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**THE ROLE OF WOMEN IN ASPIRING  
DEVELOPMENTAL STATES: THE CASE OF TURKEY'S  
“NATIONAL TECHNOLOGY INITIATIVE”**

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**THE ROLE OF WOMEN IN ASPIRING DEVELOPMENTAL  
STATES: THE CASE OF TURKEY’S “NATIONAL TECHNOLOGY  
INITIATIVE”**

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## APPROVAL

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In addition, I acknowledge that any claim of irregularity that may arise in relation to this work will result in a disciplinary action in accordance with the university legislation.

Melike Bozkurt

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(17/07/2023)



*To All My Sisters Who Never Give Up...*

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# **THE ROLE OF WOMEN IN ASPIRING DEVELOPMENTAL STATES: THE CASE OF TURKEY'S "NATIONAL TECHNOLOGY INITIATIVE"**

## **ABSTRACT**

State-led development became a subject that attracted more attention especially after 2008 global economic crisis. The erosion of confidence in neoliberalism and the success of countries pursuing a state-led development strategy has led to new debates on the role, responsibilities and capacities of states; and the prospects for a shift to a different approach to development for developing countries has become more plausible. Accordingly, it is observed that Turkey emerges as a case that developmental ambitions have been guided and shaped mainly by the state. In the changing global context of the new century, many considerations come to the surface for developing economies to take into account as they formulate their development policies. The National Technology Initiative launched in line with Turkey's sustainable development aspirations, and has adopted an inclusive, integrative, stakeholder-oriented approach, prioritizing policies that support the development of human capital. Based on the argument that not all society is affected by development policies and practices at the same level, this thesis argues that relevant decisions should be handled with a gender-oriented approach. Based on a content analysis of relevant strategic reports and 12 in-depth semi-structured interviews, the role of women in Turkey's National Technology Initiative will be analyzed. In this sense, the results of this study reveal why specific policy measures, institutional mechanisms and empowerment initiatives designed to integrate women into Turkey's technology-driven development ambitions will be important.

**Keywords:** Women, National Technology Initiative, Development

# KALKINMACI DEVLETLERDE KADINLARIN ROLÜ: TÜRKİYE'NİN “MİLLİ TEKNOLOJİ HAMLESİ” ÖRNEĞİ

## ÖZET

Devlet öncülüğünde kalkınma, özellikle 2008 küresel ekonomik krizinden sonra daha fazla dikkat çekmeye başlamıştır. Neoliberalizme duyulan güvenin azalması ve devlet öncülüğünde kalkınma stratejisi izleyen ülkelerin görece başarısı, devletlerin rolü, sorumlulukları ve kapasiteleri konusunda yeni tartışmalara yol açmış ve gelişmekte olan ülkelerin kalkınmaya yönelik farklı bir yaklaşım benimseme olasılıkları daha makul hale gelmiştir. Bu doğrultuda, Türkiye'nin kalkınma hedeflerinin büyük ölçüde devlet tarafından yönlendirildiği ve şekillendirildiği bir örnek olarak ortaya çıktığı görülmektedir. Yeni yüzyılın değişen küresel bağlamında, gelişmekte olan ekonomilerin kalkınma politikalarını oluştururken dikkate almaları gereken birçok husus ortaya çıkmaktadır. Türkiye'nin sürdürülebilir kalkınma hedefleri doğrultusunda başlatılan Milli Teknoloji Hamlesi, beşeri sermayenin gelişimini destekleyen politikalara öncelik vererek kapsayıcı, bütünleştirici ve paydaş odaklı bir yaklaşım benimsemektedir. Bu tez, kalkınma politika ve uygulamalarından tüm toplumun aynı düzeyde etkilenmediği savından hareketle, ilgili kararların toplumsal cinsiyet odaklı bir yaklaşımla ele alınması gerektiğini savunmaktadır. İlgili stratejik raporların içerik analizine ve 12 derinlemesine yarı yapılandırılmış mülakata dayanarak, Türkiye'nin Milli Teknoloji Girişimi'nde kadınların rolü analiz edilecektir. Bu anlamda, bu çalışmanın sonuçları, kadınları Türkiye'nin teknoloji odaklı kalkınma hedeflerine entegre etmek için tasarlanan özel politika önlemlerinin, kurumsal mekanizmaların ve güçlendirme girişimlerinin neden önemli olacağını ortaya koymaktadır.

**Anahtar Kelimeler:** Kadın, Milli Teknoloji Hamlesi, Kalkınma

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## LIST OF ABBREVIATIONS

AKP: Justice and Development Party  
ASELSAN: Military Electronics Industry  
ASPILSAN: Military Battery Industry and Trade Corporation  
HAVELSAN: Air Electronics Industry  
FDI: Foreign Direct Investment  
GDP: Gross Domestic Product  
GII: Gender Inequality Index  
ILO: International Labor Organization  
IMF: International Monetary Fund  
KADEM: Women and Democracy Association  
KAGIDER: Women's Entrepreneurs Association of Turkey  
MALE: Medium Altitude Long Endurance  
MUSIAD: Independent Industrialists' and Businessmen's Association  
NATO: North Atlantic Treaty Organization  
NGOs: Non-Governmental Organizations  
OECD: Organization for Economic Co-operation and Development  
ROKETSAN: Rocket Industry and Trade Corporation  
SAGEB: Presidency of Defense Industries Development and Support Administration  
TOBB: Union of Chambers and Commodity Exchanges of Turkey  
TOGG: Turkey's Automobile Initiative Group  
TSKGV: Turkish Armed Forces Foundation  
TUA: Turkish Space Agency  
TUBISAD: Turkish Informatics Industry Association  
TUBITAK: Technological Research Institution of Turkey  
TUSAŞ: Turkish Aircraft Industry Corporation  
TUSIAD: Turkish Industry and Business Association  
UAVs: Unmanned Aerial Vehicles  
UCAV: Unmanned Combat Aerial Vehicles  
UNDP: United Nations Development Programme  
WTO: World Trade Organization

## 1.INTRODUCTION

Who shapes development policies? What parameters does the state consider when formulating development policies? Which voices are heard in policy-making and decision-making processes? Where are women and where are they supposed to be? These questions underpin this thesis, which examines the role of women in Turkey's *National Technology Initiative* strategy, and in particular their participation in policy-making and decision-making processes. By addressing the intersecting issues of women and state-led developmentalism, this study aims to make important contributions to two distinct but interrelated strands of literature.

The concept of the developmental state, a version of state-led developmentalism, was coined in the 1980s to explain the success of East Asian countries in achieving rapid economic growth. However, the 21<sup>st</sup> century presents new challenges for countries aspiring to become developmental states. These new century conditions require developing states to be more flexible and responsive to these challenges. This thesis highlights the need for developing countries to be sensitive to the need for gender equality since it is a major challenge to development.

As discussed in more detail in the theory chapter of the study, the concept of embedded autonomy is critical for developmental states. Embedded autonomy refers to the ability of the state to be autonomous but embedded in society. This means that the state is able to make its own decisions but is also sensitive to the needs of society. This thesis argues that this embeddedness should be gender-oriented. This calls for the state to be more responsive to women's needs and take steps to promote gender equality in development policies. These include measures such as making sure that women are represented in decision-making and policy-making bodies, investing in programs that promote women's economic empowerment, and building developmental institutions without neglecting women. By taking these steps, attempts to approximate to the ideal-typical developmental state can create a more just and equitable society for women and achieve more sustainable and inclusive economic growth.

The aftermath of the 2008 global economic crisis has led to debates on the responsibility of states in political economic decisions and the potential role they should perform in development processes. While there was already a debate on the extent to whether neoliberal policies are effective and sustainable in developing countries (Rodrik 2007), the post-crisis debate on the role and capacity of the state has gained momentum. While one of the most important underpinnings of this discussion has been the developmental state, various analyses have emerged on the decisive roles and capacities of the state in development in developing countries (Kerstenetzky 2014; Masondo 2018; Calpham 2018). Turkey is also included in the literature as a case study of these debates (Karaoğuz and Kutlay 2018). Especially with the insecurity caused by the 2008 global economic crisis and the uncertainty of 2011, Turkey entered a new era in its political economy, which is called as “new developmentalism” (Öniş 2019, 2). Over the years, Turkey has developed a series of policies focusing on technological progress and innovation to strengthen domestic industries (Karaoğuz 2017). Although several financial, infrastructural and institutional constraints have been a significant challenge to these efforts, Turkey reaffirmed its aspirations to achieve sustainable development through strengthening the domestic economy and promoting technological progress in 2019 with the National Technology Initiative (Industry and Technology Strategy 2019-2023).

Although Turkey cannot be categorized as a developmental state, it aspires to become one with progressive policies, innovative mechanisms and strategic initiatives (Kutlay and Karaoğuz 2018). In order to achieve Turkey's aspiration of a *New Turkey* that would develop through *domestic* and *national* means, measures such as supporting domestic industry, emphasizing industrial policies, and state intervention in the economy through investments and incentives have apparently been adopted. Turkish political elites seek to promote economic development by investing in strategic sectors and supporting national technology development projects. In the Industry and Technology Strategy document (2019-2023, 24), attention is drawn to human capital that will lead to sustainable development and prosperity, and it is stated that relevant policies will be prioritized. However, it seems that the strategy considers society as a homogeneous structure. However, this thesis argues that such an approach may not produce sustainable results and that it is essential to develop diverse policies to address the different needs of different groups for the development of human capital. By embracing the diverse experiences,

talents and aspirations of women, Turkey has the opportunity to unlock its potential and enable the development of a more advanced, inclusive and equitable society. It is important to analyze how women engage in and shape policy-making and decision-making processes in this context, using the framework of developmental state theory, which traditionally focuses on the role of the state in development. This study aims to uncover the various challenges, opportunities and initiatives that arise during women's involvement in economic development field traditionally dominated by men. Through drawing on the rich literature on gender and development, this study explores why specific policy measures, institutional mechanisms and empowerment initiatives designed to integrate women into Turkey's technological progress will be important. It is expected to contribute to a deeper understanding of the transformative potential of gender-oriented development policies by critically examining the women's representation in key decision-making bodies and their impact.

In this context, understanding the position of women within the National Technology Initiative and the roles assigned to them is essential not only to understand the importance of women in economic development, but also to understand why development policies must be inclusive. Gender inequality remains a prevalent concern across the globe. It limits the potential of half the population and hinders economic progress (Boserup 1970; Klasen 2002; Çetindamar et al. 2012). Development processes are inherently gendered and gender perspectives need to be integrated for a comprehensive analysis (Truong 1999; Tansel 2002; Prügl and True 2014). It should be recognized that women's perspectives and experiences contribute significantly to the effectiveness and inclusiveness of any development agenda. Neglecting an analysis of the role of women in the National Technology Initiative leads to an incomplete understanding of the ongoing dynamics and hinders the development of effective plans and policies in Turkey.

### **1.1 Central Research Question and the Contribution of the Thesis**

This thesis, which aims to contribute to the field of women and development studies, addresses the following main research questions: How are women positioned in the National Technology Initiative? To what extent does Turkey integrate women in policy-making and decision-making processes in this domestic and national development

strategy? What are the public, NGOs and private initiatives in this regard? What are the opportunities and challenges for women on this path? By seeking to answer these questions, I expect to provide insights into how gender-oriented perspectives can improve the formulation and implementation of development strategies and demonstrate the transformative power of inclusive developmental policies.

While women's role in the economy and development processes is a subject that has begun to attract more attention from scholars, it is still a relatively understudied field. On the other hand, the developmental state literature has been almost devoid of a women-centered perspective. In particular, a few academic studies have referred to the role of women in the economic performance of developmental states in the 20<sup>th</sup> century (Troung 1999; Elias 2007; Park 2012). The East Asian countries discovered women's labor as a cheap, flexible, easy-to-control resource in the early stages of development (Young 1995) and relied on the competitive advantage of their ability to exploit cheap labor (Troung 1999). In Turkey, the literature on women in development has framed around women's role in development in terms of their status as actors in production and has analyzed women's participation in the labor force (Dayıoğlu and Kırdar 2009; Dildar 2015) and working conditions (Tansel 2002; Maden 2015).

The importance of the current thesis stems from the fact that it will both contribute to Turkey's domestic and national development efforts in terms of achieving the prescribed ambitions and analyze a relatively understudied topic in the academic literature in depth with a special focus on Turkey and the “National Technology Initiative”. This thesis will investigate the role of women in the policy-making and decision-making processes of Turkey's National Technology Initiative, analyze how and to what extent this role is framed by different actors, and thus contribute both to the literature on state-led developmentalism and to “raising awareness to improve the status of women in society” as underlined in the Eleventh Development Plan (2019-2023, article 542).

The conclusions and recommendations drawn from this thesis have the potential to contribute not only to the specific context of Turkey, but also to other developing countries facing similar challenges. The thesis proposes to ensure women's full and equal participation in the human capital essential for development and to advance gender

equality in development processes by identifying best practices, highlighting successful initiatives, and articulating policy recommendations.

## **1.2. Methodology**

There is no doubt that the way the methods are handled at the theoretical and empirical level and how they are integrated into the analysis is essential. This study uses a qualitative method with a case study design to explore the role of women in the National Technology Initiative in Turkey. Qualitative methods are well-suited for exploring complex and nuanced topics (Bryman 2016, 443), such as the role of women in development strategies.

Accordingly, the reports published by public institutions (e.g., the Ministry of Industry and Technology and TUBITAK), which are in a guiding position in the National Technology Initiative strategy, and the speeches of the relevant political elites (President Erdoğan and Minister Varank), who frequently refer to the National Technology Initiative in their speeches, were analyzed through content analysis. “Content analysis allows the researcher to test theoretical issues to enhance understanding of the data” (Elo and Kynga 2008, 108). By applying this method, the study aimed to uncover the underlying narratives, discursive strategies, and perspectives related to the National Technology Initiative, while also exploring the positioning and role of women within this broader context. The most important reason for focusing on Erdoğan's speeches is that state-led developmentalism in Turkey has been predominantly led by Erdoğan. The projects and incentives put forward in line with the relevant development strategy were developed by the Ministry of Industry and Technology. Accordingly, the Ministry and Minister Varank frequently refer to initiatives in the defense industry (UCAVs, tanks, ships, etc.), the National Space Program, energy technologies and the Turkey's Automobile Initiative Group (TOGG), as well as many other initiatives (Teknofest, etc.) as part of the National Technology Initiative. Therefore, these prominent institutions, individuals and initiatives in the sector within the scope of the National Technology Initiative were analyzed.

In this context, TUSIAD, MUSIAD, KAGIDER and KADEM publications were also analyzed through content analysis in order to further investigate the positioning and role

of women in the National Technology Initiative. TUSIAD and MUSIAD are two leading umbrella organizations representing the business world in Turkey. KAGIDER and KADEM, on the other hand, are two important NGOs operating in Turkey to strengthen the position of women in all areas of life. The following questions were raised when analyzing the above-mentioned documents in order to investigate the role of women in the National Technology Initiative: How are women mentioned in the relevant publications/reports on the issues covered by the national technology drive? How are women positioned? How is the role of women in policy-making and decision-making processes addressed? What are the reference points? Similarly, how and in which context are women's roles in the economy mentioned?

The analysis of reports and strategies submitted by public institutions revealed that more data is needed to see the implications of public initiatives for private sectors. Therefore, the study required a semi-structured interview using purposive sampling to understand how it diffuses into the sectors. These interviews were conducted to understand the impact of public-NGO-private cooperation. Interview research is one of the most widely used methods in social science research and one of the best tools for exploratory and in-depth studies in international political economy.

The research employed a purposive sampling technique to select participants for semi-structured interviews, ensuring diverse perspectives and insights from individuals directly involved in the National Technology Initiative. Lynch (2013, 41) notes that “purposive sampling can yield a sample that is loosely ‘representative’ of the population...without requiring a very large number of interviews”. The sample consisted of people working at senior levels in sectors that public institutions have drawn particular attention to as part of the National Technology Initiative, and NGOs that have drawn attention to the role of women in line with this strategy.

Twelve interviews were conducted, four representing three different NGOs and eight representing four different sectors (see appendix A). Interviews were conducted online and face-to-face, semi-structured and with open-ended questions (see appendix B) and in Turkish. Interviews were recorded when the interviewees gave permission. Also, the interviews were conducted anonymously according to the preference of the participants. In this case, the data were used in a way that does not harm the principle of anonymity in

scientific studies. Interview lengths varied according to their availability, but each interview lasted average of half an hour. The interview results made an important contribution to understanding how sectoral dynamics, public policies and organizations position women and what roles they are assigned.



## **2. DEVELOPMENTAL STATES IN THE 21<sup>ST</sup> CENTURY: THE ROLE OF WOMEN?**

Turkey, as a subject of debate on the development of developing countries, will be taken as a case study in this thesis. Analyzing the experiences of developmental states in East Asia provides an essential framework for understanding Turkey's development objectives and progress. The study's central research question will be attempted to be answered through the case of Turkey. However, discussing how women are positioned in developmental states will be important for the empirical analysis and contribute to the theoretical framework.

In the first part of the chapter, the literature on developmental states in East Asia will be analyzed, and their context, definitional issues, and critical characteristics in the 20<sup>th</sup> century will be discussed. However, in the 21<sup>st</sup> century, developmental states are facing significant challenges, and the international order is changing. Understanding these challenges and changes is necessary to achieve sustainable development goals and provide lessons and inspiration for other states. Therefore, the second part of the chapter will discuss the main difficulties and transformations for developing countries of the 21<sup>st</sup> century. The positioning of women in the development ambitions of Turkey can be examined through an analysis of the developmental state and an analysis of women's role in other similar cases through the relevant literature. In this context, the third part of this chapter will explore women's roles in developmental states, and finally, the conclusion will outline the main arguments of this chapter.

### **2.1 Revisiting 20<sup>th</sup> Century East Asian Developmental States: Context, Definitional Issues, and Main Characteristics**

When developed countries' development experiences, policies, and strategies are analyzed, it is possible to see the state as one of the main actors. Even in economies where the free-market economy is adopted and encouraged, the state is not an actor that can be ignored, nor is it a stakeholder whose share can be denied. However, in developmental states, the state is a driving force in development and is the leading actor in the formulation of development policies and necessary strategies. As a highly visible hand,

the state supports strategic sectors with protectionist policies to ensure and sustain development. States that can successfully and coherently apply the carrot-and-stick mechanism it has developed in line with their development strategy can increase their industrialization process. The most visible evidence of this state-led transformation is the development experience of East Asian countries in the 20<sup>th</sup> century.

The number of academic studies and debates on the developmental state has been increasing in parallel with the transformation of global politics. The repercussions of the 2008 global economic crisis not only significantly undermined confidence to free market economics but also led states to pursue relatively more interventionist, authoritarian, and nationalist policies, returning to the nation-state reflex. The rise of the Global South, especially China's rapid growth and the demonstration of the success of an alternative economic policy, has sparked a rethink of the state's role in development.

In the remainder of this part, the scope of the developmental state will be discussed, and the framework in which the concept is used will be outlined. After analyzing the difficulties in defining the developmental state, a detailed literature review on the main characteristics of the developmental state will be conducted, and a model of the developmental state will be outlined.

### **2.1.1. Developmental state model**

The literature recognizes that the term *developmental state* is used in different ways in different contexts and that “there is no clear-cut and all-encompassing answer to questions on sustainable growth and development” (Karaoğuz 2019, 68). To put it in general terms, a developmental state is a term used to describe a state that actively seeks to promote economic development within its borders through various policies and interventions. A developmental state is a state that has the ability to control the economic growth of the country through a national plan, gather support from different interest groups for this plan, regulate the behavior of businesses through both rewards and punishments, give priority to specific strategic industries that have positive effects on other sectors through rational industrial policies, and frequently use neo-mercantilist approaches to support high value-added domestic production and exports.

Developmental state is generally attributed to the American scholar Chalmers Johnson, who used the term in his book “MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975”. Johnson (1982) used the term to describe the role of the Japanese Ministry of International Trade and Industry (MITI) in guiding Japan's economic development, particularly in the post-World War II period. However, the concept of the developmental state has roots in earlier work by economists such as Alexander Gerschenkron who analyzed the role of the state in promoting economic development in countries such as Germany and Japan in the 1960s and 1970s. Gerschenkron (1962, 456) proposed the concept of “advantage of backwardness”, which suggests that underdeveloped countries can leverage the lack of industrialization in their economies to catch up with more advanced countries by acquiring technology and expertise. Gerschenkron believed that to achieve this; these countries must adopt institutional innovations that compensate for their underdeveloped factors of production. Since the level of institutional innovation required varies based on the country's potential and degree of underdevelopment, the state may need to play a crucial role in mobilizing capital and labor to initiate the industrialization process and justifying it from a social and political standpoint.

A developmental state is a state where the government takes a leading role in directing and coordinating economic development with a long-term vision and supported by functioning institutions. This concept has been particularly associated with East Asia, the so-called “Asian Tigers” (South Korea, Taiwan, Hong Kong, and Singapore) in the 1960s and 1970s, where the government intervened in the market to promote specific industries, create jobs, and boost economic growth. The seminal and in-depth academic work on the developmental state model argues that East Asian countries have been able to achieve rapid economic growth and industrialization by implementing a range of policies to build export-oriented industrialization, to make necessary investments in education and infrastructure, and to take protectionist measures to protect domestic industries from foreign competition (Johnson 1982; Amsden 1989; Wade 1990; Evans 1995; Chang 2004).

It is difficult to claim that the pioneering scholars who have led the development of the related literature have very different definitions from each other. However, studies with different focal points and cases have produced complementary findings. Ha-Joon Chang

(2004) emphasizes the need for a more inclusive, equitable, and sustainable development approach by criticizing traditional economic policy approaches and addressing their limitations. These criticisms are presented together with alternative policy recommendations and emphasize the importance of a more human-centered approach in the development process. According to Chang, the state needs to (i) pursue a clear long-term vision of development, (ii) mobilize support for this vision among different social groups and actors, (iii) regulate and discipline the private sector, promoting investment in strategic sectors and limiting speculation and rent-seeking, (iv) implement effective industrial policies, including measures to promote innovation, technology transfer, and skill development, and (v) use trade and economic policies to promote domestic production and exports of high-value-added goods (Chang 2004).

