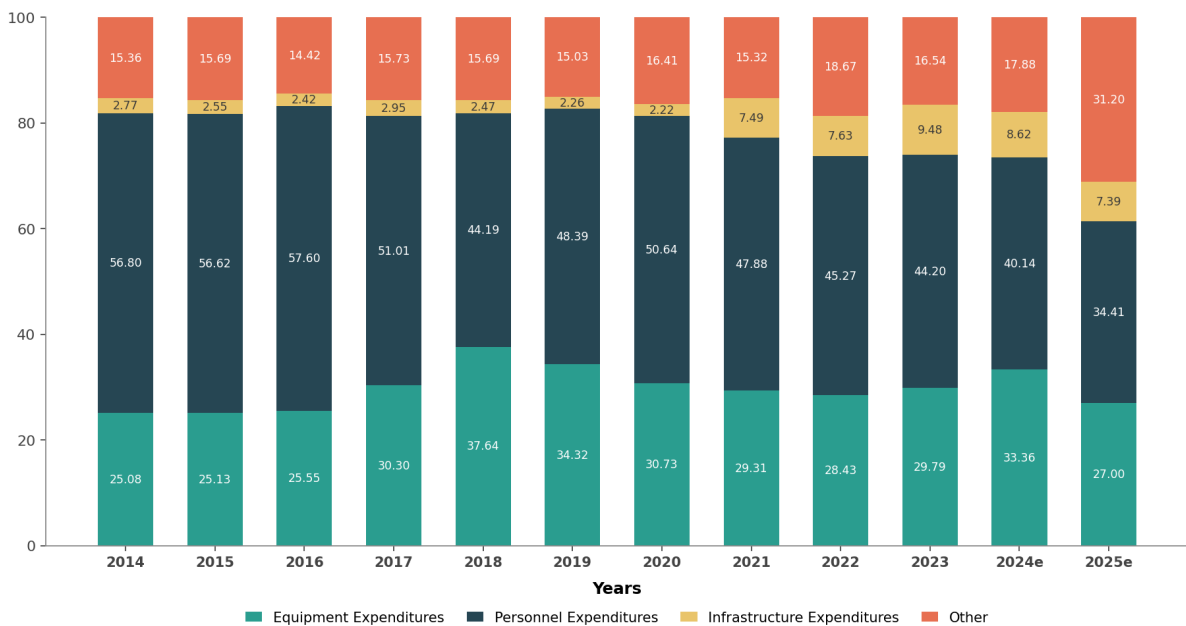
cumulative product of the embargoes Türkiye has faced, economic constraints, the changing threat environment and the state's pursuit of strategic autonomy in defence. In this section, the transformation in question is addressed on the basis of expenditure items. Within the framework of the NATO classification, the shares of personnel, equipment, infrastructure and other expenditure items within the budget are analysed together with their changes over time.

2.1. The Components and Composition of Defence Expenditures

Disaggregating defence expenditures into their components is important for understanding the state's security priorities, strategic orientations and resource-allocation preferences. NATO requires member countries to report their defence expenditures within a common and standard framework. Within this framework, national defence budgets are structured into four main categories: personnel expenditures (including pensions); equipment expenditures, together with research and development (R&D) activities for these systems; infrastructure investments comprising the modernisation and construction of military facilities; and an "other" category covering operation, exercise and maintenance–repair expenditures that sustain the forces (NATO, 2025).

When the component distribution of Türkiye's defence expenditures for the 2014–2025 period is examined within NATO's standard classification, a striking transformation trend is observed alongside structural continuity. Figure 2 presents these findings. Personnel expenditures, which constituted the largest item of the defence budget throughout the period, stand out as the component that underwent the most pronounced transformation. Constituting 56.80 per cent of the total defence budget in 2014, this item reached its highest value of 57.60 per cent in 2016. From that date onward, however, the share declined markedly, falling to 51.01 per cent in 2017 and 44.19 per cent in 2018, pointing to a structural break. Professionalisation, changes in the conscription system and the transition to a more effective army structure played an important role in this process (NATO, 2025).

Figure 2: *The Distribution of Defence Expenditures in Türkiye by Component (Percentage of Total Defence Expenditures)*



e: estimate

Source: Compiled by the authors from NATO (2025: pp. 14–15).

To make sense of this transformation, it is necessary to consider Türkiye's professionalisation process. Özgün (2017) comprehensively analyses the structural pressures driving Türkiye away from a conscription-based system. The global transformation in military organisation—the transition from mass armies to professional armies—has two causes. The first is that, with the end of the Cold War, the security paradigm of the bipolar world underwent a fundamental transformation, giving way to new threats such as ethnic conflicts and terrorism. The second is that modern weapon systems, which have become increasingly complex as a result of technological advances, require more educated and qualified personnel (Özgün, 2017: p. 70). In line with these structural pressures, the transformation process that accelerated after the 2016 coup attempt led to a marked downsizing in the personnel structure of the Turkish Armed Forces (TSK), and this was directly reflected in the budget. The number of conscript personnel, which stood at around 450,000 in 2005, fell to 188,611 after 15 July 2016 (Özgün, 2017: p. 76). The reflection of this sharp decline in the budget directly coincides with the fall in the personnel share in 2017.

Another critical variable explaining the proportional decline in personnel expenditures is the severe depreciation of the Turkish lira. Since NATO defence expenditure data are reported in US dollars, in periods when the lira depreciates against the dollar, Türkiye's dollar-denominated defence budget shrinks, and the proportional share of personnel expenditures paid in lira within the budget declines markedly. In this respect, it is assessed that the decline in the share of personnel expenditures within the budget is in part a structural effect of the exchange rate rather than a genuine cost reduction. During the 2019–2020 period, the personnel share temporarily recovered to around the 48–50 per cent band, as the restructuring of the Turkish Armed Forces was largely completed and the budgetary weight of the conscription-based structure once again made itself felt. In the 2021–2025 period, the share of personnel expenditures entered a renewed and this time more permanent downward trend, recorded at 47.88 per cent in 2021, 45.27 per cent in 2022 and 44.20 per cent in 2023, with projections falling to 40.14 per cent and 34.41 per cent in 2024 and 2025 respectively—the lowest values of the period. This long-term decline points to a structural transformation jointly created by the gradual reduction of the army's strength through professionalisation, the spread of paid military service (*bedelli askerlik*), the reshaping of intra-budget distributions by the depreciation of the lira, and the increasing orientation of defence expenditures toward technology investments.

In contrast to this decline in personnel expenditures, equipment expenditures exhibited considerable fluctuation during the period. Rising from 25.08 per cent in 2014 to a peak of 37.64 per cent in 2018, this item fell to 28.43 per cent in 2022 before rising again to a projected 33.36 per cent in 2024. This increase is directly associated with Türkiye's intensified operational activities after 2016. The widespread use of domestic unmanned aerial vehicles such as the Bayraktar TB2 and ANKA, particularly in theatres such as Syria, Iraq and Libya, significantly increased Türkiye's military operational capacity (Özdemir, 2022; Düz, 2020), raising demand for precision munitions, targeting and support systems. At the same time, the incorporation of domestic defence products such as unmanned aerial vehicles, armoured combat vehicles and precision munitions into the inventory of the Turkish Armed Forces is among the factors supporting the rise in equipment expenditures (Topbay and Taşkın, 2023: p. 75).

The most critical structural factor determining the course of equipment expenditures in this process is the radical transformation in Türkiye's defence industry localisation policy. The study by Topbay

and Taşkın (2023), covering the 2012–2022 period, documents this transformation with concrete data. The defence industry localisation rate, which stood at 20 per cent in 2004, was raised to around 80 per cent in line with the strategies and policies implemented (Topbay and Taşkın, 2023: p. 72). In parallel, defence and aviation sector exports rose from USD 1.2 billion in 2012 to USD 4.3 billion in 2022, an increase of 258 per cent (Topbay and Taşkın, 2023: p. 73). The effective use of Türkiye’s domestic defence systems in the field and their acquisition of “combat-proven” status paved the way for greater demand for these platforms in the international market (Düz, 2020; Rossiter and Cannon, 2022).

The fluctuating course of equipment expenditures cannot be explained solely by operational needs and localisation dynamics. A significant portion of defence equipment procurement is directly or indirectly sensitive to the exchange rate through imported sub-systems, licence fees and foreign-currency-indexed raw materials used even in domestic production. In this context, the temporal overlap between the 2018 exchange rate crisis—in which the lira depreciated by approximately 40 per cent against the dollar—and the period peak of the equipment share supports this mechanism. Empirically, using data for the 2006:I–2019:III period, Demir (2020) analysed the effects of income and the exchange rate on defence expenditures with the ARDL bounds testing approach and found that, while income positively and significantly affects defence expenditures, the effect of the exchange rate on the total level of defence expenditures was not statistically significant. An important methodological distinction must be made here: the absence of a statistically significant effect of the exchange rate at the level of total defence expenditures does not mean that intra-budget sub-items are independent of exchange rate changes. The equipment item, by its very structure, exhibits a higher sensitivity to exchange rate movements than the other expenditure components.

At this stage, localisation policies stand out as a balancing mechanism in the long run. Topbay and Taşkın (2023) make this mechanism concrete through defence import data: defence imports, which stood at USD 15 billion in 2012, fell to USD 3.6 billion in 2022, a decline of 75 per cent. This structurally reduces the foreign-currency-dependent component of the equipment item and thereby creates a buffer effect against exchange rate shocks. In their study employing the NARDL method, Gökce and Batuk (2024) found that the relationship between defence expenditures and economic growth is asymmetric: negative changes in defence expenditures generate stronger effects on economic growth than positive changes. In the period from 2021 onward, the share of equipment expenditures within the budget followed a relatively stable course in the 28–33 per cent range, falling to a projected 27.00 per cent in the 2025 estimates. This gradual decline points to a structural transformation that can be explained by the decline in per-unit equipment costs as domestic production capacity matures and by the gradual shift of the budget composition toward operation, maintenance and infrastructure expenditures. In this respect, the decline in the share of equipment expenditures should be evaluated not as a weakening of defence capacity, but as a reflection of the maturation of the localisation process and the growing weight of operational sustainability costs.

Infrastructure expenditures and the “other” category—two relatively small but structurally significant items of the defence budget—exhibited markedly diverging trends during the period examined. According to NATO definitions, infrastructure expenditures cover NATO common infrastructure and national military construction activities, while the “other” category comprises

operation and maintenance expenditures, R&D expenditures not directed at major equipment, and other expenditures not included in the items above (NATO, 2023). Infrastructure expenditures displayed a low and stable appearance in the 2–3 per cent band over the 2014–2020 period. However, in 2021 this item jumped from 2.22 per cent to 7.49 per cent, recording an increase of approximately 3.4 times. This structural break can be associated with the military infrastructure investments Türkiye intensified in the same period. Within the scope of the Presidency of Defence Industries' 2017–2021 Strategic Plan emphasised by Topbay and Taşkın (2023: p. 69), the aim was to make Türkiye a regional power in the field of security and national defence with products possessing advanced technology and original design; the production facility, test infrastructure and logistics centre investments realised in line with these strategic objectives can be considered among the principal drivers of the jump in the infrastructure item. Canbay and Mercan (2017) likewise assessed that, while investments in the defence industry impose a current account burden in the short term through the import of investment and intermediate goods, they can contribute positively to economic growth and have a current-account-narrowing effect in the long term as the country becomes an exporter.