Peter Evans focuses on the state's role in development, particularly in industrial transformation processes. He explores how the state can intervene effectively for the success of industrial transformation in developing countries and the significance of the state exercising its autonomy in an embedded way. He explains how the state can function as an influential actor in economic development by comparing Brazil, India, and South Korea and emphasizes the state capabilities necessary for the success of industrial policies. Evans (1995) defines the developmental state as a state that is capable of organizing and guiding the process of economic development in a way that benefits society as a whole. According to him, the state needs to (i) set a clear and coherent vision of economic development that is oriented towards improving the well-being of the population, (ii) mobilize a wide range of resources to support economic development, including financial resources, technical expertise, and social networks (iii) coordinate the actions of different social groups and economic actors in pursuit of development goals, (iii) enforce regulations that promote economic development and prevent negative externalities, and (iv) respond flexibly to changing economic conditions and adapt its policies and strategies accordingly (Evans 1995).

Through an analysis of South Korea's late industrialization and successful economic transformation, Alice Amsden provides an understanding of the characteristics of the developmental state and the industrialization process it experienced. Like Evans, she emphasizes the active role of the state and argues for the necessity of state intervention for the success of economic development. Amsden (1989) defines the developmental state

as a state that is capable of (i) pursuing a strategic vision of economic development through the implementation of effective policies and interventions, (ii) promoting the growth and competitiveness of domestic industries, (iii) mobilizing a wide range of resources to support economic development, and (iv) promoting the development of human capital through investments in education and training (Amsden 1989). Another contribution of Amsden in the literature is the emphasis that the developmental state's investments in education support economic growth based on human capital development and technological progress. The fact that the education system has helped South Korea gain a competitive advantage in areas such as labor market adaptation and the development of innovation capabilities is an essential aspect in defining and analyzing the characteristics of the developmental state.

Robert Wade (1990) analyzes the state's role with a "governing market" theory based on an understanding of the developmental state. He offers a critique of neo-liberal policies through the examples of Taiwan, Japan, and South Korea and a proposal based on East Asian examples. States need to explore their economic power and ability to use their resources effectively since "economies of scale and learning, capital market imperfections, externalities, market instabilities, and differential growth potential give grounds for state assistance to industry and to some industries more than others" (1990, 356).

The studies and comparative analyses of the region refer to state intervention in the market and its integration with sectors but do not develop a clear definition. The different capacities and capabilities of different cases is an obstacle to presenting a prescribed development path. In other words, the definitional issues surrounding the concept of the developmental state reflect the complex and multifaceted nature of this phenomenon and emphasize that the context and specific characteristics of each country need to be carefully and individually assessed. Thus, the following section expands on definitional issues concerning the developmental state.

### **2.1.2. Definitional issues of the developmental state**

Several definitional issues surrounding a developmental state make it challenging to provide a clear and precise definition. No single agreed definition of a developmental state exists, and different scholars and policymakers may use the term to mean different things. Relevant literature argues that the term ‘developmental state’ is used in different ways in different contexts and that there is no clear-cut answer to questions on sustainable growth and development (Evans 1995; Chang 2004; Karaoguz 2022).

Scholars who have contributed to shaping our understanding of the developmental state often draw on case studies of countries that have successfully implemented the developmental state model, such as Japan, South Korea, Taiwan, and Singapore, to identify definitions, common characteristics, and best practices for the concept (Johnson 1982; Amsden 1989; Wade 1990; Evans 1995; Woo-Cumings 1999; Chang 2004). Evans (1995) emphasizes that the developmental state is not a static model but rather a dynamic and evolving model that needs to adapt to changing conditions and challenges. It is not a panacea for all economic problems, and other factors, such as global economic conditions and social movements, can also shape economic development outcomes. As clearly demonstrated in the studies, the developmental state is not a one-size-fits-all model and different countries may need to adapt the related policies to their specific historical, social, and economic circumstances.

Through this ongoing process of research and analysis, the concept of the developmental state continues to evolve and develop, and the concept continues to be examined from the perspective of different countries, including Argentina (Wylde 2018), Brazil (Kerstenetzky 2014), China (Knight 2014), India (Chibber 2003), South Africa (Masondo 2018), Ethiopia (Clapham 2018), Malaysia (Gomez 2004), and Turkey (Kutlay and Karaoguz 2018). As relevant research has shown, a key emphasis is on the need to carefully consider the context and specific characteristics of each country. As Routley (2014, 159) points out that “historic developmental states were often the product of trial and error rather than a grand plan; the concept of a developmental state therefore often works less as a model and more as a ‘buzzword’ with its own uses and effects”.

Defining a developmental state can be challenging due that the concept of the developmental state is inherently dependent on certain political conditions, which may not be present in all countries. In “Embedded Autonomy: States and Industrial Transformation”, Evans (1995) underlines the dynamic and evolving nature of the developmental state model and attempts to illustrate that successful developmental states are those that are able to adapt their policies and strategies to changing economic and social conditions. He also emphasizes the importance of understanding the complex interactions between state, society, and economy in shaping economic development outcomes, urges against seeing the developmental state as a panacea for all economic problems, and maintains that economic development outcomes can be influenced by factors other than just those directly related to the economy, such as global economic conditions and social movements. (Evans 1995).

The different conceptualization of political conditions in each country is an obstacle to establishing a specific prescription for the developmental state. Alice Amsden (1989) argues that the concept of the developmental state is inherently dependent on certain political conditions, such as a strong central government, which may not be the case in every nation. In “Asia's Next Giant: South Korea and Late Industrialization”, Amsden (1989) explores the economic development of South Korea and claims that the success of the developmental state model in Korea is partly due to the country's specific political conditions, including a strong central government with the power to direct economic development policies. She also warns that the developmental state model may not be applicable to all countries, especially those with weak or ineffective governments that are unable to implement effective economic development policies.

It may be difficult to define the term of the developmental state and can be challenging for various factors. These definitional problems emphasize the complex and context-dependent nature of the developmental state. However, the inability to define the developmental state is not an obstacle to analyzing its main characteristics. It is possible to put forward a model of the developmental state by concentrating on similarities rather than divergences.

### **2.1.3. Developmental state and its main characteristics**

It is vital to understand the conditions under which the main traits of the ideal-typical developmental state emerged before discussing the main aspects of the model. This will be necessary to analyze the conditions in which developing countries find themselves in order to achieve their development goals. In analyzing development experiences in East Asia, it is crucial to consider the historical conditions that led to this transformation. As Bruce Cumings (1984, 3) noted, “if there has been a miracle in East Asia, it has not occurred just since 1960; it would be profoundly ahistorical to think that it did”. Studies examining the conditions that prepared the developmental states and analyzing longer historical periods of East Asian countries have revealed an indisputable connection between South Korea's economic development and Japanese colonialism (Kohli 1994; Kim 2009). Kohli implies in his work that some of the differences between dynamic Third World political economies may have their roots in colonial past. According to Kohli (1994, 1270), the basic industrial infrastructure needed in Korea was in place under Japanese colonial rule: “Korean state under the Japanese influence was transformed from a relatively corrupt and ineffective social institution into a highly authoritarian, penetrating organization, capable of simultaneously controlling and transforming the Korean society”. In connection with this, Kohli also argues that it is also important to pay attention to structural changes in the economy: the colonial economy not only experienced steady growth and industrialization but also became highly export oriented.

Vu disagrees with Kohli's argument that colonialism is the most important causal factor. Based on a systematic comparison between South Korea and Indonesia, Vu (2007) assigns the primary role in post-colonial development to Koreans and Indonesians rather than colonial countries. For him, one explanation for the emergence of developmental states is the centrality of intra-elite and elite-mass interactions. Another is how essential state structure is for favorable growth, not just in these instances but elsewhere. Vu (2007, 47) states that “colonial legacies were important; however, their preservation and the formation of a new centralized and hegemonic state were not natural developments as often assumed, but rather the results of a particular pattern of state formation characterized by elite polarization and mass suppression”. Achieving effective

development depends as much on the state structure as on the willingness and technical capacity of state leaders to effectively fulfill their developmental role.

The literature also draws attention to the relationship between the development of East Asian countries and the perception and threat of external threats in their surrounding geography (Weiss and Hobson 1995). According to Linda Weiss and John Hobson (1995), war and war preparations play a key role in building state capacity, and this motivation is an important source of the emergence of the “will to develop”.

Another important contribution in this context is a comparative-historical analysis of Richard Doner, Bryan Ritchie, and Dan Slater (2005, 328), encompassing seven countries in Northeast and Southeast Asia. They define developmental states as “organizational complexes in which experts and coherent bureaucratic agencies collaborate with private sectors”, and they argue that these organizational complexes emerge when political leaders face extraordinarily constrained political environments. The motivation and will to build the institutions identified as a condition for development is recognized by political elites in three cases: “(i) the credible threat that any deterioration in the living standards of popular sectors could trigger unmanageable mass unrest; (ii) the heightened need for foreign exchange and war materiel induced by national insecurity; and (iii) the hard budget constraints imposed by a scarcity of easy revenue sources” (Doner et al. 2005, 328). Surrounded by these conditions, political elites engaged with private sector leaders to expand the capacity of the state institution-provided funds to incentivize various sectors and put forward projects to use these funds to build the necessary technological and financial infrastructures. The need and will for a strong and independent economy emerged as war, or the threat of war, became a motivational source that brought the state and the private sector together to ensure national security and integrity (Woo- Cumings 1999).

To summarize, the difficulty of defining the developmental state stems from the fact that these states have achieved economic development success in different circumstances and with different experiences. However, these differences do not prevent the construction of a model with blurred boundaries. It is possible to say that the state should intervene in certain sectors with certain policies and, in doing so, see the private sector as a partner rather than a competitor. The state needs to demonstrate a strong will to formulate and

implement the policies needed for development and to strengthen the bureaucratic capacities of its institutions that will play a key role in this process.

Despite the variations in experiences and conditions, developmental states exhibit similarities in terms of policies and implementations. Analyzing and defining these common and defining features as the characteristic features or institutions of a developmental state would be crucial. Therefore, following this section of the study, it is important to discuss key characteristics observed in successful examples of developmental states in East Asia, such as strong political will, state intervention, effective bureaucratic capacity, and the public-private collaboration.

- **Political Will**

The developmental state literature emphasizes the importance of strong political will. Scholars argue that strong political will is a critical factor for the successful formulation, implementation and sustainability of development policies. While development is carried out by the state and related strategies and policies are prioritized by state institutions, states need to demonstrate strong political will in line with their development goals. Wylde (2018; 1118) states that “Developmental structures are synonymous with state capacity, whilst developmental roles concern the political will to use that capacity for developmental ends”.

The clear implication from East Asia is not that other developing countries should rely on functioning bureaucracies to achieve developmental goals, but instead that “they must be willing to invest resources, both political and economic, in the construction of a capable state apparatus”(Evans 1998, 79). Strong political will enables the state to focus on development goals and embrace the necessary policies to achieve them. Political will includes elements such as the ability to formulate a long-term vision, to show strong leadership in policy-making processes and to implement development policies consistently (Amsden 2001; Chibber 2003). In other words, when development as economic growth becomes a top priority, a state with sufficient political power must also have the will and capacity to discipline capital. Additionally, strong political will helps the state to bring together different stakeholders to cooperate and coordinate, and to develop state capacity and relevant institutions.

- **State Intervention**

The idea of strong state intervention as a characteristic of a developmental state is often associated with the analysis of Japan's economic development in 1982 by Chalmers Johnson. Johnson (1982) has argued that the Japanese government played a crucial role in promoting economic growth by providing support to key industries, protecting them from foreign competition, and encouraging technological innovation. The state takes an active role in economic development through interventionist policies such as strategic planning, industrial policy, and investment in infrastructure, education, and training. This argument, in fact, stands in contrast to the neoliberal stance, which emphasizes the minimalist role of the state in the economy by focusing on free markets and restricted state intervention.

Many scholars share Johnson's perspective and suggest that state intervention is a key component and requirement of the developmental state model (Amsden 1989; Wade 1990; Evans 1995; Chang 2002). Ha-Joon Chang (2002) suggest that state intervention is essential to promote economic development, especially in developing countries. In his book "Kicking Away the Ladder: Development Strategy in Historical Perspective", Chang criticized the World Trade Organization (WTO) and developed countries for promoting free market policies that they did not adopt in their industrialization processes. Chang also emphasizes the importance of state intervention in promoting both industrialization and technological progress, arguing that the state can play a pivotal role in promoting research and development, protecting infant industries, and providing subventions to strategic industries. Similarly, Evans (1995, 5-6) asserts that states have become responsible for economic transformation as global conditions have come to define political survival and domestic peace more in economic terms: "Now the state's economic role goes beyond being a means to military ends. It is a source of legitimacy as well as means to accomplishing the classic goals of military survival and internal order".

The state must be involved in the process of capital accumulation and not see wealth creation as a function of nature and markets alone. The state can (and needs) play different roles in promoting industrial growth, such as a regulator, producer, or attracting private entrepreneurial forces into a new sector. In his book "Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization", Wade (1990) argues

that state intervention was a central factor in the rapid economic growth of East Asian countries. He highlights the importance of state-led industrial policy and government coordination of economic activities and emphasized the need for government intervention to address market failures and promote long-term economic growth. Wade (2003, 622) also accuses developed countries of preventing developing countries from pursuing policies aimed at accelerating the internal adjustment of their economies by introducing international regulations that put them in a disadvantageous position since “all this constitutes a shrinkage not only of development space but also of ‘self-determination’ space”.

Alice Amsden, too, underlines the necessity of state intervention for promoting economic development. In “Asia's Next Giant: South Korea and Late Industrialization”, Amsden (1989) analyzes the role of the state in South Korea's economic development. She argues that the state played a vital role in promoting industrial development through the coordination of investments, allocation of credit, and regulation of the economy in South Korea. The need for a state that focuses on ensuring that the fruits of economic growth are equitably distributed and that the need of all segments of society is met is clear. However, Amsden (2001) criticizes the ‘authoritarian’ model of development, in which the state is heavily involved in economic development but not accountable to its citizens, as unsustainable and likely to lead to political instability. Evans (1995) has made one of the most important contributions. He defines the limits of state intervention with the concept of “embedded autonomy”, which he describes as the ability of the state to remain responsive to the demands and needs of society while pursuing its development goals. Embedded autonomy implies that while a state pursues autonomous objectives, it also has institutionalized channels for negotiating and renegotiating policies with various social groups, particularly those who share the state's economic transformation and development goals. “It is worth underlining that either autonomy or embeddedness may produce perverse results without the other.... The secret of the developmental state lies in the amalgam” (Evans 1995, 59). This combination makes a state effective in promoting industrial growth and reaping long-term welfare benefits. Embedded autonomy is seen as a critical structural basis for the successful involvement of the state in industrial transformation. According to Evans, for the developmental state to be effective, it must be highly ‘embedded’ in society. The state should be autonomous enough to follow its

own goals and policies independent of external pressures and interests. Still, it should be embedded in society enough to adopt a strong civil society and a participatory approach in policy making and be sensitive to social needs and demands.

- **Bureaucratic Capacity**

Another pivotal component of the developmental state is bureaucratic capacity since it gives the ability of an implementation to efficient and effective policies and programs aimed at promoting economic growth and development. A strong bureaucratic capacity is critical because it enables the state to tackle the various obstacles that may arise in the process of economic development. Implementing policies to promote industrialization and progress requires a competent and responsive bureaucracy that can provide the necessary support to businesses and entrepreneurs. Bureaucratic capacity is also important to ensure that policies and programs are carried out in a fairly and equitably. This is essential for reducing inequality and promoting social and economic inclusion. A strong bureaucratic capacity also helps create the environment of stability and predictability necessary to attract investment and stimulate economic growth, as investors have more confidence that the state will implement policies efficiently.

Amsden (2001) claims that the biggest obstacle faced by developing countries in the path of development is a lack of strong bureaucratic capacity. This creates many difficulties and obstacles in formulating the relevant strategy and implementing the necessary policies. A capable and effective bureaucracy is vital to the implementing programs necessary for economic development and is essential to ensure that development-promoting policies and programs are implemented fairly and equitably without clientelist networks. In addition, bureaucracy is also an active factor in providing the necessary support and guidance to entrepreneurs in the early phases of development. Evans (1995) also argues that the state should have a strong bureaucratic capacity to intervene effectively in the economy and implement policies to promote growth and development. Strong bureaucratic capacity is not only a matter of technical competence but also political autonomy and the ability to resist capture by private interests. As he noted (1995, 71), "It is the absence of bureaucratic structures that leads to the utilitarian nightmare of the state as a collection of self-interested incumbents using their offices for purposes of individual maximization".

There is a strong emphasis on meritocracy in building bureaucratic capacity. A state should ensure that it has a competent and talented bureaucracy by selecting and promoting individuals not according to their social status or affiliation, but according to their abilities and qualifications so that economic growth can be achieved by ensuring that development policies are implemented effectively, and public services are provided efficiently. Another emphasis is placed on “weberian bureaucracy” in building bureaucratic capacity. Weberian bureaucracy refers to a type of organization characterized by a clear hierarchy of authority, a system of rules and procedures, and the use of expertise and specialization to ensure efficient operation (Evans 1995, 48-49). Other factors, such as training and development programs, corporate culture, and availability of resources also play an important role in building a strong and capable bureaucracy.

- **Public-private Coordination**

Strategic partnerships between the public and private sectors have served East Asian nations' economies to grow rapidly. It draws attention to this relationship. The state does not oppose the interests of the private sector while playing an active role, having the ability to interfere through its institutions, and having a robust bureaucracy in developmental states. Contrarily, economic development policies are created in partnership with strategic sectors that are selected and assisted by the state. To promote investment and innovation, policymakers in many developing nations have recognized the value of strong collaboration between the public and private sectors and adopted policies, including subsidies, tax breaks, and public-private partnerships.

While developmental states support specific sectors with specific subsidies, they also provide the necessary training and skill formation support to make the operations of the sectors more efficient (Douglas 1994). In doing so, developmental states try to discipline the private sector with strict capital controls; expect them to meet strict performance standards from their chosen industry. Evans (1995) highlights cases of successful partnerships like Brazil, where the state cooperated closely with the private sector in areas like the petrochemical industry, to demonstrate how important such partnerships can be in reaching economic growth and development. The lack of public-private collaboration can be a barrier to development in states like India, and the state's emphasis on production and regulation can occasionally shadow the critical role of support for private enterprises.

Chibber (2003, 30) expresses this situation in the following words: “Instead of instituting a regime that could take advantage of bourgeois enthusiasm for planning, [Indian state managers] built a leviathan that stifled business initiative, overextended the administrative capacity of the state, and lost coherence in a dense web of bureaucratic red tape”. Because both the state and the market have strengths and weaknesses that must be balanced to develop efficient economic policies, public-private interactions are crucial. In order to encourage entrepreneurial spirit, improve social and economic infrastructure, provide access to education and resources, and support technology and innovation; the state is a key player. However, its importance does not make the state the only player. Government interventions should be complemented by market forces that are instrumental in allocating resources. “Each of which [state and market] has to serve as a check on the other; they need to be seen as complementary, and we need to seek a balance between the two - a balance that is not just a matter of assigning certain tasks to one, and others to the other, but rather designing systems where they interact effectively” (Stiglitz 2011, 233). This implies that the state should play a proactive role in creating an enabling environment for entrepreneurship, innovation, and economic development, while also considering market feedback and adjusting policies accordingly. In this way, embedded autonomy promotes a dynamic interaction between the state and market, resulting in effective resource allocation and sustainable economic growth.

## **2.2. Developmental States in the 21<sup>st</sup> Century: Main Challenges and Transformations**

The developmental state concept evolved in the twenty-first century to reflect new challenges and changes in the global economic order. While the basic premise of state-led development is still relevant, there are new opportunities as well as challenges for developing economies to confront, such as those brought on by globalization, technological advancement, and environmental issues. In addition, the need to find a balance between economic growth, environmental conservation, and social inclusion has become more pressing due to the evolving social and political atmosphere. As noted, (Williams 2014, 2):

Examining recent transformations of developmental states... some kind of developmental state is essential to achieve development in the twenty-first century. However, the historical trajectories of developmental states in Asia, Latin America, Africa, and Europe suggest all too clearly that the concept must be examined critically and creatively. The assumption that there is a blueprint of effective state structures and action must be rejected. Developmental states are being reshaped by the challenges and consequences that their very success has brought about. Despite these varied experiences of state-directed development, the parameters of the developmental state literature have not changed since its heyday in the mid-1990s. Four pivotal conditions - economic restructuring, domestic politics, epistemic shifts, and ecological limits - have compelled serious revision in the goals and strategies of the respective developmental states in South Korea, Taiwan, Ireland, China, South Africa, Brazil, and India.

The following sub-sections will explain why the basic premises and presumptions of the developmental state model may not still be valid in the twenty-first century, and why it needs to adapt to the new challenges and changes introduced by the current global economic order. In this context, while the main characteristic of developmental state is still important, new factors such as globalization, technological progress and environmental issues need to be taken into account.

### **2.2.1. Ecological limits**

One of the sharp distinctions between the 20<sup>th</sup> and 21<sup>st</sup> centuries is the increasing visibility and importance of environmental sustainability as a major economic development objective. This is also reflected in the rising awareness of the negative consequences of unsustainable economic growth, such as climate change, and the need to promote environmentally sustainable and socially inclusive development. Many academics and researchers argue that environmental sustainability is becoming an explicitly critical objective of economic development in the 21<sup>st</sup> century (Chang 2002; Rodrik 2014).