The “other” category, for its part, followed a stable course in the 15–18 per cent band for most of the period. However, the surge of this item to a projected 31.20 per cent in 2025 constitutes one of the most striking structural changes of the period. In their study comparatively examining the composition of Türkiye's defence expenditures with NATO countries, Doğan and Kabayel (2023) concluded that the share allocated to research and development activities in the composition of defence expenditures in Türkiye has increased. Since, in the NATO classification, R&D expenditures appear both in the major equipment item and under the R&D sub-heading of the “other” category, the increase in R&D expenditures contributes to the rise in this category. Moreover, as documented by Topbay and Taşkın (2023: p. 74), the rise in the number of defence projects from 66 in 2002 to 802 in 2022 (figures that differ marginally from the 62-to-812 range cited earlier, reflecting differences between the underlying sources) contributes to the R&D expenditures accompanying these projects pulling the “other” category upward. In his study examining the effect of defence and R&D expenditures on economic growth in Türkiye, Canbay (2020) demonstrated that increases in R&D expenditures positively affect economic growth significantly in the long run. Taken together with the finding of Gökce and Batuk (2024: p. 171) that increases in defence expenditures positively affect long-run economic growth, albeit asymmetrically, it can be argued that the orientation toward R&D-weighted spending within the defence budget may carry a growth-supporting character.

Evaluating these two items together offers a holistic picture of the transformation in Türkiye's defence budget composition. Against the decline in the personnel share and the fluctuating course of the equipment share, the combined share of the infrastructure and “other” items rose from 18.13 per cent in 2014 to a projected 38.59 per cent in 2025. This indicates that the centre of gravity of the defence budget has shifted from the procurement of ready-made equipment toward the construction of domestic production infrastructure, R&D investments and operational sustainability costs. In conclusion, the component-based analysis of Türkiye's defence expenditures reveals that a radical transformation occurred in the budget composition over the 2014–2025 period. This shift from a personnel-intensive structure toward a structure focused on infrastructure investments and

R&D indicates that the defence industry has become not merely a security element but also a strategic domain with the potential to affect technological development and economic growth.

3. Defence Expenditures from the Perspective of the Development Plans

The five-year development plans implemented in Türkiye from 1963 onward have been the fundamental policy documents guiding the country's economic and social development. The twelve development plans prepared to date are of critical importance for understanding the position of defence expenditures within the economy, in that they reflect the state's priorities regarding resource allocation. In this section, each development plan period is addressed chronologically within the framework of the defence expenditure data of the relevant period and the approaches to defence in the plan texts.

The First Five-Year Development Plan (1963–1967) was prepared by the State Planning Organization (DPT) and designed as the first five-year segment of a fifteen-year long-term perspective (DPT, 1963). During the plan period, an average annual growth of 6.5 per cent was achieved (Salep, 2017: p. 225), while inflation remained at an average of 5.2 per cent (TÜİK, 2023). According to SIPRI data, the share of Türkiye's defence expenditures in GDP averaged around 3.4 per cent in this period (SIPRI, 2025). In the plan text, defence expenditures were not addressed directly as a sectoral priority but were evaluated within general public expenditures (DPT, 1963). Türkiye's NATO membership from 1952 made it possible to meet a significant portion of defence needs through external military aid (Ermiş and Canbolat, 2022: pp. 560–561). However, in 1964, the letter sent by US President Johnson to Prime Minister İnönü—warning that Türkiye could not use NATO weapons in the Cyprus issue—revealed for the first time that the country's import-dependent defence procurement model was not sustainable (Ermiş and Canbolat, 2022: pp. 560–564).

During the Second Five-Year Development Plan (1968–1972) period, an average annual growth of 7 per cent was targeted, while the realised rate was 5.4 per cent (World Bank, 2025). According to SIPRI data, the share of defence expenditures in GDP fluctuated between 3.1 and 3.5 per cent (SIPRI, 2025). In the plan text, defence expenditures were not addressed under a separate sectoral heading; the plan's main focus was industrialisation, economic growth and structural transformation (DPT, 1968). Although the awareness created by the 1964 Johnson letter led to the defence industry idea beginning to be discussed at the political level, it did not yet find an institutional response in the Second Plan period (Ermiş and Canbolat, 2022: p. 565). Türkiye continued to meet the great majority of its defence equipment through imports from external sources, primarily the United States (Ermiş and Canbolat, 2022: p. 562).

The Third Five-Year Development Plan (1973–1977) period was a turning point for Türkiye's defence policies. It is stated that the requirements of national defence services were taken into account in setting the plan's objectives and that the aim was to establish a systematic relationship between defence needs and industrial production; priority was given to the machinery industry in meeting defence needs, with the aim of increasing domestic production capacity and modernising defence power (State Planning Organization, 1972, as cited in Yeşilyurt and Yeşilyurt, 2019: p. 4). The most decisive event of this plan period was the 1974 Cyprus Peace Operation and the US arms embargo that began in February 1975 (Ermiş and Canbolat, 2022: p. 565). Lasting three years, this embargo confronted the Turkish Armed Forces—whose inventory was almost entirely of US origin—with great difficulties in terms of spare parts and logistical support, and conclusively proved that the import-dependent defence procurement model was not sustainable. According to SIPRI, the ratio

of Türkiye's defence expenditures to GDP ranged between 3.2 and 5.1 per cent in this period, reaching its post-1960 peak of 5.12 per cent in 1975 (SIPRI, 2025). The concrete institutional outputs of the awareness created by the 1964 Johnson letter emerged within the plan period: TUSAŞ commenced operations in 1973 and ASELSAN in 1975 (Ermiş and Canbolat, 2022: pp. 565–567).

The Fourth Five-Year Development Plan (1979–1983) period was one in which the relationship between defence and industrialisation was addressed within a clearer and more holistic framework. The plan text aimed to establish a mutually reinforcing interaction between healthy and rapid industrialisation and national defence power, and envisaged that defence-industry investments should be developed in harmony with general industrialisation policies and evaluated as an element contributing to exports and strengthening the economic structure (DPT, 1979). This plan period is notable not only for its policy objectives but also for the ruptures in Türkiye's economic and political structure: the liberal transformation process that began with the 24 January 1980 economic stabilisation decisions and the subsequent military intervention of 12 September 1980 significantly interrupted the implementation framework envisaged by the plan. According to SIPRI data, the share of defence expenditures in GDP fluctuated in the 3.4–4.3 per cent band during this period (SIPRI, 2025). Under the influence of the external dependency problems revealed by the 1974 embargo, institutional steps toward the domestic defence industry accelerated: ASPIİSAN was put into operation in 1981 and HAVELSAN in 1982 (Ermiş and Canbolat, 2022: p. 566).

The Fifth Five-Year Development Plan (1985–1989) is a genuine turning point in terms of the position of defence expenditures within the development plans. The plan targeted an average annual increase of 6.3 per cent in GDP (DPT, 1985), and according to SIPRI data the share of defence expenditures in GDP ranged between approximately 2.9 and 3.6 per cent, exhibiting a relative downward trend compared with previous periods (SIPRI, 2025). The most decisive development of this plan period was the establishment of the Defence Industry Development and Support Administration (SAGEB) by Law No. 3238 of 7 November 1985 (Resmî Gazete, 13 November 1985, No. 18927). Within the scope of the same law, the Defence Industry Support Fund (SSDF) was created within the Central Bank of the Republic of Türkiye. With this institutionalisation process, defence expenditures showed a tendency to shift from consisting merely of external procurement and personnel expenditures toward a structure focused on domestic production, R&D and technology development. However, Ziylan (2001: pp. 2–3) argues that this practice represented a break from the original technology-based policy of the early Republican period and did not encompass national technology production. SAGEB was restructured as the Undersecretariat for Defence Industries (SSM) in 1989.

During the Sixth Five-Year Development Plan (1990–1994) period, the PKK-related security threats that intensified in Southeastern Anatolia in the 1990s played a determining role in the increase of defence expenditures in Türkiye and led to a rise in the defence burden (Aya, 2005). According to SIPRI data, the ratio of defence expenditures to GDP rose from 3.5 to 4.1 per cent in this period, a trend that can be explained particularly by the increasing cost of internal security operations (SIPRI, 2025). In absolute terms, Türkiye's annual defence expenditure was around USD 5–7 billion in the early 1990s (Eğilmez, 2018). In the plan text, regional planning and the activation of public investments came to the fore, while the defence industry was not addressed as an independent sectoral priority (DPT, 1990). Even so, by 2003 the Turkish Armed Forces could meet only 25 per

cent of its needs from domestic sources, indicating that domestic production capacity was even more limited in the 1990s and that external dependency persisted (Akça and Özden, 2025: p. 6).

The Seventh Five-Year Development Plan (1996–2000) coincided with a period in which Türkiye’s opening to the outside accelerated with the entry into force of the Customs Union. According to SIPRI data, the ratio of defence expenditures to GDP ranged between 3.2 and 4.1 per cent in this period (SIPRI, 2025). The most decisive development of this period in terms of defence policy was the “Principles of Turkish Defence Industry Policy and Strategy” (TSSPSE) document, which entered into force by Council of Ministers Decision No. 98/11173 of 20 June 1998 (Resmî Gazete, 20 June 1998, No. 23378). The most important feature of the document was that it established the principle that mandatory-national and critical technologies should be developed and produced only in domestic industrial facilities holding a nationally classified facility security clearance. In this respect, the TSSPSE represented a paradigm shift attesting that defence expenditures should be treated not merely as a cost item, but as a strategic investment in technological independence and the national defence industry infrastructure (Ziylan, 2001: pp. 4–5).

The Eighth Five-Year Development Plan (2001–2005) period was shaped by the deep effects of the 2001 economic crisis. The IMF-backed structural reform programme implemented after the crisis aimed to stabilise the economy through high interest rates and a strong-currency policy (Akça and Özden, 2025: p. 3). According to SIPRI data, the ratio of defence expenditures to GDP fell to the 2.4–3.8 per cent band in this period (SIPRI, 2025). The most striking indicator of this period in terms of the defence industry is the sector’s level of external dependency: as of 2003, only 25 per cent of the Turkish Armed Forces’ needs could be met from domestic sources (Akça and Özden, 2025: p. 6). The total turnover of the defence and aviation industry remained at around USD 1 billion in 2002, and the number of firms operating in the sector was limited to 56. Nevertheless, the number of projects, which was 62 in 2002, rose to 269 by 2010, and the total contract value reached approximately USD 24.5 billion from around USD 5.5 billion (Akça and Özden, 2025: p. 6).