The growing number of these scholars and related works reflects a wider recognition of the need to balance economic growth with social and environmental concerns and to promote sustainable, equitable, and inclusive development. Rodrik (2014, 483) argues that traditional approaches to industrial policy need to be adapted to address environmental challenges: “Green industrial policy needs to be approached in the same

manner, as an important government function, that can be carried out better or worse. The useful debate is not whether green industrial policies should exist but how they should be designed". Rodrik also argue that environmental concerns should be balanced with other development objectives, such as economic growth and job creation. He suggests that this can be achievable through a more nuanced approach to industrial policy that considers each country's unique circumstances. Chang (2010) emphasized the significance of promoting technological innovation and the development of new green technologies as a means of ensuring environmental sustainability. The state should play an important role in promoting the development and diffusion of green technologies through policies such as investment in research and development, subsidies for green industries, and regulation of polluting industries.

20<sup>th</sup> century's developmental state rhetoric has failed to acknowledge the ecological limits faced by modernizing industrialization. These perspectives emphasized structural transformation through carbon-based industrial development. Industrial accumulation was assumed to be unlimited, and as a consequence, growth-centered economies were assumed to be the solution to all ills. In this century, there has been a marked shift in the global political economy towards green policy and green development. Three important developments have led to this shift. First, the rise of modern environmentalism through national movements. Second, the shift to green politics is linked to the emergence of green parties (Peet et al. 2011). Third, global intergovernmental and multilateral mechanisms have increasingly taken up the environmental agenda (Clapp and Duvergne 2005).

### **2.2.2. Globalization**

The increasing integration of the global economy is one of the factors creating both opportunities and challenges for developing economies. While globalization has created new markets and opportunities for economic growth, it has also left these states vulnerable to increased competition and volatility in the global economy. This has led to pressure on developing states to liberalize their economies and reduce state intervention. Globalization can provide opportunities for states to expand their markets and attract foreign investment, which can stimulate economic growth and create jobs. On the other hand, increased trade and investment can also lead to more competition, posing a threat

to domestic industries. In “Globalization and Its Discontents” (2002), Stiglitz argues that globalization has failed to produce the benefits promised by its defenders and has instead led to rising inequality, environmental degradation, and social unrest in many developing countries (Stiglitz 2002).

Globalization can also lead to greater economic volatility as economies become more subject to fluctuations in world markets. Globalization can exacerbate inequality in countries, as certain sectors and individuals benefit more than others from increased trade and investment. Economic and social disruptions caused by globalization can lead to political unrest and instability, especially in countries with weak institutions. Rising economic activity related to globalization can cause further environmental degradation as countries opt for economic growth over environmental protection. As countries become more integrated into the global economy, they may lose their control over economic policies and decision-making processes. In Dani Rodrik’s words (2012, 138):

Asia’s economic experience violates stereotypes and yet offers something for everyone. In effect, it acts as a reflecting pool for the observer’. If you think unleashing markets is the best way to foster economic development, you will find plenty of evidence for that. If you think markets need the firm commanding hand of the government, well, there is much evidence for that, too. Globalization as an engine for growth? East Asian countries are a case in point. Globalization needs to be tamed? Ditto. However, if you leave aside these stale arguments and listen to the real message that emanates from the success of the region, you find that what works is a combination of states and markets. Globalization is a tremendously positive force, but only if you are able to domesticate it to work for you rather than against you.

### **2.2.3. Technological changes**

Traditional manufacturing-based development models are less effective and attractive due to the development of digital technology and the growing prominence of the service sector, which forces developing nations to change and invest in new markets and technologies to keep themselves in a compete. The policies of developing countries need to be more flexible and dynamic to be able to keep up with the world's shifting trends. By fostering economic growth, creativity, and technical advancement; technology transfer may have a crucial part in the developmental state (Chang 2010). Developing countries may eliminate technological barriers, expand their industries, and become more

competitive in global markets by finding ways to obtain and adopt innovative technology from outsiders.

As it contributes to economic growth, social advancement, and environmental sustainability; technological change has an important influence on state-led developmentalism in the 21<sup>st</sup> century. Developing economies need to adjust to technological change if they wish to stay competitive and pursue their goals for development. The capacity to take advantage of the potential of digital technologies to promote economic growth while ensuring that the benefits are widely shared and do not exacerbate already-existing inequalities presents both opportunities and challenges for developing states. New technologies are disrupting traditional businesses, forcing developing countries to establish new industries and provide new employment possibilities for residents. Developing countries should take advantage of the increased opportunities for innovation to foster social and economic development (Chang 2002; Kar and Sen 2016).

#### **2.2.4. Changing social and political context**

The question exists regarding the form and context in which the developmental state will emerge in the new century's social, political, and economic atmosphere. The unique opportunities and challenges are on the table for each country due to the changing nature of globalization, and the shifting power dynamics between the state and others, including non-governmental organizations, the private sector, international organizations, and the society.

Several scholars believe the developmental state will still be crucial to fostering economic growth in the twenty-first century. Still, it will need to change to meet novel concerns like environmental sustainability and the evolving nature of innovation and technology (Chang 2007). Others contend that new strategies for economic growth are required since the developmental state paradigm is progressively becoming irrelevant (Rodrik 2004).

With the global economic crisis of 2008, however, distrust of markets without intervention has become more visible, and the role of states in driving their economies has re-emerged. This trend has continued to be evident after 2008 and has even become

more undeniable with the cascade of global problems. In the international system, where a neo-populist political discourse is often observed, one of the main emphases is the return of the state to the nation-state reflex. In the international system, where a neo-populist political discourse is often observed, one of the main emphases is that the state must find means for its own ends. There is a big question mark for developing countries on how to close the widening gap with developed countries. In competitive markets, the gap between them is enormous. The developmental states of the 20<sup>th</sup> century can serve as a model for achieving and sustaining development through the state. However, as the study repeatedly points out, there is no prescription for this. To put it in the words of Karaoğuz (2022, 60); “[a]ll in all, there is no absolute obstacle that would block developing countries from establishing their own variants of developmental states and formulate good policies through trial and error”.

### **2.3. An Understudied Subject in Developmental State Research: The Role of Women in Development**

It is vital to pay attention to the relationship between women and development since gender bias is inherent in every aspect of the development process. Practices based on gender differences increase the burden of being a woman in society and negatively affect social welfare and economic development. “The Millennium Development Goals” set by the United Nations call for promoting gender equality and empowering women. In Kofi Annan's (1998) words; “gender equality is more than a goal in itself. It is a precondition for meeting the challenge of reducing poverty, promoting sustainable development, and building good governance”.

Positioning the status of women in economic growth, analyzing the impact of gender norms on development processes, understanding the barriers to women's labor force participation, and finding sustainable solutions for these barriers are topics that are frequently discussed in the relevant academic literature (Hill and King 1995; Dollar and Gatti 1999; Klasen 2000; Kim et al. 2016; Wei et al. 2021). Industrialization initiated a change in the role of women in the social structure and made them an actor in the labor market. Women have faced obvious discrimination and inequalities in the labor market and started to struggle for equal wages with men, improved working conditions, and

visibility in the public sphere. Empirical studies on the relationship between gender and economic growth (Boserup 1970; Klasen 2000; Berik et al. 2009; Parejo and Radulovic 2023) show that female employment is essential for sustainable economic growth and balanced social development in all regions.

Due to the inseparable nature of gender bias from any development framework, it is imperative to focus on the decrease in the economic value of women's work. The evolving understanding of growth and development has resulted in heightened gender-based social disparities, highlighting the diminishing significance of women's labor and their marginalized role in development. In his well-known book "Development as Freedom" (1999), Amartya Sen argues that development should be seen not only as economic growth but also as the expansion of human freedoms and capabilities. He emphasizes the importance of addressing gender inequality and promoting women's empowerment in achieving development goals and argues that gender inequality is not only a social injustice, but also an economic injustice because it limits women's ability to participate fully in economic activities, which is a major obstacle to economic growth. Nussbaum (2011) also gives women a key strategic role in promoting development and reducing poverty and emphasizes the importance of investing in women's education and health care. Women's empowerment, as a key component of human development and economic growth, can help to enhance women's capabilities and ensure their full engagement in economic activities.

Various interdisciplinary literature in the field of political economy helps to understand how state and economic transformations have been gendered. Transnational collaborations between public and private sectors to promote gender equality and empower women combine the principles of neoliberalism and feminism, resulting in diverse outcomes depending on the specific circumstances. This approach facilitates cooperation and opens up fresh possibilities. "The new attention to gender equality in the business world thus forms part of what many scholars of international political economy refer to as the neoliberal transformation of the state and governance in the context of globalization" (Prügl and True 2014, 1138). The role of women in the economic transformation is evaluated through their participation in the labor market. The relevant literature examines the obstacles to this participation and the difficulties they face when they participate.

The developmental state literature, on the other hand, is devoid of a women-based perspective. The role of women in the economic performance of 20<sup>th</sup> century developmental states was only referred to in a few academic studies. South Korea's economic development, for instance, was based on labor-intensive, export-oriented industrialization and the competitive advantage of its ability to exploit cheap labor. High numbers of unskilled women have worked in the textile, clothing, rubber, and electronics sectors, which has fueled South Korea's economic growth (Park 2012, 5). Many scholars have asserted that the rise of a new phase in industrialization in that region since the 1970s is “characterized by the rediscovery of women’s labor as a special source of labor (e.g., cheap, flexible, easy to control) in the initial process of industrial relocation” (Elson and Pearson 1981; Troung 1999; Elias 2007; Park 2012; Kovacs 2013).

Alwyn Young (1995, as cited in Braunstein 2011, 56) gave “...[i]mportance of factor accumulation versus total factor productivity growth in the East Asian miracle comes down squarely on the side of accumulation – and women are a significant source of it”. The main characteristics of developmental states are the strong and visible hand of the state and the use of this hand in cooperation with the private sector. However, the state's influence on and relationship with civil society is also debated. Some studies characterize a “weak and subordinate civil society” as a common feature of developmental states (Leftwich 1995, 405). An active and strong civil society is essential for the visibility of women's roles in the economy since the assigned role of women as workers is one of the important sources of economic development.

While this is not the scope of this work, it is unclear whether the Asian miracle created a miracle for women. South Korea would be a case to support this argument. Through keeping wages low in female-dominated export sectors, South Korea has managed to “maintain a competitive labor-intensive industry and a well-paid male labor aristocracy” (Amsden 1989, 203). As Thanh-Dam Truong noted in her article “The Underbelly of the Tiger: Gender and the Demystification of the Asian Miracle” (1999, 135), “the East Asian experiences of female participation in industrialization confirm the view that pre-existing gender norms have been present in production relations.... [and hence] do not simply ‘evaporate’ once countries reach a certain stage of industrialization”.

The export-oriented growth and industrialization strategy is promoted by politicians as a means to improve women's welfare. However, the expansion of labor-intensive, export-oriented manufacturing has been linked to the creation of gendered production processes based on exploiting and controlling low-wage female labor. Wright (2006, as cited in Mains and Mulat 2021, 363) notes that international firms have progressively relied on gender and geographical factors as justifications for offering low wages to workers since the 1970s era of globalization and “[s]cholars of women’s labor in the global economy have described a ‘myth of the disposable third world woman’ that has been used to justify low wages for factory workers in the Global South”. Due to the combination of the low cost of living in developing countries and the structural position of women in the household, companies have justified extraordinarily low payments to workers based on the relatively low cost of reproducing labor. Women who have to work at low wages instead of sitting at home hungry, have become impoverished in the developing economies. Empirical studies across different countries show that women's low wages encourage exports and hence investment: Export sectors that are dominated by female workers, but with lower wages, play an integral role in export-led development strategies of countries including Singapore (Heyzer 1978), Taiwan (Seguino 2000), Malaysia (Elias 2005), Latin America (Psacharopoulos and Tzannatos 1992), Mexico (Fairris 2003), South Africa (Tripp 2015) and Ethiopia (Mains and Mulat 2021).

Women's roles in the economy and development have been thoroughly examined through their participation in the labor force and working conditions in the scholarship. This subject is indeed very relevant and essential. However, to the best of my knowledge, there is no study systematically exploring how women are involved in formulating development policies, plans, strategies, and decision-making processes in (aspiring) developmental states. Therefore, examining the role of women in decision-making mechanisms in Turkey's development policies will contribute to the literature on state-led development. Analyzing the frame of development objectives of Turkey would be highly relevant in this respect.

## 2.4. Concluding Remarks

The concept of the developmental state refers to a model of development in which the state plays an active and influential role in formulating development policies and strategies for developing countries and promoting economic growth. It promotes economic development by providing support to strategic sectors through a set of policies and encouraging public-private partnerships. The key characteristics of this model include strong political will, state intervention, effective bureaucratic capacity and public-private cooperation. Successful examples of the developmental state can be seen in the development experiences of East Asian countries in the 20<sup>th</sup> century. However, new challenges emerging in the 21<sup>st</sup> century, such as ecological limits and globalization, have created a new development context for developing countries that requires transformation and adjustment. In this context, the developmental state model needs to be updated and issues such as environmental sustainability, globalization and technological change need to be taken into account.

The role and contribution of women in economic development processes has often been neglected. Empirical studies demonstrate that women's labor force participation played an important role in the economic growth and development of East Asia. However, in these processes, women workers have been exploited with low wages and gendered production processes have been created. Women's low-wage labor has been encouraged as part of export-oriented development strategies, thereby supporting economic growth. However, this has led to a decline in the economic value of women which has resulted to their impoverishment. Therefore, it is crucial to ensure that women are actively involved in the formulation policies, plans, strategies and decision-making processes that drive development. The East Asian examples highlight that the role of women in development processes and the need for gender equality should not be ignored. In this context, it is of utmost importance to take women more into account in the formulation of development policies and to promote gender equality.

### **3. TURKEY’S STATE-LED DEVELOPMENTALISM IN PERSPECTIVE**

While Turkey's development strategy followed the hegemonic approach in the international arena in the last century, it has evolved into a state-centered development strategy with a more nationalist-populist approach. This strategy, named the National Technology Initiative, is shaped by the Turkey's desire to become a regional and rising power as well as the challenges posed by (and in) the global system. With this new development approach, Turkey seeks to increase its investments in high-tech sectors and develop strategic industries that will help it achieve economic independence.

This chapter will first provide a detailed analysis of Turkey's development strategies in the 20th century and then analyze the turning points experienced by Turkish political elites in adopting and developing new development policies in the 21<sup>st</sup> century. The chapter will continue with a detailed analysis of the Turkish government's domestic and national development discourse in recent years; initiatives and developments in the defense, automotive, space and energy sectors will be analyzed, and conclusions will be drawn.

#### **3.1. Turkey’s State-Led Developmentalism in Historical Perspective**

Development is a goal that every country aspires to achieve, and it is a process that those who have achieved development strive to sustain. For this reason, policymakers and decision-makers develop plans and policies within the framework of development goals. All decisions they make are aimed at either igniting development or avoiding any harm to the pace of development achieved. In this regard, political elites implement different economic practices of different periods to achieve the necessary capital accumulation, and economic growth. Turkey, which is in the position of a developing country, has demonstrated its development efforts by pursuing different policies in various periods since its establishment.

After the declaration of the Republic, it is seen that the Turkish economy has been in an effort to engage in a rapid transformation and to overcome inadequate economic

conditions. In line with the decisions taken at the Izmir Economic Congress in 1923, it was planned to determine the needs of the war-torn country and to make economic decisions accordingly in this direction, it was aimed to establish the necessary economic institutions and organizations and to interact with each other (Gökçen 1998). The period between 1923 and 1929 was characterized by a liberal economic approach in which private enterprise was encouraged. The crisis of 1929 had an impact almost all over the world, and the countries that entered the economic depression redefined the state as the actor directing the economy against the failure of the liberal doctrine. The same process occurred in Turkey, which adopted the principle of *statism*. In the interwar period, Turkey's adoption of statist economic principles coincided with a period in which confidence in the free-market economy was shaken. The economic policies of the 1930-1939 period were based on protectionism and statism (Boratav 2015). In 1933, the First Five-Year Industrial Plan was launched, and its main objective was to increase the share of the industrial sector in the economy. This plan, Turkey's first planned industrialization strategy, was a search for a solution to the lack of internal dynamics of the economy in a conjuncture where the state-led economic approach was effective.

With the end of the Second World War, a period of reconstruction began worldwide. The driving factor in the reconstruction of Europe was closely related to the Turkish economy. In the 1950s, Turkey's development discourse shifted from a state-led industrialization strategy, known as *etatism*, to a new economic model that emphasized liberalization and integration into the world market based on agricultural exports. The new strategy prioritized agricultural development and the development of transport and communication networks, but relegated industrialization to the background (Öniş and Şenses 2007). The change in policy was influenced in part by external factors, including the rise of the United States (US) as the dominant global power and the conditionalities imposed by institutions like the World Bank. Additionally, domestic factors played a significant role in Turkey's economic progress during the 1950s. The new government formed a diverse coalition that encompassed the interests of prominent landowners and business entities, as well as a wide range of peasants and farmers. Turkey achieved significant growth rates in the early 1950s. However, The occurrence of the 1958 Crisis resulted from the combination of adverse weather conditions and unsustainable growth

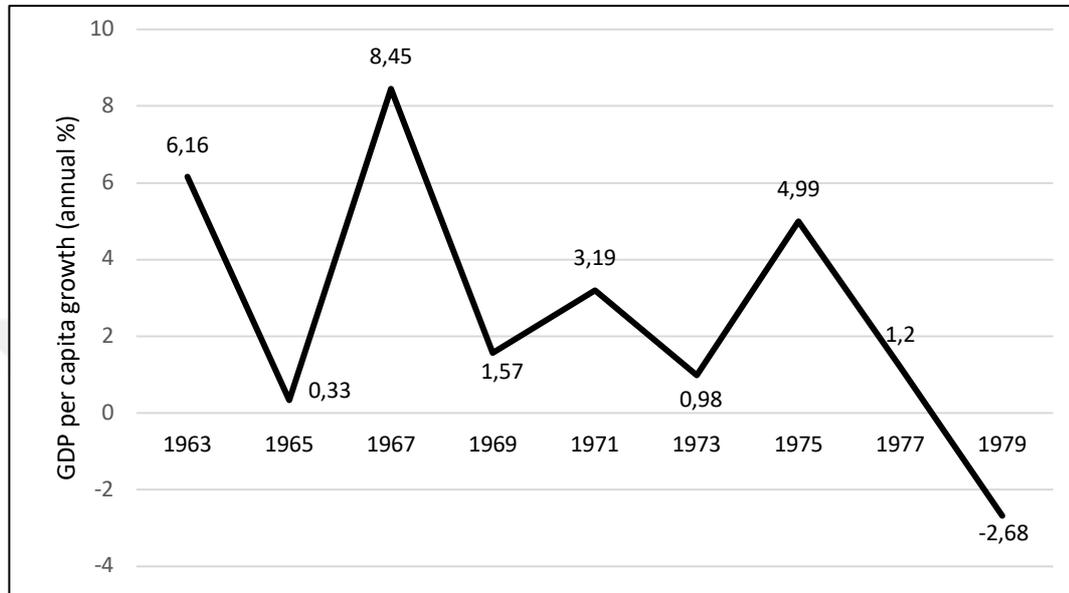
rates. This period concluded with a significant political downturn, prompting the adoption of a planned development strategy for the economy (Kazgan 2013).

In the 1960s, Turkey experienced a major policy shift towards planned industrialization, also known as planned development strategy. This new strategy was adopted in the environment of a changing external context and with the fact that the old strategy had been discredited by a major financial crisis. The new strategy was supported by a rising coalition of national developmentalism that included rising industrialists, elements of the bureaucratic elite, and organized labor. Turkey's First Five-Year Development Plan is considered as the first phase of a fifteen-year perspective plan. In the plan, the social and economic objectives and the resources to be mobilized are discussed in terms of a fifteen-year perspective. In the first five-year development plan which is issued by State Planning Organisation, the objectives to be achieved in fifteen years were set as follows: “To train a sufficient number and high quality of scientists and technical experts in all fields necessary for Turkey's development, to achieve a development rate of 7 percent, to solve the employment problem, to reach a balance of external payments and to realize these objectives in accordance with the principles of social justice” (First Five-Year Development Plan 1963-1967, 33).

The development discourse of the 1960s emphasized the key role of the state as the principal agent of economic and social transformation. This strategy effectively achieved relatively high rates of economic growth and significant structural changes. However, the Turkish state's policy during this period was reactive. Turkey's development experience was more in line with Latin America than East Asia and can be classified as a “fragmented developmental state enjoying a much lower degree of autonomy relative to the key societal actors” (Öniş and Şenses 2007, 17). Although the private sector was encouraged and incentivized throughout this period, the state, which held the power of implementation and sanction, emerged as the dominant actor in development. The common discourse of the development plans implemented during this period was to achieve a certain annual growth rate in the economy, to prioritize industry as a primary sector, and as part of a long-term strategy (Kepenek 2013). This strategy led to relatively high economic growth rates and significant structural changes in which both private and state-owned enterprises played complementary roles. However, the Turkish economy

faced a wave of fiscal imbalances and rising inflation, leading to a deeper balance of payments and a debt crisis in the late 1970s.

**Figure 1.** Turkey's GDP Growth, 1963-1979



The figure was created based on World Bank data by the author.

Although this period, which can be characterized as *neo-etatist* (Öniş and Şenses 2007), achieved relatively positive outputs in many aspects; it did not achieve the targeted sustained economic growth. The 20 years of instability in Turkey's Gross Domestic Product (GDP) growth is summarized in Figure 1. The rise of neo-liberalism as the hegemonic development discourse and Turkey's renewed attention to its geo-strategic importance for the US and its Western allies at a time when the Soviet invasion of Afghanistan signaled the continuation of the Cold War struggle, has led the country to another turning point in its economic development history.