The Ninth Development Plan (2007–2013) was prepared as a plan positioning the enhancement of competitiveness, the transformation into an information society and sustainable growth among its fundamental objectives, in line with the European Union accession process (DPT, 2006). According to SIPRI data, the ratio of defence expenditures to GDP fell to the 1.92–2.47 per cent band in this period; however, this proportional decline does not conceal the increase in absolute expenditures, which ranged between USD 15 and 19 billion (SIPRI, 2025). This period points to a transformation in which the defence industry began to be addressed within knowledge- and technology-intensive sectors rather than merely as an expenditure item. One of the most critical objectives of this period was to increase the rate at which the Turkish Armed Forces’ needs were met domestically; this rate, targeted at 50 per cent for 2010, reached 44.2 per cent as of 2008, a significant increase compared with the 36.7 per cent level of 2006 (TOBB, 2010: pp. 17–18). This shift is regarded as an important indicator of the transformation in the structure of defence expenditures from an import-based model toward one grounded in domestic production; indeed, a defence industry based on domestic production became integrated with the national economy through its capacity to generate and transfer technology, evolving from a field that merely meets security needs into one contributing to economic and technological development (İstikbal, 2022: p. 7). During this period, large-scale domestic defence programmes such as the MİLGEM corvettes, ATAK helicopters, the Altay tank and the Anka unmanned aerial vehicles were launched, radically expanding the platform-based

production capacity of the Turkish defence industry (Akça and Özden, 2025: p. 6). A structural development of the period was the regulations aimed at broadening the capital base of the defence industry: with the 2011 amendment to the Industrial Participation and Offset Directive, the industrial participation base was raised from 50 to 70 per cent, and at least 30 per cent of it was made mandatory for sub-industries and SMEs (Akça and Özden, 2025: p. 9). As a reflection of these developments, the number of large firms in the sector rose from 71 in 2012 to 119 in 2017 and to 600 in 2019, with the number of SMEs growing by 280 per cent in the same period (Akça and Özden, 2025: p. 9; Özgür, 2021).

The Tenth Development Plan (2014–2018) addressed the defence industry within the framework of sectoral policies and set out, as explicit objectives, increasing the localisation rate and raising the share allocated to R&D (Ministry of Development, 2013). According to SIPRI data, the ratio of defence expenditures to GDP ranged in the 1.8–2.5 per cent band in this period; a marked upward trend in military expenditures was observed particularly from 2013 onward (SIPRI, 2025). The fundamental reasons for this increase were the objective of developing the domestic defence industry to reduce external dependency and the will to use defence capacity as an effective instrument in foreign policy (Akça and Özden, 2021: pp. 19–25; Akça and Özden, 2025: p. 5). During the plan period, the National Technology Move vision was declared, and localisation and nationalisation objectives in the defence industry were explicitly set out; this strategic orientation was part of a broader industrialisation policy in which the Tenth and Eleventh Development Plans highlighted the manufacturing sector as the main driver of the economy, in line with the global trend characterised as the “return of industrial policy” (Akça and Özden, 2025: p. 4; Wade, 2012). As a concrete result of this strategic change, the share of the manufacturing industry in GDP, which had fallen to 17 per cent in 2009, rose to 22.4 per cent by 2022 (Taymaz and Voyvoda, 2023: pp. 46–47). Radical changes also occurred in the institutional structure of the defence industry during this period: from 2016, the decision-making mechanism of the defence industry was centralised within the Presidency, the Presidency of Defence Industries (SSB) was established in 2018, and the Turkish Armed Forces Foundation was placed directly under Presidential control (Akça and Özden, 2025: p. 6). Combined with increasing procurement and R&D investments, these institutional reforms transformed the sector into a military-industrial complex focused on domestic production. The defence and aviation industry turnover reached USD 12.2 billion, the number of firms exceeded 1,500, and the number of projects carried out rose to 667 in 2018 while the cumulative contract value reached USD 60 billion (Akça and Özden, 2025: pp. 4–6). Through long-term investment support from the armed forces’ funds, incentive mechanisms targeting large firms, and support programmes offered to SMEs via KOSGEB (the Small and Medium Enterprises Development Organisation), the sector became a principal recipient of credit and incentives (Akça and Özden, 2025: pp. 4–6; SSB, 2024a; SSB, 2024b). One of the most striking developments of this period was the rapid increase in the export capacity of the Turkish defence industry. According to a 2020 SIPRI report, Türkiye’s arms export volume increased by 86 per cent between the 2010–2014 and 2015–2019 periods, and Türkiye rose, on average, to the position of the world’s 13th largest arms exporter in the 2015–2019 period, up from 19th in 2010–2014 (Béraud-Sudreau et al., 2020). In sum, the Tenth Development Plan period constituted a turning point for the Turkish defence industry, transforming the sector from a domestic supplier meeting only the needs of the Turkish Armed Forces into an exporter competing in the international arena (Kasapoğlu, 2022; Kardaş, 2025).

The Eleventh Development Plan (2019–2023) is the first development plan to designate the defence industry, together with agriculture and tourism, as one of the priority development areas (SBB, 2019). The plan set out comprehensive and concrete objectives, targeting an increase in defence and aviation industry turnover to USD 26.9 billion and exports to USD 10.2 billion by 2023 (SBB, 2019), although some experts questioned the attainability of these targets from the outset (Efsthathiou and Waldwyn, 2019). The defence industry export capacity rose from USD 196 million in 2004 to over USD 3 billion (USD 3.068 billion) as of 2019 (Saleh, 2023; Kasapoğlu, 2022). The number of local firms in the sector, which exceeded 1,500 in 2022, rose to over 3,500 as of 2024, while the number of countries exported to reached 170 (Outzen, 2024). At the end of the plan period, defence and aviation industry exports reached a record level of USD 5.5 billion in 2023, a 25 per cent increase on the previous year, and the localisation rate in the defence industry rose from 20 per cent in 2004 to 80 per cent as of 2023 (Saleh, 2023; Outzen, 2024). Nevertheless, the turnover target of USD 26.9 billion and the export target of USD 10.2 billion envisaged by the plan were not reached (SBB, 2019). It is emphasised that the permanence of current export gains is not guaranteed, with the changing nature of war, the emergence of new arms producers and the failure to establish global market dominance in major platforms other than UAVs assessed as principal obstacles (Kardaş, 2025).

The Twelfth Development Plan (2024–2028) maintains the defence industry as a strategic priority area, targeting an increase in defence and aviation industry turnover to USD 50 billion and exports to USD 18 billion by 2028 (SBB, 2023). Since the plan is still in the implementation phase, it is too early to make a comprehensive evaluation; however, initial data indicate that the sector has preserved its growth momentum. Defence and aviation industry exports reached a new record of USD 7.1 billion in 2024, and the number of countries exported to rose to 180 (Yaylali, 2025). According to SIPRI data, Türkiye's defence expenditure reached USD 25 billion in 2024, an increase of 12 per cent on the previous year, and the country rose to 17th place in the global ranking (SIPRI, 2025). The extent to which the plan's objectives will be achieved will depend on variables such as the competitive conditions in the global arms trade, fluctuations in the Turkish lira and the pace at which external dependency in critical sub-systems is reduced.

The Defence Industry Support Fund (SSDF) has also played a decisive role throughout this process. Established in 1985 and later incorporated into the Presidency of Defence Industries, the fund has performed a critical function in financing defence projects: although budgeted defence expenditures declined somewhat in lira terms, the extra-budgetary resources provided through the fund made it possible to preserve total military spending in constant-dollar terms. The fund's budget rose from 4.4 billion Turkish lira in 2015 to 252 billion Turkish lira by 2025 (Akça and Özden, 2025: p. 5; SBB, 2025).

4. The Relationship between Defence Expenditures and Economic Growth: The Empirical Literature on Türkiye

The effect of defence expenditures on economic growth is one of the long-debated issues in the economics literature on which a full consensus has not yet been reached. At the root of this debate lie the pioneering studies of Benoit (1973; 1978), which argued that defence expenditures positively affect growth in developing countries. This approach, known as the Benoit Hypothesis, posits that defence expenditures contribute to economic growth through channels such as infrastructure investment, technology transfer and employment creation. By contrast, the neo-classical approach holds that defence expenditures negatively affect growth by crowding out private investment and

diverting resources from productive areas, while the Keynesian approach argues that defence expenditures support growth through a multiplier effect by increasing aggregate demand, particularly in the short run. A third view, the neutrality approach, posits that there is no significant relationship between defence expenditures and growth. Owing to its geopolitical position, NATO membership and regional security threats, Türkiye—a country that allocates significant resources to defence expenditures—lies at the focus of this debate, and the econometric studies conducted on it constitute a rich literature in terms of both methodological diversity and divergence of findings. One of the early studies examining the defence–growth relationship in the specific case of Türkiye was conducted by Kollias (1997). Covering the 1954–1993 period, this study found no causality relationship between defence expenditures and economic growth, providing early evidence supporting the neutrality hypothesis. Sezgin (2001), however, reached a different conclusion in his study covering the 1956–1994 period using a Deger-type multi-equation model, finding that defence expenditures have a positive and significant effect on economic growth in Türkiye. By contrast, Dunne, Nikolaidou and Vougas (2001), using VAR methodology and cointegration analysis, identified a negative Granger causality running from the military burden to economic growth for Türkiye. Halicioglu (2004), applying a multivariate cointegration procedure within the framework of new macroeconomic theory, identified a long-run positive relationship between total defence expenditures and total output for the 1950–2002 period. Karagol and Palaz (2004), applying Johansen cointegration analysis for the 1955–2000 period, identified a long-run equilibrium relationship between defence expenditures and GDP and found a unidirectional causality running from defence expenditures to growth, with impulse-response results indicating that an increase in defence expenditures initially reduces national income. Evaluated together, these five studies—reaching such different results despite covering close periods—reveal that the econometric method, model specification and the set of variables included in the analysis directly shape the findings. Yildirim, Sezgin and Öcal (2005) shifted the perspective from country-based analyses to the regional level, examining the 1989–1999 period covering Middle Eastern countries and Türkiye with dynamic panel data analysis. Applying fixed effects and the Arellano–Bond GMM method within the Feder model framework, the study found that military expenditures positively affect economic growth through both a size effect and an externality effect. Görkem and Işık (2008), applying a VAR model and Granger causality analysis for the 1968–2006 period, found no causality relationship between defence expenditures and economic growth in Türkiye, a finding consistent with the neutrality hypothesis. Karagianni and Pempetzoglu (2009) examined the causality relationship for the 1949–2004 period with linear and non-linear Granger causality methods; the linear test identified a unidirectional causality running from economic growth to defence expenditures, while the non-linear test indicated a causality in the opposite direction, suggesting that traditional linear models may not fully capture the complex structure of this relationship. Yılcı and Özcan (2010) analysed the relationship between GDP and defence expenditures for the 1950–2006 period using the Zivot–Andrews unit root test and the Gregory–Hansen cointegration test, which account for structural breaks. The analyses found that both series were non-stationary at their levels and that there was no long-run cointegration relationship between them, while the Toda–Yamamoto causality test identified a unidirectional causality running from GDP to defence expenditures. Başar and Künü (2012), using panel data for 36 countries for the 1997–2004 period, found that, according to the fixed-effects model, an increase in defence expenditures significantly