### 3.1.1. Neo-liberal turn in development policies of Turkey

In the 1980s, Turkey underwent a shift towards neo-liberal economic policies, with an emphasis on market liberalization and privatization. This was due to the rise of neo-liberalism as the hegemonic development discourse, with the involvement of the major international institutions, the International Monetary Fund (IMF), the World Bank, and

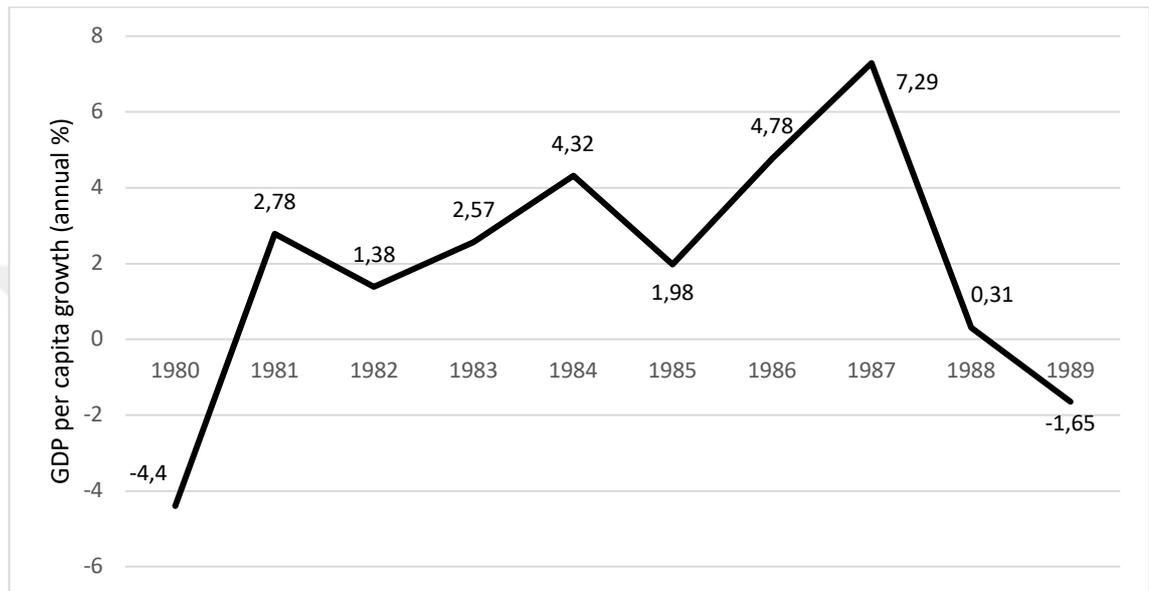
the Organization for Economic Co-operation and Development (OECD) involved in Turkey's neo-liberal restructuring process. The import-substituting industrialization strategy, which had faced a significant crisis in the late 1970s, lost credibility, leading Turkey to rely heavily on external financial inflows. Consequently, Turkey became a testing ground for neoliberal principles in the early 1980s. Washington institutions like the IMF, World Bank, and OECD, included Turkey in their policy packages with conditions, incorporating crucial neoliberal principles such as market liberalization and privatization.

In the Fifth Five-Year Development Plan (1985-1989), the objectives of this period were stated as follows: “Taking into account the balance of payments situation, import protection rates will be gradually reduced, export promotion and consumer protection will be ensured. Newly established industries will be protected for a reasonable period, if necessary. The main objective is to provide exports with a structure compatible with the level of development and opportunities reached by the economy. Diversification and increase of exports of goods and services in line with the production structure will be encouraged. Attention will be paid to improve the legal and economic structure necessary for the encouragement of foreign direct investment” (Fifth Five-Year Development Plan 1985-1989, 1). In line with this strategy, necessary competitive adjustments were made in relative prices, which were deviated against international trade and exports, for restructuring to open the economy to foreign markets, and an export-based structural change was introduced (Eşiyok 2004, 26). The objective was to substitute the role of the state with that of the private sector, and to replace administrative decisions in determining both macro and microeconomic balances with the utilization of the price mechanism. In order to realize this objective, it was planned to abolish interventions in the market prices of goods and factors.

As can be seen in Figure 1, the planned development period did not provide stability, and Turkey did not achieve sustainable growth. For this reason, Turkey implemented short-term stabilization programs in the 1980s to solve the problem of economic instability. In addition to the policies aimed at ensuring liberalization in the economy, stabilization policies implemented in this period tried to achieve balance in the economy. In this process, plans were replaced by economic stabilization packages (Egeli 2001, 158). As

can be seen in Figure 2, the short-term stabilization programs failed to achieve what was targeted. The instability in economic growth, which is clear in Figure 2, became even more unstable with the crises that emerged in the 1990s (see Figure 3).

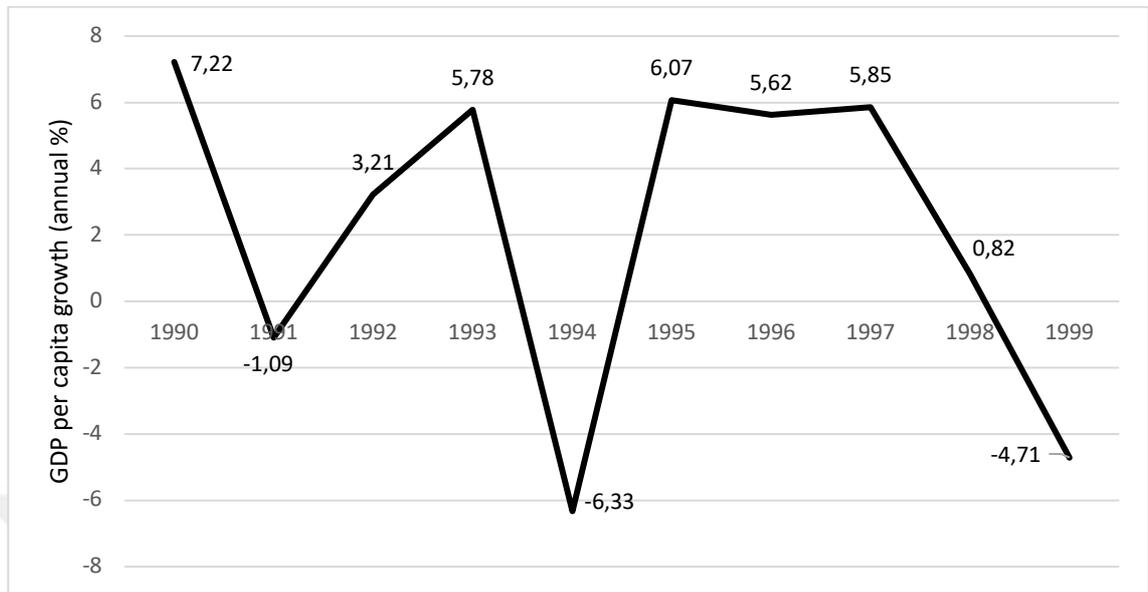
**Figure 2.** Turkey’s GDP growth, 1980-1989



The figure was created based on World Bank data by the author

The Turkish economy faced serious political and economic crises in the 1990s. Turkey's neo-liberal experiment during this period “was characterized by a boom-bust cycle rather reminiscent of the previous decades” due to financial instability and capital account liberalization in the absence of an adequate regulatory framework, leading to a series of economic crises in the 1990s (Öniş and Şenses 2007, 19). The intervention of international financial institutions in the economy and the imbalances created by the lack of an effective legal and political system have also weakened the political administration in Turkey (Süslü 2001). Economic measures taken in Turkey, where an unstable political structure prevails, have failed to overcome the damage of the crises.

**Figure 3.** Turkey's GDP growth, 1990-1999



The figure was created based on World Bank data by the author

The fact that financial liberalization was introduced to the world economies along with foreign trade liberalization in the 1990s caused countries, that were not ready for this liberalization, to face current account deficits on the one hand and budget deficits on the other in a short period. In addition to the inadequacy of savings and capital accumulation, the public debt burden for payments pushed the country away from macroeconomic stability (as can be seen in Figure 3). In this period of limited savings and high inflation, Turkey was able to finance its growth through the use of foreign resources. In this period, Foreign Direct Investment (FDI), which is source of foreign resource utilization, was quite limited compared to the future periods. As another indicator, the increase in external debt stock, is shown in Table 1. The external debt stock, which was 17 billion dollars in 1980, rose to 45 billion dollars in 1990 and continued to show an upward trend.

**Table 1.** Turkey's External Debt Stock in the 1990s\*

<b>Year</b>	<b>External Debt Stock (million \$)</b>	<b>Net External Debt Stock / GDP (%)</b>
1990	52.381	17,9
1991	53.623	18,4
1992	58.595	18,2
1993	70.512	19,6
1994	68.705	26,4
1995	75.948	21,2
1996	79.299	19,7
1997	84.356	20,3
1998	96.351	22,1
1999	103.123	24,3

\*The table is created with the data obtained from the Republic of Turkey Ministry of Treasury and Finance.

Over the past century, Turkey's economic development pattern has been characterized by three main policy phases beginning in 1950, 1960, and 1980 with significant structural transformation and periodic crises. Öniş and Şenses (2007) argue that Turkey represents a reactive state behavior by the effect of external dynamics, including key multilateral and regional organizations, and powerful private actors whose play disproportionate roles in explaining major policy changes. The study (2007, 23) emphasizes that Turkey has largely followed the dominant development discourse and acted similarly to other countries at a similar level of development. At the end of the 20<sup>th</sup> century, the Washington Consensus - a set of policy prescriptions that emphasized free trade, privatization, deregulation, and foreign investment as the keys to economic success - shaped Turkey's development policies. However, this approach narrowly focused on economic growth at the expense of social and environmental considerations and did not address issues of inequality and poverty. The 2001 crisis marked the beginning of a new phase in Turkey's neo-liberal experiment, and the country shifted towards the Post-Washington Consensus.

### **3.2. Turkey's Aspiring Developmental State in the 21<sup>st</sup> Century**

In 2001, the global economic crisis affected Turkey's economy, and led to a serious economic crisis across the country. This crisis led to severe depreciation in the currencies,

economic contractions, financial instability, and rising unemployment in emerging economies such as Turkey. After the 2001 crisis, Turkey received support from international organizations such as the IMF and the World Bank and undertook important economic reforms. These reforms included restructuring the banking sector, ensuring public financing, strengthening fiscal discipline, and accelerating privatization programs. Turkey's economic policies implemented after the 2001 crisis, particularly fiscal discipline and macroeconomic stabilization, led to a significant improvement in Turkey's economic performance (Soytaş 2015). Turkey achieved significant trade and investment liberalization by implementing economic liberalization policies in the 2000s. As a result, the inflow of foreign investors increased, and the volume of exports increased substantially. Turkey undertook significant reforms in the financial sector after the 2001 financial crisis. Through these reforms, the strength and stability of the financial sector have improved, and the banking sector has become more secure (Kibritçioğlu 2005).

The Turkish economy has experienced a five-year period of rapid economic growth driven by structural changes, partly as a result of a combination of external and internal factors, including the hopes in Turkey that European Union (EU) accession is a real possibility only if economic and political reforms continue (Acemoğlu and Uzer 2015). After the Justice and Development Party (AKP) won the election in 2002, the government showed a stronger commitment to implementing reforms which led to greater economic stability. The party's wide political support allowed it to accelerate the pace of economic and political reforms. External pressures, combined with strong political leadership, resulted in an improved economic environment by 2005 compared to the situation in 2001 (Öniş and Bakır 2007).

Following the crisis and the change of government, Turkey experienced a period of rapid growth and modernization, with an average GDP growth rate of around 7% annually between 2002 and 2007 (see Table 2). This growth was largely driven by increased exports, FDI, and a thriving private sector. The government also implemented policies to encourage entrepreneurship and promote small and medium-sized enterprises.

**Table 2.** Macroeconomic Performance of Turkey, 2001-2008\*

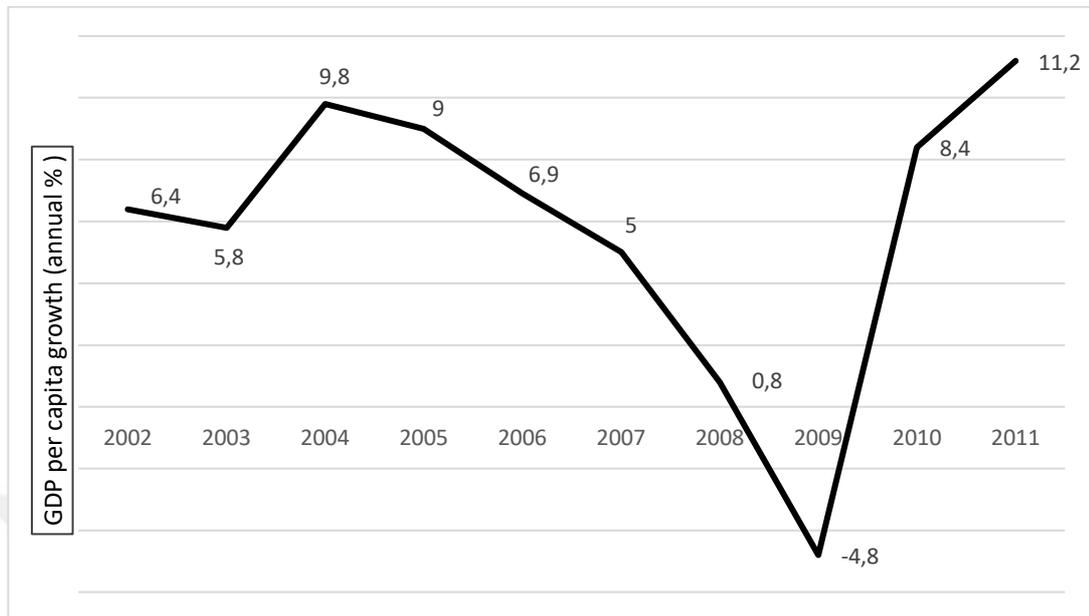
<b>Indicators</b>	2001	2002	2003	2004	2005	2006	2007	2008
% (percent)								
GDP Growth (annual)	-5,8	6,4	5,8	9,8	9	6,9	5	0,8
Inflation	54,4	45	21,6	8,6	8,2	9,6	8,8	10,4
Unemployment Rate	8,4	10,4	10,5	10,8	10,6	8,7	8,9	9,7
FDI, net inflows (% of GDP)	1,7	0,5	0,5	0,7	2	3,6	3,2	2,6

The table is created with the data obtained from the World Bank and TurkStat

The housing market burst in the US, and the resulting mortgage crisis, increased risky investments in financial markets, speculative transactions by financial institutions taking advantage of low-interest rates, inadequate regulation, and supervision mechanisms, global economic imbalances, and trade policies led to the 2008 global economic crisis. 2008 crisis resulted high unemployment rates, large-scale losses in financial markets, impoverishment, and social unrest, especially in developing countries. The crisis also marked an unprecedented interdependence of financial markets (Roubini and Mihm 2011; Eichengreen 2016).

As of early 2005, Turkey failed to take the necessary steps to reduce unemployment and strengthen the economy through new/additional economic measures and necessary structural adjustments. Turkey, which did not have effective economic indicators then, was adversely affected by the 2008 crisis. The economic contraction in the EU and US, which have a significant share in Turkey's foreign trade, hurt Turkey's capacity of exports and growth. In addition, fluctuations in global financial markets reduced foreign capital inflows to Turkey, and the -already high- unemployment rate has climbed above 15%. (Kibritçioğlu 2010). After a sharp recession in 2009 (see Figure 4), growth peaked in 2010-11 thanks to massive monetary and fiscal stimulus. But in the post-2007 period, growth has been markedly low-quality, public spending has become the main pillar of the economy, and the productivity-enhancing structural changes that played an important role in the previous five years have been reversed (Acemoğlu and Uzer 2015).

**Figure 4.** Turkey's GDP Growth, 2002-2011



The figure is created with the data obtained from the World Bank

The 2008 global economic crisis has led to a series of critiques questioning Western-led capitalism and liberal economic policies worldwide. The argument has developed that the crisis was caused by regulatory deficiencies in financial sectors around the world and that the crisis was caused by the lack of regulation of liberal economic policies (Stiglitz 2010). The fact that policies that promote economic growth by reducing public spending, increasing taxes, and cutting public services often result in social unrest and increasing poverty has deepened questions about the continuation of the neo-liberal order (Krugman 2012). The volatility and regulatory gaps created by financial globalization in financial markets led to the crisis associated with globalization. Due to globalization, capital movements, trade, and investment opportunities were liberalized at the global level, these liberalization policies led to financial speculation that led to the crisis (Dumenil and Levy 2013). China's economic performance has led to a critical rethinking of neo-liberalism and a call for limits to the application of free market economic principles. In particular, at a time when criticism of neo-liberalism was associated with increasing economic and social injustices, income inequality, social unrest, and environmental degradation; the alternative offered by emerging economies (especially the BRICs countries) was reflected in the policies of developing countries (Chang 2007; Rodrik 2015).

Turkey, which has been ambitious to overcome the middle-income trap and become a regional power, has changed its foreign policies with the steps it has taken and the choices it has made between the *falling west* and *rising rest* blocs that became more visible after 2011. The political changes made on this axis, in turn, have had sharp trajectories on its political economy of development.

### **3.2.1. Changes in politics, foreign policy, and discourse**

Although it is not possible to give a clear date for the change in Turkey's foreign policy and the related economic and development policies, it would be fair to conclude that this process started with the 2008 global economic crisis. However, this change became more evident with the outbreak of the Arab Spring in 2011. After experiencing a civil war on its borders, Turkey entered a period of political, diplomatic, and economic isolation from its traditional allies.

When Turkey was rejected for full membership of the European Community and faced with the reality that its geopolitical importance - due to its position as the last frontier of the Western alliance - to the West had diminished with the end of the Cold War; it entered an identity crisis. The consequences of the identity crisis and the accompanying concern for 'visibility' brought about certain shifts in Turkey's security and foreign policy decisions: i) growing insecurity concerns exacerbated by new threat perceptions, ii) a shift from a defensive foreign policy to a proactive and multidimensional discourse. The analysis of this shift is crucial for understanding and interpreting development policies. Hence, the attempt to be *domestic* and *national* is an output of this identity crisis and political loneliness.

When the AKP came to power in November 2002, it expanded its base of voters by promoting an agenda of the EU accession and democratic reform. However, after its second electoral victory in 2007, the AKP became more powerful in society and less dependent on the EU and its democratization agenda (Öniş 2010). The deadlock in the accession negotiations in 2015 and the relations have been strained ever since, reveals that post-2005 developments in Turkey do not only indicate a lesser and more limited

Europeanization, but also a process of what has been termed *de-Europeanization* (Aydın-Düzgit and Kaliber 2016).

Turkey's strained relations with its traditional ally, the US, have culminated in diverse issues. With the escalation of tension in each case, Turkey has faced serious political and economic problems. The end of the Cold War and the shift towards a more multipolar global system has transformed the nature of the relationship between the US and Turkey. "In Washington, competition between global powers is now the overriding frame for U.S. foreign policy. Ankara, however, views the world very differently. The rise of Asia and the ascendancy of China are seen more as opportunities than threats" (Ülgen 2021, 1). Turkey believed that it would be in Turkey's long-term interest to reposition the country in the post-cold War multipolar global environment. As a result, Turkey has sought to diversify its foreign policy partners and establish closer ties with rising powers such as China and Russia, albeit at the expense of its traditional partnerships with the West. Turkey's foreign policy decisions have been strongly influenced by shifts in the polarizing forces at both the regional and global levels, as well as changes in its perceptions of the legitimacy of the liberal international order led by the US (Oğuzlu 2020).

The causes and consequences of the global political and economic alternative emerging under China's leadership and the BRICs axis, are not the main focus of this study and require more detailed analysis. However, providing a general overview of the alternative order it offers, particularly for developing countries, would be relevant to understand how Turkey's changing foreign policy choices have influenced its economic and development policies. China has been promoting an alternative global political-economic order that is based on its own model of development. This model is characterized by state-led capitalism with a focus on infrastructure development, and a commitment to multilateralism. China's vision of a new global order is still evolving, but it is clear that it challenges the status quo in several ways. Some scholars and policymakers believe that this alternative approach offered by China has the potential to significantly reduce poverty and promote development in developing countries (Liu et al. 2018). Others are more skeptical, arguing that China's goals are not fully inclusive and that its economic model may not be sustainable in the long run (Verkhovets and Karaoğuz 2022).

The political tension between the US and China has been exacerbated by trade wars and technological competition during the Donald Trump administration. With the Covid-19 crisis, China has become the main threat/enemy for the US. Although issues such as the imbalance in trade volume (see Table 3) and the Uyghur issue harm relations periodically, Turkey sees China as a partner rather than a rival (Üngör 2013). Accordingly, the strategic partnership agreement signed between China and Turkey in 2010, aims to develop multidimensional relations. Turkey's rapprochement strategy with China has also been closely linked to its desire to balance the West politically and economically. As noted earlier in this study, Turkey's claim to redefine itself as a regional power has made it aspire to balance the West and get involved in decision-making mechanisms in the international system. China's attitude towards developing countries and its growing position as an investment exporter has also widened the scope for cooperation between China and Turkey. Turkey's desire to attract investment and technology transfer from China, and the infrastructure opportunities that the Belt and Road Initiative (BRI) are important pillars of the Turkey - China rapprochement. Furthermore, it is crucial to address technology transfer as a significant aspect of cooperation between Turkey and China. Particularly in the realm of military technology, this cooperation has provided the AKP government with both practical and ideological justifications. Turkey's objective of striking a balance in security matters by reducing its reliance on Europe and the US, while also diversifying its options, has positioned China as a key player in technology transfer since the 1990s (Üngör 2017).

The 21<sup>st</sup> century has been shaped by changing internal and external dynamics in Turkey. Turkey entered the new century with high growth rates but could not maintain it. As addressed in this section of the study, external dynamics are highly influential for such an outcome. The ups and downs with traditional allies had an impact on how Turkey attempted to position itself in the global order and what policies it pursued accordingly. As a result of the interactions between ideologies, interests, and institutions, it appears that Turkey's preferences are moving away from a Western-oriented liberal model and towards a diverse form of “state capitalism as an alternative development paradigm” in the post-liberal international order (Kutlay 2019). However, it is not necessarily the case that this has led to sharp turns in Turkey's global trade relations. As can be seen in Table 3, the European continent has a geopolitical significance that has maintained its position

in Turkey's trade relations. In 2016, despite the deadlocked accession talks, Turkey made 40% of its total exports of 149246999,263 thousand USD to the EU, and 37.2% of its total imports of 149246999,263 thousand USD came from the EU. The fact that the EU has the largest share in Turkey's trade volume indicates that Turkey has not disconnected from the West and the Western-centered economic system.

However, the 21<sup>st</sup> century and the shifting internal and external dynamics have resulted in a political will that has adopted a different discourse and a vision with distinctive guidelines for Turkey's economic development. The development policies are shaped around a vision that targets high value-added and high-tech products, qualified human resources, and innovation. In this section of the study, the political motives behind the state-led economic development model are presented; in the following, the related vision, strategy, and outputs will be discussed.

**Table 3. Turkey's Exports and Imports by Country Groups and Share in Total, 2014-2022\***

Turkey's Exports by Country Groups and Share in Total 2014-2022 (Thousand USD)										
Country Group	2022		2020		2018		2016		2014	
	Share (%)	Thousand US \$	Share (%)	Thousand US \$	Share (%)	Thousand US \$	Share (%)	Thousand US \$	Share (%)	Thousand US \$
<b>Total</b>	<b>100</b>	<b>254 191 555</b>	<b>100</b>	<b>169 637 755</b>	<b>100</b>	<b>177 168 756</b>	<b>100</b>	<b>149 246 999</b>	<b>100</b>	<b>166 504 862</b>
European Union (EU 27)	40,6	103 076 615	41,3	70 019 688	43,7	77 429 205	40,2	59 981 416	37,3	62 140 353
Other European Countries	14,4	36 634 910	14,4	24 406 435	13,5	23 921 002	14,8	22 055 816	15,6	25 921 864
North African Countries	5,6	14 110 076	5,4	9 224 060	5,6	9 915 077	5,4	8 069 446	6,2	10 240 492
Other African Countries	3,7	9 495 989	3,5	6 016 613	2,9	5 173 872	2,6	3 833 943	2,6	4 267 226
North American Countries	7,4	18 773 104	6,6	11 188 515	5,9	10 411 462	5,4	8 092 611	4,7	7 908 146
Central America and Caribbean	1,1	2 768 393	0,9	1 452 892	0,9	1 648 509	0,6	957 812	0,6	1 037 676
South American Countries	1,3	3 356 095	1,1	1 928 598	1,1	1 872 836	0,8	1 127 996	1,2	1 996 862
Near and Middle Eastern	17,7	44 982 487	18,5	31 333 151	18,3	32 402 888	22,7	33 869 634	23,7	39 484 912
Other Asian Countries	7,2	18 324 383	7,5	12 775 610	7,5	13 302 023	6,9	10 272 156	7,5	12 568 220
Australia and New Zealand	0,4	1 088 991	0,5	837 289	0,5	825 020	0,5	766 460	0,4	641 175
Other Countries	0,6	1 580 514	0,3	454 904	0,2	266 863	0,1	219 710	0,2	297 935
Turkey's Imports by Country Groups and Share in Total 2014-2022 (Thousand USD)										
Country Group	2022		2020		2018		2016		2014	
	Share (%)	Thousand US \$	Share (%)	Thousand US \$	Share (%)	Thousand US \$	Share (%)	Thousand US \$	Share (%)	Thousand US \$
<b>Total</b>	<b>100</b>	<b>254 191 555</b>	<b>100</b>	<b>169 637 755</b>	<b>100</b>	<b>177 168 756</b>	<b>100</b>	<b>149 246 999</b>	<b>100</b>	<b>166 504 862</b>
European Union (EU 27)	25,6	93 287 097	33,4	73 337 528	33,3	77 051 249	37,2	75 267 734	34,7	87 132 342
Other European Countries	24,1	87 506 192	16,3	35 754 498	16,5	38 042 952	13,8	27 919 268	17,1	43 037 934
North African Countries	1,7	6 099 196	2,2	4 757 326	2,0	4 685 547	1,6	3 252 568	1,4	3 584 217
Other African Countries	0,9	3 411 404	1,2	2 552 458	1,1	2 451 876	1,1	2 151 987	1,0	2 590 420
North American Countries	4,5	16 544 567	5,7	12 603 357	6,5	14 978 319	6,1	12 421 410	5,8	14 674 085
Central America and Caribbean	0,4	1 420 697	0,5	1 030 980	0,4	845 117	0,6	1 116 729	0,5	1 345 394
South American Countries	2,7	9 919 105	2,7	5 997 999	3,5	8 162 498	2,2	4 374 393	1,7	4 333 958
Near and Middle Eastern	5,9	21 345 587	9,2	20 275 717	8,2	18 923 721	7,0	14 236 600	8,6	21 627 221
Other Asian Countries	24,2	87 935 609	22,3	49 030 863	23,3	53 875 139	26,7	54 012 227	23,3	58 521 720
Australia and New Zealand	0,5	1 689 667	0,2	442 416	0,5	1 116 013	0,4	708 206	0,3	677 335
Other Countries	9,5	34 551 458	6,3	13 733 664	4,8	11 020 053	3,3	6 728 119	5,4	13 617 803

\*The table is created with the data obtained from the World Bank and TurkStat

### 3.3. The Manifestation of Developmentalism: National Technology Initiative

The past decade, in which Turkey has redefined itself as a regional and rising power in a global system increasingly tending toward protectionism and authoritarianism, has been the start of a new period of political economy that could be called its introduction to *new developmentalism*. Turkey has shaped this new understanding of development through a series of strategic aims and around a nationalist-populist discourse. Turkey, aiming to jumpstart the *Turkish Century* with the *New Turkey* discourse, claims that the *National Technology Initiative* is its sole vision to ensure the country's technological and economic independence.

Turkey's political elites argue that increasing political, economic, and financial risks at the global level, growing tensions in the fields of technological competition and trade, as well as uncertainties fueled by the new trend of protectionism; have led to a rapid shifting of conflict areas and alliances and make it difficult for countries to permanently position themselves in certain areas. For this reason, countries with global power claims need to manage their development and economic growth processes with a stricter strategic approach. As stated in the Eleventh Development Plan (2019-2023, 2), “[Turkey] aims for an economic and social development process that generates more value by increasing productivity in all areas and gaining competitiveness at the international level through ‘National Technology Initiative’”. In the ‘Industry and Technology Strategy’, which is considered as the strategic document of these objectives, it is underlined that industrial and technology policies will be developed in the light of the National Technology Initiative in this new period, which is described as “the period to take Turkey to the next league and make it among the most developed economies of the world” (Ministry of Industry and Technology 2019, 3)

The National Technology Initiative is a set of objectives to increase Turkey's domestic and national technology production, strengthen its technological independence and build a competitive economy. This initiative provides a strategic roadmap for Turkey to reduce its dependence on foreign technology, develop its own innovative products and strengthen its market position in high-value-added sectors. It is argued that the National Technology Initiative has a meaning beyond high technology, value-added production and self-

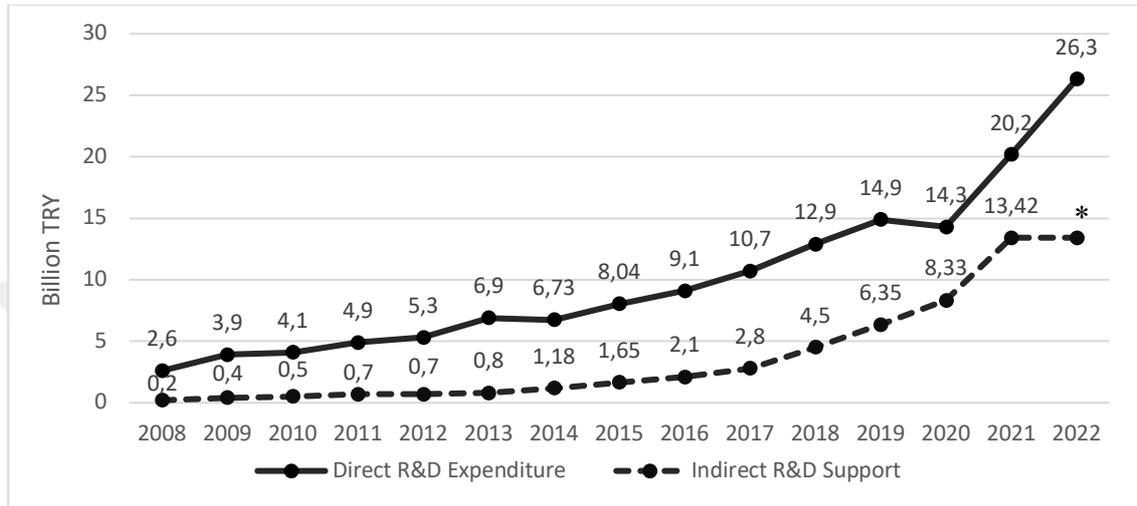
sufficiency gains; Turkey's efforts to democratize technology development also contribute to the idea of a fairer world with an alternative approach to the technology transition driven by global monopolies (Kacı 2022, 43).

The objectives of the National Technology Initiative include promoting domestic and national technology production and R&D activities in areas such as the defense industry, software, artificial intelligence, biotechnology, nanotechnology, and space technologies, supporting the entrepreneurship ecosystem and training human resources. In the relevant strategic document (Ministry of Industry and Technology 2019, 18-19), the concept of *domestic* and *national* is defined as follows: “The production of a factory established in Turkey, even if it is established by foreign capital, is domestic. [Also] if the majority of its production inputs are obtained from Turkish resources, its product is also domestic”. Focusing on localization in production is argued to be important because it leads to fewer imports and more exports, thereby reducing the foreign trade deficit and increasing the demand for domestic goods in the domestic market. The term ‘national’ refers to that which belongs to a nation. “A product that is developed by taking decisions in line with [Turkey's] national interests, is a national production, since its intellectual and industrial property rights, management, decision-making mechanisms and capital belong to [Turkey], even if it has imported inputs in its production”. When one considers that the defense industry is the sector where this strategy is most prominent, it is possible to say that being national is adopted as a priority approach in strategic areas such as national security.

Although the strategy and the neo-populist discourse around it have been visible as of 2019, it would not be fair to argue that Turkey's interest in the industrial and technological sectors has emerged recently. Over the last two decades, Turkey has taken significant steps to strengthen its national innovation system and thus overcome the middle-income trap. It is observed that many initiatives have been taken in the direction of functionalization of institutions, ensuring coordination among state institutions, improving state-private sector-society relations, increasing university-industry collaborations, promoting innovation culture and rationalizing policy-making processes (Kutlay and Karaoğuz 2020). Notably, the state has paid more attention to innovation and has significantly increased the resources allocated to R&D (see Figure 5). However, a closer look at key macroeconomic indicators and the global competitiveness of the

Turkish economy shows that the desired outputs/results have not been achieved (Kutlay and Karaoğuz 2020).

**Figure 5.** Central government budget appropriations and outlays on R&D and indirect R&D support, 2008-2022



\* No official data available

\*\*The figure is created with the data obtained from TurkStat

Spending on R&D activities from the central government budget is planned to increase from 20 billion 249 million TL in 2021 to 26 billion 306 million TL in 2022 (see Figure 5). Similar to previous years, universities are targeted to receive the most R&D funding for knowledge development in 2022 with 38.4% (see Table 4). While the head of the Turkish Space Agency (TUA) frequently underlines the priority and importance of transforming Turkey's space industry ecosystem into a technological and commercial, competitive, dynamic, sustainable, innovative, and entrepreneurial one, the very low R&D spending targeted for this sector is questionable, as can be seen in Table 4.

**Table 4.** Central government budget appropriations and outlays on R&D by socio-economic objectives, 2012-2022\*

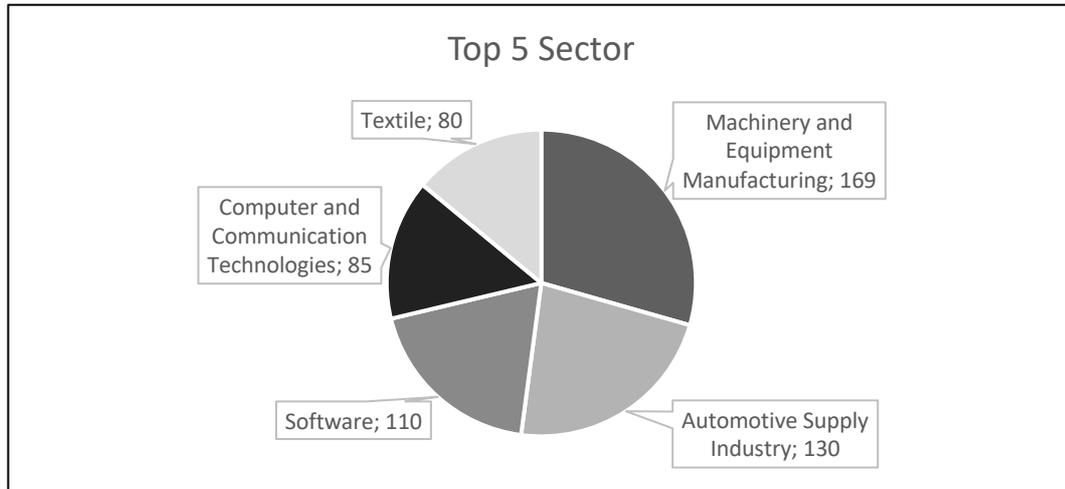
Year	Total	Exploration and exploitation of space	Transport, telecommunication and other infrastructures	Industrial production and technology	The general advancement of knowledge: R&D financed from General University Funds (GUF)	Defense
2012 (TL)	5 304 618 213	14 804 872	21 854 335	478 736 520	2 993 639 096	747 725 529
(%)	100	0,3	0,4	9,0	56,4	14,1
2014 (TL)	6 732 520 879	12 317 182	28 158 022	989 548 918	3 674 888 710	764 515 158
(%)	100	0,2	0,4	14,7	54,6	11,4
2016 (TL)	9 115 985 990	26 722 152	581 902 161	901 831 202	4 674 174 631	1 191 443 863
(%)	100	0,3	4,4	9,4	48,2	17,3
2018 (TL)	13 024 439 520	215 794 169	584 885 047	1 155 263 413	5 946 565 698	2 605 912 978
(%)	100	1,7	4,5	8,9	45,7	20,0
2020 (TL)	14 331 140 195	186 184 716	955 522 044	1 458 757 286	6 988 483 261	1 917 847 816
(%)	100	1,3	6,7	10,2	48,8	13,4
2022 (TL)	26 306 837 150	46 974 726	701 440 310	2 220 018 000	10 111 198 315	9 577 738 555
(%)	100	0,2	2,7	8,4	38,4	36,4

\*The table is created with the data obtained from the TurkStat

Measuring R&D activities funded by the Central Government based on initial budget allocations and actual expenditures is important for determining government support for R&D or the priority of R&D support in the central government budget (TurkStat 2022). In 2022, the highest allocation for R&D was made to universities for general knowledge development with 38.4%. Among socio-economic objectives, the defense ranked second with 36.4%, and industrial production and technology followed with 8.4%.

R&D Centers were established to improve innovation capacity and create an industrial infrastructure in line with global developments, as well as to enable foreign capital companies to develop new technologies in Turkey by structuring their R&D units in the country. There are currently 1261 R&D Centers, by April 2023, which have completed 54,260 projects. The figure below shows (Figure 6) the top five sectors, out of 46 different sectors in total, in which R&D centers are primarily active. With 169 R&D Centers, the Machinery and Equipment Manufacturing sector ranks first place.

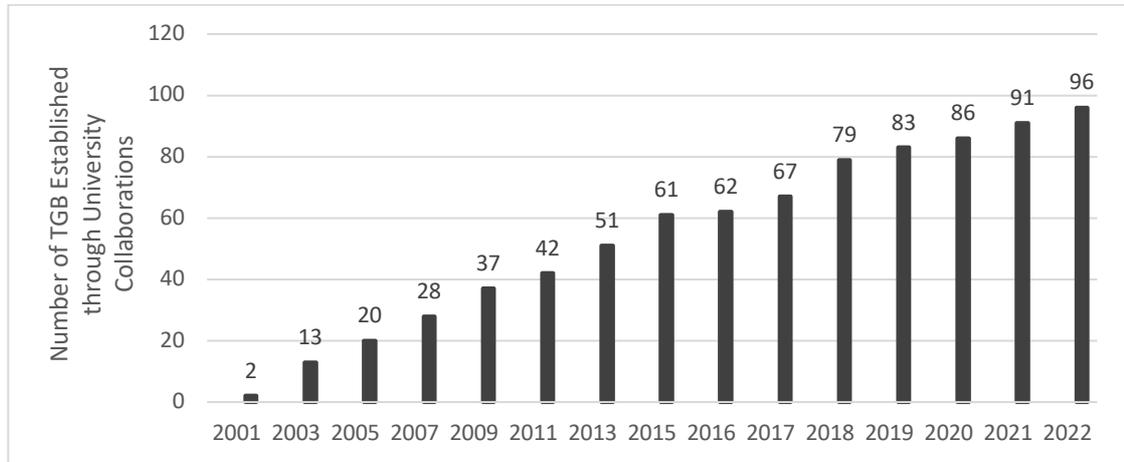
**Figure 6.** Sectoral Distribution of R&D Centers, 2023



The table is created with the data obtained from the Ministry of Industry and Technology

Since 2001, Technology Development Zones, also known as Teknopark, have been established to “produce technological knowledge, commercialize the knowledge produced, improve product quality and standards in products and production methods, develop innovations that will increase productivity and reduce production costs, ensure the adaptation of small and medium-sized enterprises to new and advanced technologies, provide job opportunities for researchers and increase the competitiveness of the industry by accelerating the entry of foreign capital that will make advanced technology investments” (Ministry of Industry and Technology 2023). In the last two decades, Turkey has increased university collaborations and established 98 Technology Development Centers (Teknopark) in 59 cities (see Figure 7). The latest data announced by the Ministry of Industry and Technology indicate that 51,674 projects have been completed by April 2023, with exports from these projects reaching \$8.7 billion.

**Figure 7.** Technology Development Zones (Teknopark), 2001-2022



The table is created with the data obtained from the Ministry of Industry and Technology

Some studies in the relevant literature claim that the export of high-tech products is highly important in showing the level of development of countries. The production of high-tech products, which contributes to the national economy by increasing investments and creating high value-added, is considered as the locomotive of economic growth today (Ağır 2010, Biçen 2019, Ağır and Türkmen 2022). In order to gain a competitive advantage in international markets, keep pace with technological advances, and improve its ability to develop and commercialize new technologies, Turkey is seeking to increase the share of national income allocated to R&D and innovation and to ensure the production of value-added and technological products, as can be seen in Figure 3. Policies to ensure economic and technological independence and to make breakthroughs in critical technologies are structured under the National Technology Initiative and the most visible manifestation of this strategy can be seen in the defense industry.

### **3.3.1. Turkish defense industry sector and its historical transformation**

In the early years of its establishment, Turkey's interest and investment in the defense industry were quite limited, as it struggled to industrialize in the face of economic difficulties and deficiencies in its technological infrastructure. The need for a more secure environment, which became a priority again with the Second World War, did not lead to the development of the defense industry in Turkey. Due to the obvious lack of infrastructure and financial difficulties, the loss of productivity of military factories and

the related investments becoming a burden on the national budget, political polarization and threat perceptions manifested in domestic and foreign policy, Turkey was able to meet its security needs by means of international cooperation. Turkey's foreign dependence on the defense sector was intensified in the early 1950s when it became a member of NATO (the North Atlantic Treaty Organization) and a subject of the Marshall Plan. The oversupply of defense equipment from Turkey's traditional allies flowed into Turkey in the form of military aid, thereby reduced the incentive for local production (Demir 2020).

1974 was a year that Turkey faced the consequences of its deficiency in the defense industry. The 1974 Cyprus Peace Operation led to the emergence of a series of public and private initiatives in Turkey, which practically experienced the risks of foreign dependence on the defense industry. In 1973, the Turkish Aircraft Industry Corporation (TUSAS / TAI) was established under the Ministry of Industry and Technology to reduce foreign dependency on the defense industry; Military Electronics Industry (ASELSAN) was established in 1975 to meet the communication needs of the Turkish Armed Forces (TSK) in a national and indigenous manner; Military Battery Industry and Trade Corporation (ASPILSAN) was established in 1981 to meet the basic needs of the TSK for nickel-cadmium batteries; and Air Electronics Industry (HAVELSAN) was established in 1982 to meet the software engineering needs of the TSK.

1985 marks a period in which institutionalization and public incentives came to the fore in Turkey's Defense Industry. The Fifth Five-Year Development Plan (1985-1989) stated that emphasis would be placed on investments aimed at eliminating resource and infrastructure inadequacies in defense. In the same year, the Presidency of Defense Industries Development and Support Administration (SAGEB) was established within the Ministry of National Defense and restructured under the Undersecretariat for Defense Industries in 1989. The Turkish Armed Forces Foundation (TSKGV) was established in 1987 to increase the combat power of the Turkish Armed Forces and develop defense systems and products based on modern technology. The Rocket Industry and Trade Corporation (ROKETSAN) was established in 1988 to meet the rocket and missile needs of the TSK, and FMC- Nurol Defence Industry Corporation was established in 1989 as Turkey's first private defense company. The Principles of Turkish Defense Industry Policy and Strategy, which is considered as the second political and strategic document in the

field of the defense industry, entered into force in 1998 with the objectives of “producing high-tech war weapons and equipment domestically, establishing production facilities by creating the necessary technological base for this purpose, and encouraging and supporting the already established defense industry facilities” (Ministry of National Defence 1998). Turkey's progress in the defense sector in the last quarter of the 20th century was marked by the targets of reducing foreign dependency, eliminating infrastructural deficiencies, and catching up with modern technology and institutionalization.