and negatively affects economic growth. Töngür and Elveren (2016), adding the income inequality dimension to the defence–growth relationship for the 1963–2008 period using an augmented Solow growth model, found no significant effect of military expenditures on economic growth, but found that income inequality has a positive effect on growth.

Studies exploring the non-linear dimensions of the defence–growth relationship constitute a critical turning point in understanding the reasons for the conflicting findings in the literature. Yolcu Karadam et al. (2017) examined the effect of defence expenditures on economic growth for ten Middle Eastern countries and Türkiye over the 1988–2012 period using the non-linear Panel Smooth Transition Regression (PSTR) model. The notable finding is that the effect of defence expenditures on growth is non-linear and changes asymmetrically depending on the current state of the economy: when the share of military expenditures in GDP is below 3.8 per cent, defence expenditures positively affect growth, whereas above this threshold the effect turns negative. The study emphasises that the conflicting findings in the literature may largely stem from specification errors arising from linear model specifications. Bilgin (2022) analysed the effect of defence expenditures on economic growth for the 1960–2019 period using the NARDL model and the Hatemi-J asymmetric causality test; the findings revealed that defence expenditures have asymmetric effects on growth, with a decrease in defence expenditures positively affecting growth while an increase had no significant effect, a result supporting the neo-classical opportunity-cost approach.

Korkmaz and Bilgin (2017) comparatively examined the relationship between military expenditures and economic growth in Türkiye and the United States for the 1961–2015 period; the causality analysis found no causal relationship for the United States but identified a bidirectional causality for Türkiye, attributing the causality running from military expenditures to growth in Türkiye particularly to the emphasis placed on the domestic defence industry and the increase in defence exports after 2004. Durgun and Timur (2017), using Granger causality and variance decomposition for the 1970–2015 period, found no causality between defence expenditures and per capita real GDP, but the variance decomposition revealed that approximately 9.68 per cent of the changes in per capita GDP were explained by defence expenditures. Canbay and Mercan (2017), using a Vector Error Correction Model (VECM) for the 1986–2016 period, found that, in the long run, growth in defence expenditures and industrial production has a negative effect on the current account deficit, i.e. that the current account deficit decreases as defence expenditures and industrial production increase. Topal (2018) examined the relationship using both conventional and structural-break cointegration and time-varying causality analyses for the 1960–2016 period; while standard tests identified a unidirectional causality from military expenditures to growth, the time-varying causality analysis showed that this causal link disappeared entirely from the mid-1970s onward.

A significant methodological transformation occurred in recent studies. Sezgin and Yağtu (2019), using the Engle–Granger cointegration analysis and Granger causality test for the 1980–2016 period, found a long-run relationship between defence expenditures and GDP, with a 1 per cent increase in defence expenditures increasing the GDP level by 1.28 per cent; the causality analysis found no causality from defence expenditures to growth, but identified a unidirectional causality from growth to defence expenditures. Akcan (2019) analysed the effect of public investment, private-sector investment and military expenditures on economic growth using the ARDL bounds testing approach for the 1982–2017 period, finding that military expenditures have a negative and statistically significant effect on growth—thus indicating that the Benoit Hypothesis is not valid for Türkiye—

and attributing this negative relationship to the weakening of investor confidence by the intensifying terror threat and to Türkiye's external dependency in the defence industry causing expenditures to flow abroad without creating a multiplier effect. Asiloğulları and Ceyhan (2019), using the Pedroni panel cointegration test and the PMG estimator for 35 OECD countries over the 2000–2016 period, found that a 1 per cent increase in defence expenditures causes a statistically significant decline in the growth rate, a finding supporting the neo-classical approach. Kanca and Yamak (2020), testing the validity of the Benoit Hypothesis for the 1980–2017 period using the long-run growth rate produced by the Hodrick–Prescott filter rather than the current growth rate, found a long-run negative and statistically significant relationship between defence expenditures and the long-run growth rate.

Has and Çınar (2022) examined the relationship between military expenditures, economic growth and the nominal exchange rate for the 1975–2019 period using the Gregory–Hansen structural-break cointegration test and Toda–Yamamoto causality analysis, identifying a cointegrated relationship among the three variables with a break date of 1981 and a unidirectional causality from military expenditures to growth. Saygılı (2023) examined the effect of defence expenditures on economic growth for the 2002–2019 period using the Johansen cointegration test, FMOLS long-run estimation and Granger causality analysis, finding a long-run negative relationship in which a 1 per cent increase in defence expenditures leads to an approximately 5 per cent decline in economic growth. Adaçay and Misirlioğlu (2023), using the ARDL bounds test and Toda–Yamamoto causality test for the 1974–2021 period, identified a long-run negative cointegration relationship between defence expenditures and GDP, supporting the neo-classical approach. Gültekin Tarla and Boyrazlı (2023), using the ARDL bounds testing approach and the Hacker–Hatemi-J bootstrap causality test for the 1960–2020 period, found a unidirectional causality from defence expenditures to economic growth, a result supporting the Military Keynesian Approach, which posits that defence expenditures positively affect growth by supporting new technological developments and creating employment.