The emphasis on the defense sector has become much more prominent in the new century, with almost all strategy documents prioritizing the development and sustainability of Turkish defense and security capabilities. As a matter of fact, the first important step towards achieving targeted independence in defense in the new century was taken in 2004 with the Defense Industry Executive Committee Meeting. As a result of the meeting, which was chaired by Recep Tayyip Erdoğan in his position as Prime Minister and attended by Vecdi Gönül, Minister of National Defense; it was decided to cancel the current contracts for the modern tank, attack tactical reconnaissance helicopter and unmanned aerial vehicles (UAVs) projects and to “establish new procurement models based on domestic production and original design with maximum use of national capabilities and to meet the needs of the Turkish Armed Forces” (Hürriyet 2004). In this respect, the Ninth Five-Year Development Plan (2007-2013) has frequently underlined the importance of the development of the national defense industry. This plan aims to “develop a competitive, self-sufficient, flexible production structure that is integrated with the national industry, that enables effective participation in international cooperation activities in the fields of joint production-design and R&D, and to acquire the necessary infrastructure, technological and managerial capabilities” (Ninth Five-Year Development Plan 2007-2013, 12).

Despite the progress observed in the Turkish Defense Industry and all the projects developed, foreign dependency on defense continued in the first decade of the new century. The reflection of the global economic crises on the domestic political transformations and the inability to overcome infrastructural and financial deficiencies due to domestic and foreign policy challenges led to a lack of prioritization of investments in the defense sector. However, with the developments in 2011, it became clear that

security and defense needs could not be put on the shelf. The Arab Spring in the Middle East and North Africa has turned into a crisis that Turkey cannot ignore, as it affects its policies, interests and borders in the first place. The diplomatic tensions with its traditional allies and the lack of active support from NATO against the threats on the borders can be considered as a driving force toward Turkey's ambition of full independence in the defense sector.

Following 2011, it is observed that the domestic and foreign policies of states have started to address security concerns and initiatives have been taken to eliminate these concerns. The increase in global defense expenditures is the result as well as the cause of these concerns. With civil war on its territorial borders and political tensions on its maritime borders, Turkey has become an important shareholder of security concerns. The fact that the emerging defense needs have been left unanswered and unsupported by traditional allies has created an opportunity for the development and transformation of the Turkish Defense Industry. The Tenth Five-Year Development Plan (2014-2018) underlines the desire to be domestic and national in the defense industry. While establishing a competitive structure for the sector has been set as a primary target, it has also been aimed to catch up with international technological developments and to create a structure that integrates with the national industry.

Integration of defense equipment with technological advancements has become a factor of advantage in the global power struggle, prompting Turkey to take action. Accordingly, there has been a significant increase in public expenditures on R&D activities and university collaborations. Firms operating in the defense industry stand out among those providing funds for R&D activities (see Table 5). These firms allocate large budgets for R&D expenditures and strive to integrate the defense sector with global technological developments. The fact that the total R&D expenditure of 11,450,688,997 TL made by ASELSAN, TAI and ROKETSAN, the top three R&D spenders, constitutes 44.9% of total R&D expenditures is an indication of high attention given by the defense industry attaches to R&D activities.

**Table 5.** Top Five Companies with the Highest R&D Expenditures in Turkey\*

	2018	2019	2020	2021
1	ASELSAN	TUSAŞ(TAI)	ASELSAN	ASELSAN
	2.162.839.458,00 TL	3.013.816.010 TL	3.356.327.355 TL	5.614.780.977 TL
2	TUSAŞ(TAI)	ASELSAN	TUSAŞ (TAI)	TUSAŞ (TAI)
	1.575.962.278,43 TL	2.975.377.381 TL	2.648.665.45 TL	4.389.834.303 TL
3	FORD	ROKETSAN	TOFAŞ	ROKETSAN
	666.587.048,67 TL	525.251.883 TL	575.082.121 TL	1.446.073.71 TL
4	ROKETSAN	TURKCELL	ROKETSAN	TURKCELL
	512.109.199,00 TL	462.477.446 TL	488.816.11 TL	680.910.355 TL
5	TURKCELL	HAVELSAN	TUSAŞ(TEI)	FORD
	397.236.556,35 TL	458.482.341 TL	458.158.372 TL	680.519.000 TL

\*The table is created with the data obtained from the Turkishtime

Prioritizing the use of technologies such as autonomy and artificial intelligence (AI) to help produce high-quality products, has become an urgent objective for Turkey. Turkey has taken important steps to overcome infrastructure deficiencies and to catch up with the modernization of the defense sector in global markets. The most prominent of these steps is the success achieved in the aerospace sector, supported by public and private initiatives.

In the 1980s, the integration of technological innovations into defense equipment was a global phenomenon, and Turkey initiated a national UAVs procurement and acquisition program. After a series of unsuccessful attempts, the Gnat 750 and I Gnat UAVs designed by General Atomics entered the inventory of TSK in 1995, and these systems were used by the Turkish Land Forces until 2005. Between 2007 and 2010, Heron and Searcher UAVs were leased from Israel Aerospace Industries and Dominator UAVs from Aeronautics. In 2010, 10 medium altitude long endurance (MALE) class Herons from the Israel-based IUP company entered the inventory of the Air Force for the first time. Some subsystems of the Heron were developed by ASELSAN, SAVRONİK and MİLSOFT (Karaağaç 2016). Turkey's position in the Gaza War and the diplomatic tensions caused by the Mavi Marmara incident have created difficulties in the delivery, deployment and maintenance of the Herons. In a speech in 2018, former Minister of National Defense Nurettin Canikli claimed that the ten Herons procured from Israel were defective (İHA

2017). Another diplomatic obstacle to Turkey's procurement strategy can be seen in its relations with the US in the same years. In 2008, Turkey requested ten American-made MALE-class UAVs, four MQ-1 Predators and six MQ-9 Reapers. In 2010, former US President Obama warned Prime Minister Erdogan that the Turkish government's position on Iran and Israel could be an obstacle to Turkey's access to American arms (Financial Times 2010). In 2014, Turkey again demanded approval from the US Congress, but its attempts remained unanswered as it entered a period of political crises and diplomatic isolation. Indeed, in 2016, İsmail Demir, the President of the Defense Industry, expressed his gratitude to the US for not approving some projects and stated that this situation pushed Turkey to develop its own systems (AA 2016). A similar discourse occurred in 2018, with President Erdoğan stating that “the bad neighbor made us the possessor of capabilities” (Sabah 2018).

The first turning point in Turkey's UAV adventure was realized in 2004 with the 'ANKA Multi-Role ISR (Intelligence, Surveillance and Reconnaissance) System Project' developed in cooperation with TAI-TUSAŞ. The MALE class twin-engine version of the 'ANKA-2'UCAV, which allows for long-term operations, was renamed 'Aksungur' and developed in 18 months. The ANKA and AksungurUCAVs, now in the TSK inventory, are considered important steps for Turkish defense capabilities. TAI continues to increase production through important collaborations and continues its efforts to develop products that attract attention in the global market.

The second milestone of the story was the Bayraktar mini-UAV system, which emerged as a joint venture between Kalekalıp and Baykar Makina in 2005 and entered the TSK's inventory in 2007. With its completely national and domestic electronics, software and structural components, Bayraktar mini-UAV is Turkey's first national aerial vehicle to enter the TSK's inventory, as well as the first exported aerial vehicle (BaykarTech 2007). The prototype development of the Bayraktar TB2 Tactical UAV, another important asset of Turkey's growing defense capacity, began in 2007. Since 2014, Bayraktar TB2 Unmanned Combat Aerial Vehicle (UCAV) has been in active service with the TSK, the Gendarmerie, and the Turkish National Police, and it is the first aircraft to be exported on this scale. Bayraktar AKINCI, which has reached the highest altitude ever reached by a domestically developed aircraft, is expected to be the new force multiplier of Turkish defense in the skies, with more effective firepower, equipment and hardware capabilities

than the Bayraktar TB2 and ANKA (AA 2021). In addition, Bayraktar Kızılelma (MİUS), which is expected to make its first flight in 2023, is an unmanned aerial aircraft project announced by Baykar Technology. MİUS, which has already been frequently mentioned in the press, is expected to stand out in the UAVs/ UCAVs market with its artificial intelligence technology and air-to-air capabilities (BaykarTech 2022).

**Table 6.** Domestic and National UAVs / UCAVs\*\*

<b>Names of UAV / UCAV</b>	<b>Producer Company</b>	<b>Year of Production</b>
Turna	TUSAŞ	1995
Bayraktar Mini	Baykar	2007
Malazgirt	Baykar	2009
Şimşek	TUSAŞ	2009
Anka	TUSAŞ	2010
Karayel	Vestel	2014
Bayraktar TB2	Baykar	2015
Alpagu	STM	2017
Togan	STM	2017
Serçe-I	ASELSAN	2018
ARI-1T	ASELSAN	2018
Kargu	STM	2018
Mius Mini	ASELSAN	2019
Aksungur	TUSAŞ	2021
Akıncı	Baykar	2021
Bayraktar DİHA	Baykar	2021
MİUS	Baykar	2023*

\* MİUS is planned to enter production by the end of 2023.

\*\*The table is created with the data obtained by author

It is evident that many driving forces have contributed to the success achieved in line with the modernization process in Turkey's defense industry. Global markets have transformed into an area where states that are unwilling to share the technologies, they have developed operate within the framework of more protectionist policies. Unsurprisingly, the defense

sector has become one of the most competitive sectors in the global market, drawing attention to changing and increasing security perceptions. Turkey's development in the defense industry, especially in the aerospace sector, has reached a noteworthy level in this market where political and economic balances are very sensitive. Although the extraterritorial operations in Syria and Libya and the political consequences of the policies towards the Eastern Mediterranean have had negative consequences for Turkey's prestige and foreign relations, Turkey's defense policy decisions have echoed in the global market.

Turkey has recognized the importance of integrating breakthrough technological developments such as autonomy and AI into the defense sector. Accordingly, the increasing public spending on R&D and the huge budgets allocated by the leading companies in the defense sector for these efforts play an important role in the success story of UAVs/UCAVs. Although Turkey has faced many economic and political obstacles in the pursuit of the principle of 'fully independent defense', it would not be wrong to assert that the will of the political elites has shown continuity in this regard. It was mentioned in the previous chapter that the presence and persistence of political will is an important contributor to the achievement of development goals.

The modernization of the defense sector and the integration of high-capacity technological developments into the sector constitute the most important pillar of the 'National Technology Initiative' strategy and the 'New Turkey' discourse. However, Turkey has many opportunities for the development of the defense sector. However, state institutions need to function well to reach sustainable and systematic development rates. A professional and rational bureaucracy and state institutions that are specialized in their fields will need to develop effective relations with the private sector and implement feasible and rational policies.

Another sector that has been developed on the axis of the National Technology Initiative and has been included among the development targets is the automotive sector. The Industry and Technology Strategy (2019) states that accelerating the transformation to connected, electric and autonomous vehicles in the automotive sector, is an important part of the vision of domestic and national development. As stated in the strategy document (2019, 41); the "*Turkey's Car* initiative will serve the transformation of existing

automotive main and sub-industry suppliers and technology entrepreneurs and increase their contribution to exports. On the other hand, Turkey's Car is seen as an initiative that can stand out from the main automotive industry players and gain a place in the global connected and autonomous electric vehicle market". Therefore, it will be important and relevant to address the Turkey's Automobile Initiative Group (TOGG) initiative, which creates room for maneuver especially in its domestic politics.

### **3.3.2. Turkey's Car in line with the aim of being national and domestic**

The automotive sector is one of the sectors that affect many sectors in a country and acts as a locomotive for the development of the country in economic terms due to the added value it creates, its direct and indirect contribution to employment, and technological development. In Turkey, the automotive sector has always attracted a lot of attention and its importance has been repeatedly emphasized in almost all development plans. Although an important step was taken with the '*Devrim Cars*' (revolution), the ambition for a domestic car has never gone beyond mere rhetoric. The production of a domestically branded automobile has frequently been mentioned as a means of reducing foreign dependency and the current account deficit, increasing employment, and providing both foreign currency and prestige to the country (Avcı 2020).

Turkey's automotive industry has been shaped by both domestic production and foreign investments. Foreign automotive manufacturers shifted their production bands to Turkey due to factors such as Turkey's strategic location, logistical advantages, labor force, and competitive costs (Çetin and Uğur 2022). In the early 2000s, Turkey's automotive industry was integrated into transnational markets through increased exports of finished vehicles. However, these vehicles were mainly produced with high-value-added components imported from abroad due to the lack of a strong domestic supplier network. After 2010, there has been a shift towards shallower integration, accompanied by political crises. Turkish suppliers concentrated their activities on low value-added activities, while high-value-added activities were increasingly imported (Langbein and Markiewicz 2019). Most of the state-funded R&D investments for local manufacturers have focused on projects related to body parts of automobiles, while projects that would bring high value-added production have been ignored (Akçomak and Bürken 2021). Turkish suppliers have

continued to produce low-value-added products within global automotive value chains, downsizing or shifting to similar lower value-added sectors (Sancak 2022).

During this period, new rhetoric emerged that Turkey aims to improve its innovation capabilities in the automotive sector. Turkish political elites, led by then Prime Minister Erdoğan, emphasized that Turkey should create more added value in the automotive sector and aim to achieve competitiveness in the international market through domestic and national production. In 2011, Erdoğan stated that he believed that politicians and businessmen owed it to society to take steps to create a domestic automobile brand (AA 2011):

In this sector, in which we have been active for more than half a century, it is time to create a unique model of our own....We will achieve this; this will happen. Turkey will produce its own one hundred percent domestic automobile. Turkey already has the necessary knowledge, experience, and technology for automobile production for many years. With the environment of confidence and stability that has emerged in recent years, this business has now become economically profitable....We will come together with the sector, determine the problems and how to overcome them together, and create a domestic automobile brand....I believe that creating a domestic automobile brand for both politicians and businessmen is also a debt to society. There are surely brave ones in this country who will take on this task.

Although Erdoğan underlined his desire for a new transformation in the automotive sector with the words "I have a wish, even an insistence, for us to develop a domestic automobile brand" (NTV 2014), the first concrete step in this regard was taken in 2017. In November 2017, five entrepreneurs of TOGG were announced at Turkey's Automobile Joint Venture Group Promotion Meeting held at the Presidential Palace. In 2018, Anadolu Group, BMC, Kök Group, Turkcell and Zorlu Holding established TOGG under the coordination of the Ministry of Industry and Technology and the Union of Chambers and Commodity Exchanges of Turkey (TOBB). In 2017, Erdoğan stated that TOGG, which was planned to be developed by the private sector, would be strongly supported by the state (Presidential Speech, 02.11.2017):

We do not want the slightest delay in this project, which I believe has a special place among Turkey's 2023 targets. I would like to state that as the President of the Republic, I will personally stand by your side in solving the problems and overcoming the obstacles you will face. I would even assign a team in the Presidency to follow up on this project and eliminate the problems, if necessary, because we can no longer tolerate any loss of time. Since these brave friends of ours have come out and put their hands under the stone, it is up to us to shoulder and support them

wherever necessary. I am already announcing that I am the buyer of the first automobile you will put on the market, on condition that I pay for it. <sup>1</sup>

Indeed, TOGG was granted customs duty exemption, tax reduction, income tax withholding support, interest and dividend support, qualified personnel support, investment location allocation and purchase guarantee (Presidential Decree No. 1945). TOGG has developed with the discourse of a hundred percent domestic automobile however, it currently owns Turkey's intellectual and industrial property rights and is therefore *national*; It started mass production of the C-segment SUV, the first innately electric, connected smart device, at the Gemlik TOGG Technology Campus as of 2022. Established with the objective of becoming Turkey's first global mobility brand. It is aimed TOGG to be ahead of its competitors with its C-SUV model, which will be produced as Turkey's first innately electric, zero-emission, and smart car with features such as the longest wheelbase in its class, the largest interior volume, the best acceleration performance and low total cost of ownership (Karakaş 2022).

Despite the state subsidies, which were not conditioned on performance, employment or investment, Turkey was unable to develop a 100 percent domestic and national automobile due to insufficient domestic supplier capacity, financial and infrastructure deficiencies. The most expensive part of the TOGG is the battery, and since Turkey does not have the infrastructure to produce the battery domestically, it agreed with the Chinese company Farasis to develop and supply the battery. German engineering company EDAG was responsible for R&D, while Italian Pininfarina was responsible for design. Karakaş, the CEO of TOGG, stated that the car, whose domesticity and nationality were questioned with all these data, is 51 percent domestic (Habertürk 2023).

TOGG, which is frequently attributed importance under the strategy of National Technology Initiative, is aimed to turn into a brand that will strengthen the hand of 'New Turkey' in the global market with its economic development goals and to take place in the global market with its competitive prices in the Turkish century. Political elites and founding entrepreneurs of the car have consistently emphasized that TOGG is the outcome of national and domestic development objectives. In this sense, it would not be wrong to say that it has been used as a space for maneuvering in domestic politics

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<sup>1</sup> All speeches of political elites were translated into English by the author.

irrespective of its economic outcomes. However, only time will reveal to what extent it will be integrated into the domestic and international markets.

### **3.3.3. Desire to be national in space and energy**

Although the strategies and discourses, developed under the umbrella of the National Technology Initiative have been significantly manifested in the defense industry and the automotive sector, the emphasis on other sectors should not be neglected. The Industry and Technology Strategy identifies focus sectors in which high value-added, medium, and high technology products are targeted to be produced with domestic capabilities and resources: The machinery sector has been prioritized as a locomotive sector that has a triggering power by providing inputs to many sectors as well as reducing foreign dependency and foreign trade deficit. With high technological capacities such as AI and automation, it is aimed to produce computers, computer hardware, communication equipment and similar electronic products domestically and nationally. The same document also underlines the need to align the high value-added chemical and pharmaceutical sectors with national technology capacities.

It is seen that the space and aerospace sector also stand out in the integration of sectors that are aimed to intertwine and support each other with national technology capabilities and capacities. In fact, the space sector is one of the main pillars of the development discourse under the umbrella of the National Technology Initiative. Turkish Space Agency (TUA) was established in 2018 with the aim of strengthening the space sector in Turkey, expanding technology development studies in these fields and developing the necessary human resources (Presidential Decree No. 23). TUA was established with the mission of “realizing the state's space strategy in an efficient, secure and sustainable manner by rapidly developing the country's qualified human resources and space ecosystem in the field of space and by utilizing international cooperation when necessary” (TUA 2018). It has been the subject of a series of political discourses in which nationality is frequently emphasized. National Space Program (2022-2030, 4) was prepared with the “aim of ensuring the design, production, integration, and necessary tests of all kinds of products, technologies, systems, facilities, tools, and equipment related to space and aerospace, including satellites, launch vehicles, and systems, aircraft, simulators, space

platforms”. The program was prepared under the coordination of the Ministry of Industry and Technology and introduced with President Erdoğan's words “Today, the way to establish justice on earth is passing through a strong presence in the sky” (National Space Program 2021). National Space Program has developed with the claim that developments in the space sector make significant contributions to the value of the geographical location, technological competencies, economic capacity, international cooperation capabilities and economic multipliers of countries. The objectives of the Program are summarized as follows: “Developing the technologies and necessary infrastructures that will be prominent within the framework of the needs and capabilities in the field of space technologies in Turkey; reducing foreign dependency; planning for the use of space technologies as a tool for the economic development of the country; advancing the existing capabilities and achievements in the field of space with national technologies; and contributing to the scientific knowledge and experience of humanity” (TUA 2021).

It is a frequently underlined argument in the relevant literature that space technologies, which require high technology, act as a catalyst for the advancement of technological developments (Kutlu 2020). Since it is more complex than in other sectors to assemble the necessary knowledge and materials in satellite and space technologies, it is essential to establish an effective R&D program, which requires the continuous development of basic capabilities. As can be seen in Table 4, expenditure in this sector is quite low. The equipment needed for R&D requires almost as high a level of technology as the technology itself. Turkey's financial constraints and lack of infrastructure could be one of the biggest obstacles to its development in this sector.

In the early 2000s, Turkey tried to integrate into the space sector through foreign collaborations and technology transfers, and a series of projects were supported by political elites under the leadership of TUBITAK. Within the scope of the RASAT project, satellite installation, integration, and test laboratories were established, and cooperation was initiated to provide the necessary qualified human resources. RASAT is considered to be the first national satellite since it was designed and manufactured entirely by Turkish engineers by using the capabilities gained in BİLSAT as Turkey's first earth observation and remote sensing satellite (National Space Program 2021, 11). Turksat satellites developed through projects such as BILGE, GEZGIN, GOKTURK, and KUZGUN have been among Turkey's leading outputs in space studies. The National Space Program aims

to develop a domestic and national satellite with domestic engineering and design. As a matter of fact, under the leadership of TUBITAK Space Technologies Research Institute and with the support of TAI, ASELSAN and CTech; TURKSAT 6A, Turkey's first domestic and national communication satellite, is planned to be launched into space in 2023 (AA 2022).

Turkey's space and satellite studies attract the interest of the young population in particular, and it is seen that a large portion of the human resources in these studies is provided by this population (Yüksek 2022). As a matter of fact, these activities are widely featured in Teknofest organizations, and competitions are frequently organized among and within universities within the scope of the National Technology Initiative. The aerospace sector is very costly, requiring high technology and knowledge from project formulation to design, from R&D to production. Financial and infrastructural inadequacies need to be overcome, and adequate information resources need to be acquired and continuously developed. It is often claimed by Turkish political elites that the gains, power, and international reputation will far outweigh the costs. The goal of sending a Turkish citizen into space in the *Turkish Century* has been set, and the first astronauts were even introduced at the last 2023 Teknofest (AA 2023).

TUA stated that the domestic and national development of critical technologies in the space industry, whose commercial and strategic importance is increasing day by day, will contribute to economic development and increase Turkey's soft power through commodities and services to be exported internationally (Yıldırım 2022). Although it will become clear in the future to what extent and to how far these objectives will be met, the ambition to be national and domestic in space technology is frequently on the agenda in domestic politics, like other sectors attributed importance under the umbrella of the National Technology Initiative.

Turkey aims to enhance energy security, reduce greenhouse gas emissions and develop a more sustainable and resilient energy infrastructure by aligning its National Technology Initiative with the energy sector. The initiatives driven by the strategy have the potential to contribute to the modernization and transformation of Turkey's energy sector, and in the process stimulate innovation and economic growth. The Industrial and Technology Strategy (2019, 35) recognizes the need to maximize this potential: “Another factor that

will ensure the continuity of economic development is the sustainable use of energy and natural resources. In order to reduce dependency, technologies are needed to develop, store and transfer alternative energy sources to the place of use”.

Turkey, as a developing country, has developed its energy sector over time to meet its growing energy needs. The transformation of the energy sector has been influenced by various concerns at different periods. During the 1980s and 1990s, efforts were made to expand the use of natural gas, establish a legal and regulatory framework to restructure state institutions, and increase infrastructure investments to meet the growing energy demand. In the 2000s under the AKP government, private sector participation in Turkey's energy industry became an important factor in the development of energy markets in Turkey. Since then, “energy has been a reliable destination for accumulation of capital” (Erensü 2018,149).

Berat Albayrak launched a new strategic perspective that shaped energy policies in 2017: *National energy*. Underlining that “all strategic visions must be realized in order for Turkey to move to a higher league, become one of the ten largest economies and create a competitiveness in the field of energy as in many other fields”, Albayrak's speech (HaberTurk 2017) made the energy sector one of the most attractive sectors in Turkey. The studies, following the increase in investment in the sector in recent years, shows that Turkey is positively differentiated from other developing countries in terms of electricity generation indicators (Ecemiş 2021). However, Turkey still continues to be significantly dependent on external energy supply. In order to reduce this dependence, the need to utilize domestic resources in energy production has been repeatedly stated by public institutions. Indeed, the Tenth Development Plan (2014-2018, Article 677) outlines the objective of “increasing the level of domestic manufacturing of equipment and developing domestic technologies in order to maximize the contribution of renewable energy to the economy”.

Private investments, which are still on an increase with significant incentives and subsidies from the Turkish government, have strategic importance for Turkey's recent policy of prioritizing renewable energy and making more use of domestic resources in order to reduce its dependence on foreign energy. Although renewable energy is one of the most important pillars of the national energy strategy, there are also many important

initiatives, through public-private cooperation, in the Turkish energy sector (eg., nuclear energy, hydrogen) (Bayraktar 2022). President Erdoğan (Presidential Speech: 02.05.2023) highlights that these initiatives will continue to increase, and that there is a strong political will for Turkey to become “a country that export energy, not one that needs it”. country. It seems that Turkey's objective of reducing foreign dependency in energy through domestic resources and national technologies will continue to be a frequently raised issue within the framework of the National Technology Initiative.

### **3.4. Concluding Remarks**

Turkey's development efforts, approaches and discourses have been evolved through various policies in different periods. Throughout the 20<sup>th</sup> century, Turkey's development policies were shaped by key multilateral and regional organizations as well as by global powers. However, while these policies focused on economic growth, they ignored social and institutional issues and did not address problems of economic inequality and instability. Although the early years of the new century marked a positive development in Turkey's macroeconomic indicators, it could not be sustained. The 2008 global economic crisis marked the beginning of a new era for Turkey's neo-liberal experience and the country started to turn towards the Post-Washington Consensus. In this context, studies reveal that Turkey's development policies have been shaped by internal and external dynamics and have followed a similar trajectory with countries that are similar to its capacity and development level.

While Turkey has redefined itself as a regional and rising power in the last decade, a new form of development strategy has been initiated as the global system has become increasingly protectionist and authoritarian. Turkey is shaping this new understanding of development around a nationalist-populist discourse and strategic goals. With the national and domestic discourse, Turkey aims to launch the Turkish Century, claiming that the National Technology Initiative carries the vision of ensuring the country's technological and economic independence. Turkey's political elites argue that increasing political, economic and financial risks at the global level, technological competition and trade tensions, as well as the uncertainties created by the protectionist trend, are rapidly shifting areas of conflict and alliances, making it difficult for countries to permanently position themselves in certain areas. With this argument, the political will of Turkish government,

has adopted a new developmental strategic approach. It is emphasized that industrial and technology policies will be developed in the light of the National Technology Initiative with the argument of that it will take Turkey to the next league and put it among the most developed economies of the world.

Turkey seeks to increase investments by boosting the production of high-tech products, creates high added value and develops and supports strategic sectors that are considered to be the engines of economic growth. The strategy also includes policies that focus on selected sectors by the Turkish government, with the aim of achieving independence and breakthroughs in critical technologies. High-capacity technological advancements and initiatives in the defense, automotive, space and energy sectors constitute the most important pillars of the 'domestic and national' discourse. While Turkey has taken important and successful actions in this regard, there are financial, infrastructural, and institutional challenges. Since the questions about the developmental state institutions and capacity of Turkey are too serious to be ignored, it is obvious that Turkey is not a developmental state. However, it would not be wrong to argue that it aspires to become a developmental state as the roles and strategies adopted by the political elites are in line with this aspiration.

#### **4. NATIONAL TECHNOLOGY INITIATIVE AND WOMEN: POLICY-MAKING AND IMPLEMENTATION PROCESSES**

The role of women in economic development is receiving an increasing global attention. Women's labor force participation, entrepreneurial and economic activities are critical to a country's economic growth and development. A greater presence of women in the economic sphere positively affects economic performance through factors such as increased labor force participation rates, diversification of employment and efficient use of economic resources. A greater presence of women in the economy brings with it both the potential to raise the living standards of individuals at the micro level and the opportunity to increase a country's competitiveness and sustainable development at the macro level. Therefore, understanding, promoting, and supporting women's participation in economic development is vital to ensure economic growth and social welfare.

Turkey stands out as a country with a dynamic and growing economy. In this process, the role and contribution of women in economic development has become increasingly significant. Women's labor market participation and entrepreneurial activities are one of the key factors supporting Turkey's economic growth and sustainable development goals. Women in Turkey have made significant economic progress in recent years and increased their labor market participation rates. The number of women entrepreneurs is also rising rapidly, adding value to Turkey's economy through innovative business ideas and job creation potential. However, there are still challenges to women's full participation in economic life and the full utilization of their potential. Gender inequality in the sectors where women are employed, barriers in access to career opportunities and difficulties for women entrepreneurs in accessing finance are areas that require further efforts.

In the second chapter of this study, Turkey's new development goals were outlined in the framework of the National Technology Initiative, which aims to strengthen the country in the technological field and increase its level of competitiveness. However, it is clear that the National Technology Initiative is a process that requires the participation of all segments of society. The role of women in this process is of great importance both in realizing Turkey's technological transformation objectives and in terms of gender equality. Increased participation of women in policies aimed at development, in strategic

sectors selected by government and in the endeavor to become domestic and national will support the success of Turkey's National Technology Initiative and ensure the country's sustainable economic development.

However, as the main argument of this thesis, the presence of women in decision-making and policy-making mechanisms in the National Technology Initiative is one of the cornerstones of success. Women's active participation in this process contributes to the development of more inclusive, innovative and sustainable policies. Their presence on policy-making and decision-making processes is an important step towards gender equality and encourages women to realize their full potential. This in turn supports the success of Turkey's National Technology Initiative and empowers the country's economic development.

The assessment of women in development has been an important field of study in terms of understanding their role. The literature in this area has addressed the position of women in economic development processes, with a primary focus on labor market participation, challenges and barriers in the labor market. However, this approach defines women's role solely in terms of labor market participation and has shortcomings in fully reflecting women's potential and contribution. Similarly, in Turkey, the relationship between economic development and women has generally been examined in a limited way with regard to women's status in the labor market. This overshadows the role of women in policy-making and decision-making mechanisms. The aim of this study is to assess the role of women in development policies more comprehensively and to examine how Turkey is approaching this issue. By examining the policies and strategies of public, non-governmental organizations (NGOs) and private sector actors in Turkey on this issue, it will be revealed how women's role in policy-making and decision-making mechanisms is addressed. In addition, the outcomes of interviews with firms and NGOs operating in selected strategic sectors will also be evaluated in this study. In this way, it is aimed to provide a better understanding of the role of women in development policies, to ensure that women take a more effective place in economic, social and political life, and to provide recommendations that will ensure that the development targeted to be undertaken by the Turkish government is sustainable.

#### **4.1. Economic Development and Women: Labor Participation and Entrepreneurship Activities**

Economic development is designed through multi-dimensional and inclusive policies with the objective of improving social welfare. The impact and contribution of many factors in the change of economic indicators has been studied extensively by experts and scholars, and efforts are still ongoing. Economic development is the reason and the result of the development of a society in harmony with all its aspects and actors. A development that leaves half of this society behind and ignores it is unacceptable for this understanding. However, it has taken ages to bring the concepts of development and women together. The relationship between economic development and gender was first established in Ester Boserup's book (1970) "Woman's Role in Economic Development". It is considered as a pioneering study, and more than fifty years later, its assumptions continue to shape the literature on the subject. This study, which has been cited thousands of times, examines the division of labor between men and women, points out that many economic burdens fall disproportionately on women, and underlines the important role women play in helping developing countries achieve economic development (Boserup 1970).

The connection between economic development and women has been evaluated with different basic arguments in the relevant literature. While economic development serves as a driving force for reducing gender inequalities (Weiss et al. 1976; Clark 1991), the elimination of social, political, economic, and cultural barriers for women will accelerate economic development and make it more effective and sustainable (Klasen 1999; Blackden et al. 2007). Another key assessment in the literature is that economic development has not contributed to improving women's lives because it widens the gap between women's and men's incomes (Prügl and True 2014; Cuberes and Teignier 2016). According to these perspectives, development policies and economic growth processes have negative impacts on women's socioeconomic status and deepen gender inequality (Truong 1999; Mains and Mulat 2021). One of the main arguments is that male-dominated economic structures and forms of employment limit women's economic independence and increase income inequalities. Hence, women tend to be concentrated in sectors with lower wages with unequal access to resources (Prügl and True 2014).

The relationship between economic growth and gender disparities has been extensively discussed in policy-making and social sciences. Non-governmental organizations (NGOs) worldwide are actively and critically evaluating the influence of economic policies on women, the involvement of women in economies, and the significant contribution of women's labor as a crucial part of human capital. In response to these concerns, international organizations like the World Bank and the United Nations have intensified their endeavors to gain a deeper understanding of the gender-specific consequences of different development strategies. At the same time, national governments have become more proactive in supporting policies aimed at diminishing inequalities between men and women.

The World Conference on Women, organized for the first time by the UN in 1975; has set a social and economic development goal “as would secure the participation of women as equal partners with men in all fields of work, equal access to all working posts, equal pay for work of equal value and equal possibilities for education” (UNDP 1995,96). The Fourth World Conference on Women (1995) in Beijing was a turning point as it was a global commitment to the goals of achieving gender equality in all areas. It was defined as the official goal for UN member states to promote women's economic rights and independence; to ensure their access to employment and appropriate working conditions; to strengthen women's economic capacity; and to facilitate women's equal access to resources, markets, and trade (UN 1995,17). Member States have emphasized and set targets to increase the number of women at all levels of government. After Beijing, many countries introduced quota systems. Following this decision, there have been significant increases in women's political representation (Kalaycı 2019). The Millennium Development Goals explicitly identifies the promotion of gender equality and “women's empowerment as effective means of promoting sustainable development” (UN 2000, 5).

Studies that have provided important analyses of women's role in economic development have frequently included assessments of women's labor force participation, barriers to this participation and working conditions (Baughn et al 2006; Klasen and Lamanna 2009; Kim et al. 2016). Women's economic participation and empowerment has positive effects in many ways. Firstly, women's active participation in the economic activities provides

a potentially large resource to the labor force. The increase in women's education, skills acquisition and employment opportunities enables a larger pool of talent to be utilized in the labor force. This in turn supports economic growth (Dollar and Gatti 1999; Çetindamar 2012). Women's economic empowerment helps to reduce poverty and eliminate inequalities. As women's opportunities to earn income and access resources improve, their welfare levels rise and overall poverty rates in society fall (Bieri 2009; Wei et al. 2021).

Technological innovations create new opportunities in the labor market, while economic growth and industrialization process expands women's employment opportunities. With the adoption of new technologies, women have the opportunity to work in more sectors and can also take part in traditionally male-dominated sectors (Jayachandran 2015). The increased participation of women in the labor force, so-called feminization of the labor force (ILO 1989), could mean that not only has a beneficial impact on women's well-being and economic independence (Anderson and Eswaran 2009) and on effective demand and growth (Berik et al. 2009), but also has an impact on business cycles through its influence on gender relations (Rodriguez et al. 2017).

The phenomenon of globalization has led to an increase in the need for female labor in world economies. In parallel, the importance of women's labor and thus women's employment has increased worldwide (Aksakal 2022). Countries seeking to increase their global competitiveness have modernized their labor markets. The new international division of labor has taken place in developing countries (especially in the industrialized countries of East Asia) that specialize in the export of low-tech traditional consumer goods. These countries have been at the forefront of exporting these goods and advancing in production by using cheap female labor (see chapter 1, 38). There are two main reasons for the under-valuation of women and women's labour: One is the gender-based division of labor (Bosherup 1970; Kim 2009) and the other is the existing patriarchal structure of society (Delphy 1999; Dildar 2015). As Blue (2017, 66) states: “gender analysis of women's labor market positions examines how changing, transforming, and differentiated expectations affect women's labor market experiences....how women's roles as wives and mothers are defined by development has been treated as an economic issue based on production and accumulation”. Women's work is often precarious, temporary, or part-time, with little protection and few benefits. Women's employment has long been

concentrated in the informal sector and the sexual divide has separated the formal and informal sectors (Scott 1995). Some scholars argue that the devaluation of women's labor has deepened in the wake of globalization (Beneria et al. 2015; Peterson 2008). This devaluation affects their exploitation at work and increases their responsibilities at home. Globalization is becoming more severe for women, which means additional obligations and costs for women (Robinson 2006; Aksakal 2022).

Empirical studies suggesting that women's participation in entrepreneurial activities acts as a driving force in economic development, is another frequently emphasized issue in the literature (Brush 1992; Terjesen and Amoros 2010; De Vita et al. 2014). It is observed that, in general, in countries with higher levels of entrepreneurial activity, women's participation in entrepreneurial activities is also relatively higher (Baughn et al. 2006). Women's entrepreneurship has a pivotal role in creating productive jobs, achieving gender equality and reducing poverty. Empirical studies demonstrate that women entrepreneurs adopt inclusive strategies that enhance socio-economic development, particularly through motivation such as organizing education and training camps, creating employment opportunities and building a local ecosystem (Rosca et al. 2020). Especially in developing countries, women are engaged in entrepreneurial activities and play an important role in the economic and development process of these countries. De Vita, Mari and Poggesi (2014; 457) state that this picture emerges because women in these economies often face various barriers in accessing the formal labor market, and “entrepreneurship is their only way to avoid unemployment”.

Education is seen as essential for removing barriers and improving conditions for women to participate in the labor force and entrepreneurial activities (Hill and King 1995; Klasen 2002; Esen and Seren 2022). Receiving a good education enables women to improve their knowledge and skills, increase their self-confidence and express themselves more strongly in the business world or in entrepreneurships. A good education increases women's employability and enables them to have better opportunities in various professions (İnce 2010). Education gives women more options and makes them better equipped to compete in the business world. At the same time, education provides women with skills that support them to be more informed in their search and application processes for better job positions (McKinsey 2022). Education is also important for participation in entrepreneurial activities. Education increases women's awareness of entrepreneurship

and improves their skills in starting and managing businesses (Portar and Nagarajan 2005). A good education enables women entrepreneurs to gain knowledge in areas such as creating a business plan, developing marketing strategies and financial management. Moreover, education and related training helps women entrepreneurs build a strong network and benefit from mentoring programs (Raghuvanshi et al. 2017), which makes them more successful in growing and sustaining their businesses. However, accessibility and quality are critical for education to generate productive outputs for women (Herath 2022). Providing women with an equal and fair education enables them to realize their full potential. It is also necessary to promote gender equality in education systems and support women's access to leadership roles.

Academic studies indicate that policies that promote gender equality support economic development (Klasen 2002; Çetindamar et al. 2012; Parejo and Radulovic 2023). Therefore, it is crucial that the public and private sectors work together to support policies that promote women's economic empowerment. Policies such as preventing gender-based discrimination, increasing training and skills development programs for women, and facilitating access to childcare services serve sustainable economic development goals (Cohen and Samzelius 2020). In addition, policies that support women in entrepreneurship and innovation also have a positive impact on economic development. At this point, providing women entrepreneurs with resources such as financial support, business training and mentoring is highly beneficial. It is also important for the public sector to encourage women to participate more effectively in economic activities by facilitating access to infrastructure, services and resources (Parejo and Radulovic 2023). Public-private cooperation is a critical element for the effective implementation of policies that promote women's economic empowerment (Agarwal 2003; Bonny et al. 2014; Shepherd 2016). Government policies and regulations, as well as the private sector's support for practices that promote women's employment, can ensure that women are more involved in the business world and are more represented in decision-making positions.

#### **4.1.1. Women and development studies in Turkey**

The literature on the role of women in the economy and development processes in Turkey is also focused on women's labor force and their working conditions. Many empirical studies make valuable contributions to the literature on economic parameters, development and gender, taking into account a broad and diverse scope (Cindođlu and Toktař 2002; Tansel 2002; Buđra and akar 2010; Ecevit 2010; Gökulu and Furat 2013; Dildar 2015; Aytekin 2018). The factors determining women's labor force participation in Turkey are examined under the headings of social and cultural factors (Alkan 1995; O'Neil and Bilgin 2013), education (Dayıođlu and Kırdar 2009), urbanization (Erman 1998) and marital status (etindamar et al. 2012).

The main reasons for the low level of women's labor force participation are education and education-related inequalities (Günsoy and Özsoy 2012) and the lack of harmonizing factors in family and work life (Serel and Özdemir 2017). Labor force participation is strongly associated with years of education, and in Turkey, as women become more educated and skilled, the gap between male and female labor force participation rates decreases (Dayıođlu and Kırdar 2009; etindamar et al. 2012). The lack of adequate support and resources for women to improve their professional skills limits their labor force participation. The lack of equal and fair representation of women in the labor market in Turkey is also explained by cultural and social reasons. Some studies suggest that women's traditional role as nurturers is the main reason behind low participation (O'Neil and Bilgin 2013), while others argue that patriarchal norms, family conservatism and Islam have a negative impact on women's labor force participation in Turkey (Dildar 2015). According to Gedikli (2014), the labor market outcomes of women in Turkey are heavily influenced by traditional values, irrespective of their education level and living conditions. However, the size and shape of this influence differ based on various factors.

There is relatively limited research on women's entrepreneurship in developing countries (Hisrick and Öztürk 1999; Jamali 2009; Vossenberđ 2013). The number of studies on the Turkish case in this perspective is even more limited (Ufuk and Özgen 2001; etindamar 2005; etindamar et al. 2011; Gupta et al. 2014; Maden 2015). In Turkey, ongoing patriarchal social values (Hisrick and Öztürk 1999; Maden 2015) and related traditional

gender roles (Özar 2007) lead society to undervalue women's employment and entrepreneurship (Karataş et al. 2010). Related studies explain the strong impact of education on women's entrepreneurship through the “glass ceiling effect” (Wirth 2001; Masser and Abrams 2005) and argue that women with “higher human capital (i.e., education) are more likely to engage in entrepreneurial activities in developing countries like Turkey due to the limited opportunities (i.e. the glass ceiling)” available to them in the traditional workplace (Maden 2015, 315).

Studies do not find it satisfactory to consider women only as a productive actor in the economy (Gökulu and Fırat 2013; Atakan 2016) and emphasize that the issue requires multidimensional policies and regulations. As can be seen in the literature outlined above, the role of women in economic development has been analyzed in detail around their participation in labor force, entrepreneurial activities and their working conditions. The issues under analysis are extremely important. However, it is also important to analyze women's contribution to economic development through their roles in policy-making and decision-making processes.

In the theory chapter of the thesis (see chapter 2, 25), it was noted that in the developmental state literature, women's role in the development is evaluated through their participation in the labor force. Similarly, in Turkey, the role of women in the economy is analyzed in detail through labor force participation and related parameters. The developmental state debate has been carried out in various contexts in the case of Turkey, but state-led developmentalism in Turkey has not been analyzed through the positioning of women in national and domestic initiatives and their role in policy-making and decision-making processes. For this respect, in the remainder of this chapter, the role of women in the National Technology Initiative will be analyzed.

#### **4.2. National Technology Initiative and Women: Women in the Public-NGO-Private Triangle**

In order to analyze the role of women in the National Technology Initiative, it is important to examine the reports and plans of the public institutions that are driving the development strategy. In these documents, it is expected that the objectives and policies regarding the

role and participation of women in technology-driven development are clearly set out. As a matter of fact, these objectives are included in the five-year development plans. In the Eleventh Development Plan (2019-2023), there are numerous articles on women's participation in the labor force (e.g., 48, 90, 133, 210, 213). However, in addition to this, the need for women to take part in development processes in a broader sense is also emphasized and this point is set forth as an objective. As the Plan clearly states: “Building a strong society will be possible through the empowerment of women. In this context, efforts will be made to increase girls' and women's access to education and training and their participation in social and economic life, facilitate access to resources, and raise awareness to improve the status of women in society” (Eleventh Development Plan 2019-2023, Article 542).