When the most recent studies are examined, important advances are observed in both methodological and conceptual terms. Demez and Polat (2021), using the Emirmahmutoğlu and Köse (2011) heterogeneous panel causality analysis for the MINT countries (Mexico, Indonesia, Nigeria and Türkiye) over the 1974–2019 period, found a unidirectional causality from defence expenditures to growth for Türkiye, while the panel as a whole supported the Keynesian approach. Çakır and Dereli (2024), using the panel cointegration test and the DOLSMG estimator for the MIST countries over the 1980–2022 period, found that increases in defence expenditures positively affect economic growth in all four countries, supporting the Benoit Hypothesis. By contrast, Engin and Uğur (2024), analysing the long-run effect of defence expenditures on economic growth for the N-11 country group over the 2003–2022 period with the CCE estimator, found that across the panel a 1 per cent increase in defence expenditures reduces economic growth by 0.08 per cent, a finding consistent with the classical and neo-classical approaches; at the country level, defence expenditures negatively affected growth in Türkiye. Dursun and Bursal (2025), using the Dumitrescu–Hurlin and Emirmahmutoğlu–Köse panel causality tests for the D-8 countries over the 1993–2022 period, confirmed bidirectional causality across the panel, supporting the Benoit Hypothesis. Yolal and Kocarık Gacar (2026), analysing the relationship between defence expenditures and per capita GDP for the 1960–2024 period using a VAR model and the Granger

causality test, found a unidirectional and statistically significant causality from defence expenditures to economic growth; the variance decomposition revealed that approximately 12.5 per cent of GDP fluctuations stem from defence expenditure shocks, a finding consistent with the Keynesian approach.

In conclusion, the Türkiye literature supports the Keynesian approach and the Benoit Hypothesis through studies finding a positive relationship (Sezgin, 2001; Halicioglu, 2004; Yildirim et al., 2005; Sezgin and Yağtu, 2019; Gültekin Tarla and Boyrazlı, 2023; Yolal and Kocarık Gacar, 2026); points to the validity of the neo-classical approach and the crowding-out effect through studies finding a negative relationship (Dunne et al., 2001; Karagol and Palaz, 2004; Akcan, 2019; Saygılı, 2023; Adaçay and Misirlioğlu, 2023); and strengthens the neutrality hypothesis through studies finding no relationship (Kollias, 1997; Gökem and Işık, 2008; Durgun and Timur, 2017). This diversity suggests that, in a dynamic economy such as Türkiye, the macroeconomic effects of defence expenditures vary depending on the time period, the economic conjuncture and the structure of the defence industry. Given the progress Türkiye has made in its domestic defence industry in recent years and the increase in defence exports, the direct incorporation of defence-industry outputs, technology transfer and R&D expenditures into future models will contribute to a more accurate understanding of the relationship.

5. Conclusion

This study has examined defence expenditures in Türkiye from a multidimensional perspective, addressing their historical development, the structural composition of the defence budget, their position within the development plans, and the empirical literature on the defence–growth nexus. The findings indicate that defence expenditures in Türkiye have followed a path determined not by a single factor but by the joint and simultaneous influence of geopolitical position, security threats, alliance dynamics, macroeconomic shocks and structural transformations in the defence industry. The historical analysis covering the 1960–2024 period reveals that the defence burden reached its peak in 1975 under the impact of the Cyprus Peace Operation and the subsequent arms embargoes, and that this experience served as the founding motivation for the domestic defence industry. The tension between the discourse of autonomy and structural external dependency has constituted the defining axis of Türkiye’s defence policy throughout this long period. The component-based analysis of the budget demonstrates that, over the 2014–2025 period, the centre of gravity of the defence budget shifted from a personnel-intensive structure toward equipment, infrastructure and R&D-oriented spending, indicating that the defence industry has become not merely a security element but a strategic domain with the potential to affect technological development and economic growth.

The evaluation of the development plans shows that defence expenditures, addressed within general public expenditures in the early plans, were progressively repositioned as a strategic priority sector; the Eleventh Development Plan, in particular, designated the defence industry as one of the priority development areas for the first time, while the Twelfth Development Plan has set even more ambitious turnover and export targets. The review of the empirical literature, however, reveals that no consensus has been reached on the macroeconomic effects of defence expenditures in Türkiye: the literature supports the Keynesian, neo-classical and neutrality hypotheses in roughly equal measure, with the findings appearing to be highly sensitive to the time period, the economic conjuncture, the econometric method and the model specification.

Taken together, these findings suggest that the macroeconomic effects of defence expenditures in Türkiye cannot be evaluated in isolation from the structure of the domestic defence industry, the pace of localisation, technology transfer and R&D capacity. As Türkiye's domestic defence industry deepens and its export capacity increases, the direct incorporation of defence-industry outputs and R&D expenditures into future analyses will be of critical importance for a more accurate understanding of the defence–growth nexus. In this respect, analysing how defence expenditures are shaped under global security conditions through composite risk indicators emerges as a fruitful avenue for future research.

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