**Table 7.** Population and Labor Force by Sex, 2019-2022\*

<b>Year</b>	<b>Population</b> <i>(Million)</i>	<b>Labor force</b> <i>(Thousand)</i>	<b>Labour force participation rate</b> <i>(%)</i>
<b>Total</b>			
2019	83 154 997	32 549	53,0
2020	83 614 362	30 873	49,3
2021	84 680 273	32 716	51,4
2022	85 279 553	34 334	53,1
<b>Male</b>			
2019	41721 136	21 863	72,0
2020	41915 985	21 105	68,2
2021	42428 101	22 156	70,3
2022	42704 112	22 862	71,4
<b>Female</b>			
2019	41433 861	10 686	34,4
2020	41698 377	9 768	30,9
2021	42252 172	10 560	32,8
2022	42575 441	11 473	35,1

\*The table is created with the data obtained from TurkStat

Table 7 presents the population and labor force distribution by sex for the period between 2019 and 2022. As the table clearly shows, the equivalence of the male and female population is unfortunately not reflected in their labor force participation rates. Moreover, the rate of increase in the labor force participation of women does not seem to be

sufficient, given the targets set for the development of human capital and the promotion of the women's labor force. In order to overcome this inadequacy, the state should set targets to improve incentive and sanction mechanisms. Setting targets for increasing women's roles in five-year development plans is an important step in terms of ensuring gender equality, human capital and economic growth, social justice and development, democratic governance and fulfilling international commitments. In this regard, the assessment of women within Turkey's economic development perspective was first evaluated in the Sixth Five-Year Development Plan (1990-1994), which aimed to benefit women from development and to increase their role in society in this direction. In the Seventh Five-Year Development Plan (1996-2000), women's contribution to development is mentioned and it is stated that “the importance of women's rights and women's education are increasingly recognized as an essential driver of development” (Seventh Development Plan 1996-2000, 4). However, the first assessment of women's roles at the level of decision-making mechanisms is made in the Tenth Development Plan (2014-2018, Article 246), which explicitly stated that the objective is to increase their representation and roles in decision-making and policy-making mechanisms.

**Table 8.** Turkey Gender Inequality Index\*, 1990-2020\*\*

<i>Year</i>	1990			2000			2010			2020		
	<i>Female</i>	<i>Male</i>	<i>Gender Gap</i>	<i>Female</i>	<i>Male</i>	<i>Gender Gap</i>	<i>Female</i>	<i>Male</i>	<i>Gender Gap</i>	<i>Female</i>	<i>Male</i>	<i>Gender Gap</i>
Share of seats in parliament	2,40%	97,60%	-95,30%	4,20%	95,80%	-91,60%	9,10%	90,90%	-81,80%	16,50%	83,50%	-67%
Population with at least some secondary education (age 25 and older)	11,50%	25%	-13,40%	16,90%	33,90%	-17%	35,80%	57,60%	-21,80%	100%	99,80%	0,20%
Labour force participation rate	34,30%	80,10%	-45,80%	26,80%	74,40%	-47,60%	27,30%	70,30%	-43%	41,60%	71%	-29,50%

\* The Gender Inequality Index (GII) is a measure published by the United Nations Development Program (UNDP). The GII is an index used to assess and compare gender inequality across countries.

\*\* The table is created with the data obtained from UNDP

As can be seen in Table 8, Turkey has shown improvement in gender inequality indicators over the years with the policies it has put forward in line with its development goals. However, UNDP data clearly shows that Turkey's situation on GII generally indicates a higher level of inequality compared to OECD countries (UNDP 2023). The Sustainable

Development Goals, led by the Presidency of the Republic of Turkey, draw attention to this comparison and aim to “ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and social life” (Sustainable Development Goals, Goal 5.5).

The importance of women's role in Turkey's technology-driven development goals is frequently emphasized by President Erdoğan. In his speech at the “On the Road to Great Turkey with Women” program in 2021, Erdoğan described the important role of women in development as follows (Presidential Speech, 23.10.2021):

We need the contribution of every citizen; men and women, to Turkey's development and growth. When we exclude our women from our development cause, we would be removing and throwing away half of our potential. However, every labor, every idea, every human being is of great value to us, and with this understanding, we have given and continue to give the greatest support to our women entrepreneurs in our history...The term in which women in Turkey have made the most progress in education, production, employment, politics and social life is our term...We have always supported the struggle of our women to take their rightful place in the bureaucracy and business world as well as in politics. I supported every step that transformed women from being just an element of the family business into an independent entrepreneur, an independent producer, an independent businessperson.

These references by Erdoğan, as the central driving force in the new model of developmentalism (Öniş 2019, 6), to increasing the role of women are extremely important as they have the potential to pave the way for and shape relevant policies and programs. As a matter of fact, he stated that the path to sustainable development passes through the empowerment of women, “otherwise, like every work that is not touched by women's hands, this effort will be incomplete, falter, and will not reach its goal” (Presidential Speech, 08.03.2020). Indeed, policies developed by public institutions and organizations in this direction have adopted the goals of encouraging women's participation in employment and entrepreneurship activities and removing barriers to their participation. In the Industry and Technology Strategy (2019 – 2023, 71), it is stated that “in order to increase the participation of women in business life in the capacity of talent, entrepreneurship trainings will be provided, kindergartens will be built in industrial and technology zones, and flexible working conditions will be prioritized in the investments and policies to be developed in software and IT fields that stand out with digitalization.”

It is also important to analyze the relevant reports and strategies of two important business organizations operating in the Turkish business sphere, namely TUSIAD (Turkish Industry and Business Association) and MUSIAD (Independent Industrialists' and Businessmen's Association). Understanding how these organizations refer to the role of women is important for assessing their approaches to women in leadership roles in the business world, supporting women's entrepreneurship and gender equality. As a result of the analysis of related reports and conducted interviews, it is evident that these organizations have adopted objectives, developed policies and support mechanisms for women's role in the field of technology. These organizations repeatedly underline the importance of increasing women's employment, facilitating their participation in entrepreneurial activities and enabling them to take on more leadership positions. In almost all of their reports, these organizations state that the strengthening of the public, private and NGO triangle is important for these goals, and that the only way to remove the obstacles on the road to sustainable development goals is through this cooperation.

MUSIAD states that it aims to support the development and commercialization of the projects of women who have ideas, and to contribute to Turkey's exports and employment as well as the government's mission for women entrepreneurs. MUSIAD sees its responsibility in establishing collaborations in this direction and has signed a protocol with the Turkish Exporters Assembly (TIM) to increase women's participation and contribution to economic development. The protocol, signed in 2021 with the aim of supporting women entrepreneurs and exporters and enabling them to play a more active role in the business community, is based on the belief that “women's solidarity on a civil society overlap with [Turkey's] national spirit of solidarity and national goals” (MUSIAD News 2021). MUSIAD Former President Kaan stated that “any solution that excludes women at the idea and implementation stages will not achieve a result” and drew attention to the problems faced by women in the business sphere with the following words (MUSIAD News 2021):

We will make big words and promises on another March 8th Women's Day with our most enthusiastic and boldest expressions. Voices will be raised from every channel against the irreplaceable and undeniable reality of our women in our lives. We will run advertisements. We will hang posters and organize panels. On March 8, we will celebrate it as if it were an honor given to women, and we will wake up on the morning of March 9 with the so-called peace of mind that

we have fulfilled our duty. But will anything really change then? On the morning of March 9th, will our women receive the care, sincerity, respect, a decisive position in society, relationships free of danger and violence, positions equal to men in business life, jobs that are worthy of their talents and education?

MUSIAD, which expresses the necessity of supporting and contributing to the real solutions offered by the political will to the obstacles faced by women in business life, established MUSIAD Women in 2018 in order to develop and strengthen the potential of women entrepreneurs in terms of quality and quantity. At the International Awareness Summit held with the motto “transformation starts with us”, MUSIAD Women drew attention to the importance of women's participation in the labor force for the sustainability of economic development, as well as the necessity of women being in leading and managerial positions in the business world: “As a community of businesswomen ....., we believe that increasing the number of women employers in the business world, developing and empowering [women's] potential will undoubtedly contribute positively to both employment and the national economy” (ISA 22 Report, 6).

The dominant argument within both TUSIAD and MUSIAD is that the determinant of incentives and barriers to women's role in economic development is education and the elimination of education-related inequalities. The fields of labor and employment are constantly changing globally; and emerging and changing technologies, especially information technologies, have a profound impact on the future of these fields. Given existing inequalities, the impact of technological developments on women's role in the economy becomes an important issue. Several studies argue that the underrepresentation of women in technology-focused studies is due to technology and gender-based stereotypes; the lack of female experts in Science, Technology, Engineering and Mathematics is not due to a lack of women's cognitive abilities but to a male-dominated mentality that leads to the exclusion of women in these fields (McKinsey 2019; Taş and Bozkurt 2019; Alp and Aksoy 2021). This inequality needs to be eliminated, women's skills and competencies need to be developed and relevant opportunities need to be provided equally. In this regard, MUSIAD Women highlights the need to prioritize policies and programs that support women's education and skills development in order for digital transformation to support and sustain economic development, underlining that “women's development equals shifts in development” (ISA 22 Report, 18). In its “Call to

Action for High Technology in Turkey's 2nd Century Report” (2023), TUSIAD also emphasizes the need for collaborative management of the mechanisms developed in this regard, and for “girls and young women in particular to be trained from an early age to develop their skills and competencies in this field and to be directed to professions in this field in order to turn digital transformation into an opportunity to reduce existing inequalities” (TUSIAD 2023, 89).

In its “Building the Future Report” (2021), TUSIAD refers to the vision of the Eleventh Development Plan (2019-2023, Article 6) of “a stronger and more prosperous Turkey that produces more value and shares it more fairly” and states that this understanding of development should adopt the goal of “a fair Turkey that ensures gender equality.... and a fair Turkey that does not leave any segment of society behind in the development process” (TUSIAD 2021,117). The report states that strengthening women's roles will not only make development more equitable but also accelerate the process of economic growth. A study conducted by the International Labour Organization (ILO) found that closing the gender gap in economic participation by 25% by 2025 has the potential to increase global GDP by \$5.8 trillion (ILO 2017, 1). In one of the author interviews conducted with TUSIAD, the interviewee noted that this positive impact applies not only to governments but also to firms:

A research study, conducted with 1700 companies in more than eight countries, found that companies with above-average gender diversity among their senior executives generate 19% more revenue.... Achieving this diversity in management mechanisms is beneficial for companies' performance, human resources management, employee engagement and productivity. This is actually a very valid situation for the companies we represent. Especially companies that include women in their boards of directors and executive positions achieve better outputs.<sup>2</sup>

TUSIAD states that Turkey's new understanding of development will be sustainable if it is based on a model of society in which women have equal opportunities in all areas and stages of life and participate in business life in every profession, at every level and status. This model of society will be achieved “through the empowerment of women as individuals and the emergence of institutions that will effectively equalize women's position in society with men” (TUSIAD 2021, 165). In this regard, collaborations with

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<sup>2</sup> All interviews were translated into English by the author.

the public institutions are critical in creating the necessary policy sets for multidimensional consideration of the development approach, such as expanding relevant institutions and ensuring that more women are involved in decision-making mechanisms. The importance and necessity of this cooperation is also underlined in another interview with TUSIAD:

It would be pointless to address some issues and develop a project without collaborating with the government...or you cannot address them without seeing the way the public institutions collect data and whether there is a return to that data or not.... The business world needs data [on increasing women's roles] to take action. There needs to be data that [women's presence in decision-making mechanisms] leads to better governance performance, better access to financial resources from the public and international arena... Only the public institutions can provide that.

NGOs that put women at the center are extremely important in terms of undertaking efforts to increase women's roles and empowerment; supporting women in areas such as education, employment, entrepreneurship and leadership; and enabling them to be more economically active and productive. In addition to promoting women's entrepreneurship and innovation with the aim of increasing economic growth and development, NGOs also provide platforms for women to make their voices heard and enable women to take an active role in policy-making and decision-making processes. There are many NGOs in Turkey that are active in this sense, but this study will analyze the Women's Entrepreneurs Association of Turkey (KAGIDER), which has a relatively high number of stakeholders at the national and international level and therefore can be considered more inclusive; and the The Women and Democracy Association (KADEM), which stands out with its public cooperation.

KAGIDER aims to empower women through entrepreneurship with the vision of "creating a world where women take an active role in all decision-making processes by producing and freely asserting their existence" and the mission of "developing women's entrepreneurship and strengthening the position of women in economic and social life". "Women's Labor Force Participation in Turkey: General Trends, Regional and Demographic Differences, Attitudes" (2023) report states that the discrimination faced by women in business not only creates obstacles to the actual achievement of gender equality in line with fundamental human rights norms, but also has negative effects on economic development. Women's participation in the labor force and representation in decision-

making mechanisms will directly contribute to production and economic prosperity. Increasing and empowering women's roles “will lead to increased competition in the labor market, which in turn will pave the way for the development of different and new skills that will increase the productivity of all segments, especially those who are currently employed,....will also contribute to the creation of a working environment that includes different perspectives by increasing diversity in workplaces. This will increase the competitiveness of firms by encouraging innovation and creativity”(KAGIDER 2023, 3).

It is one of KAGIDER's strategic priorities for women to play equal roles and access equal opportunities in digital transformation. In the “Women in Technology Research” (2018) conducted in collaboration with KAGIDER, Deloitte and the Turkish Informatics Industry Association (TUBISAD); the underrepresentation of women in senior positions in the technology sector was explained as being due to “the sector's bias towards men for leadership positions, the male-dominated culture in the sector, the lack of sufficient support from executives and the general perception of the sector” (Women in Technology 2018, 24). The findings of the interview that conducted with KAGIDER support the conclusions of the published reports: “The perception of the sector as man-dominated and its evolution in this sense is the root cause of women's under-representation in the sector”. The same research also emphasizes the importance of establishing management teams with a balance of men and women and the importance of cooperation with the public in this regard by emphasizing "the added value of women leaders' emotional intelligence, their ability to demonstrate a tolerant and inclusive leadership, their careful and detailed planning and management skills, their creativity and the alternative ideas they offer” (Women in Technology 2018, 24).

KADEM, which was established with the principle of "equality in existence, justice in responsibility", frequently expresses that women should not be the objects of political, economic and social policies, but should be the subjects that produce and shape these policies. In the interview with KADEM, it was stated that women's active participation in social, economic and political life is a requirement of democratic rights and social justice:

As a reflection of [this] requirement, women's access to educational facilities based on equal opportunities, their economic empowerment, and their participation in government mechanisms contribute both to the increase of their social status and to the development of the family and

society in every sense. Women's balanced participation in socio-economic and political spheres is also important for the establishment of social balance and harmony, cooperation and prosperity.

KADEM was granted "Public Benefit Associations" status and underlines that they aim to strengthen the representation of women in all areas of social life in every project they develop by strengthening their cooperation with universities, public and private initiatives. At the 1st International Women and Justice Summit organized by KADEM with President Erdoğan's attendance, it was concluded that it is necessary to change the whole paradigm and support gender justice with laws in order for women to become a subject in all areas of life. Similar discourses were reinforced and expressed in the "Women and Politics Symposium" held within the scope of the "EU-TR Women in Politics Civil Network Project" financed by the European Union and the Republic of Turkey and organized by KADEM. The symposium emphasized the necessity of removing the obstacles placed in front of women and paving the way for women to take an active role in decision-making positions, and for this purpose, the importance of the efforts and sensitivity to be shown by elected and appointed officials, parliament, bureaucracy and political parties in this direction was discussed. With the statement that "The way to build a sustainable, developed society in which fundamental rights and freedoms are protected and gender discrimination is eliminated is through granting democratic rights to women, including political participation", KADEM has repeated its objective once again on the international platform (Women and Politics Symposium 2015).

The conducted interview with KADEM and the analysis of its published reports reveal that one of its most important objectives is to ensure women's active participation in socio-cultural, economic and political life and to carry out projects and activities for their professional development. In this context, practice-based projects such as "Women in Innovation" provide women with entrepreneurship training in different fields and aim to promote women's entrepreneurship. "[Women in Innovation] project aims to increase women's entrepreneurial skills and contribute to the creation of new employment opportunities" was frequently stated in the interview. The importance of cooperation with the public sector for achieving the targets and overcoming the obstacles encountered is an element frequently underlined by KADEM. In the interview, KADEM draws attention

to the fact that dialogue with public institutions is essential in the processes of developing, supporting and implementing projects with the following words:

The recognition and support of women's role in economic development is of great importance for sustainable development and the formation of a well-fair society. The empowerment of women entrepreneurs, their active participation in innovation processes and their economic success have a positive impact on the overall well-being of society. Therefore, we consider our dialogue with public institutions as an important step in our efforts to consider and contribute to the role of women in economic development. Through cooperation and support, we aim to increase women entrepreneurs' access to opportunities and increase their chances of success and economic contribution.

KADEM's branded project Women in Innovation, which has been subject to significant support and incentives by public and private initiatives and developed with the belief that “innovations are born from women”, was launched for the first time in 2015 in cooperation with TUBITAK MARTEK. In 2020, the project, in which Informatics Valley and TOBB ETÜ were also included, also attracts the attention of the Ministry of Industry and Technology. Mehmet Fatih Kacır, Deputy Minister of Defence and Technology (currently minister), underlined the importance of the National Technology Initiative once again at the event organized within the scope of the 7th Women in Innovation project. In his speech, Deputy Minister Kacır drew attention to the necessity of actors who can create high added value within the framework of the National Technology Initiative and emphasized the importance of the Women in Innovation project in ensuring equal opportunities. KADEM referred to the role of women in the National Technology Initiative for the first time at “the Women in Innovation 6th Entrepreneurship Camp” in 2021. It is emphasized that women are at the very center in the transformation where intellectual power gains importance instead of physical power. Sümeyye Erdoğan Bayraktar, Vice President of KADEM, underlined this emphasis again in her closing speech with the following words (DHA 2021):

We are now a country that produces its own technology in many fields. There is still a foreign-dependent, complex mentality that says, ‘we cannot make these things, we can only buy them from abroad’. But now, like a blooming sprout in the face of that mentality, there is a National Technology Initiative that gives hope and courage to this people again. As women, we are also here to strengthen domestic and national technology at every stage, from idea to design, from project to commercialization.

#### **4.2.1. Women in decision-making and policy-making process: opportunities and challenges**

Women's active participation in decision-making and policy-making mechanisms in economic development policies and programs, as well as in strategic state-selected sectors, is crucial for societies to move towards sustainable and inclusive growth. However, there is still a significant imbalance between opportunities and barriers to women's increased role in this regard. It is observed that projects and policies developed through public-NGO-private cooperation create opportunities for women to participate in employment and entrepreneurship activities in line with the targeted development plan and to take an active role in decision-making and policy-making processes. However, many obstacles remain due to gender stereotypes, social and cultural norms, and inequalities in education and access to technology. This is also visible in the sectors prioritized and strategically positioned by the government under the umbrella of the National Technology Initiative.

The strategic document of National Technology Initiative states that the targeted development can only be realized with the spirit of social ownership and mobilization, and with “the belief of all members of society to the power and future of this country with a common ideal and excitement that form the basis of the National Technology Initiative” (Industry and Technology Strategy 2019, 18). While the strategy states that one of its main objectives is to develop policies that prioritize the development of human capital with the argument that “the most important capital that will lead sustainable development and progress is human” (2019, 24). It is possible to argue that the strategy characterizes society as a homogeneous structure and does not assign different roles to different genders. However, the existence of gender-specific barriers within the same society shows that such an approach may not be rational and sustainable.

As can be seen in the previous part of this chapter, it is possible to observe positive steps taken in this direction in Turkey in line with public-NGO cooperation. Women's participation in decision-making mechanisms is supported by many practices such as positive discrimination, women's quota, grants, and maternity leave. In the interview conducted with KADEM, it was noted that women's search for a balance between family

life and work life constitutes an important obstacle for women. Indeed, in the Industry and Technology Strategy (2019, 71), it is stated that “in order to increase the participation of women in business life in terms of talent capacity, priority will be given to investments and policies that will improve the provision of entrepreneurship trainings, the construction of kindergartens in industrial and technology zones, as well as the dissemination of flexible working conditions in software and informatics fields that stand out with digitalization”, thus demonstrating that the public authorities show a will to overcome this obstacle.

There are public incentives and sanctioning mechanisms to ensure that these objectives permeate the private sector. Relevant empirical studies demonstrate that increasing the role of women in the development process and removing the barriers to their effective participation is only possible by including them in decision-making processes (Burke and McKeen 1994; Aycan 2004; Kızıldağ 2018). The results obtained from the interviews conducted are in line with this argument. People who have been familiar with the relevant sector and its functioning for many years emphasize that as the number of female managers in the sector and companies increase, initiatives to address the obstacles women face increase. A senior male executive in the defense industry sector expressed this situation in the following words:

Awareness was created within the company with a few of our female managers being in the area of responsibility.... equipment related to meeting the special needs of women was brought to the factory, areas such as breastfeeding rooms were created...we were consciously enlightened for all the conditions in which they are differentiated due to their physical needs.

Organizations such as KAGIDER, TUSIAD and MUSIAD, which include many companies and initiatives, confirm that this is a valid phenomenon in many companies operating in many sectors. In the research conducted by KAGIDER in cooperation with TUBISAD, it was concluded that increasing the number of women leaders not only contributes to women's employment but also enables the development of a more effective corporate governance approach (Women in Technology 2018, 40). Likewise, the interview with TUSIAD supports this argument:

After all, there are many women employees in a company, but if there are no women in management, it may be difficult to keep those women employees in the company. But when there is a woman in the board of directors, she can understand the need there differently. For example,

especially during the transition to remote working in the pandemic period, women and men employees in companies stayed at home in the same way, but women stayed on the side that also took responsibility at home.... Therefore, having women in management and on the decision-making side points to certain issues and draws attention to deficiencies.

An analysis of the sectors - defense, automotive, space and energy - that are subject to significant subsidies by public institutions in order to create high-tech, high added value, domestic and national outputs that will support economic development under the National Technology Initiative strategy was conducted in this study (see chapter 3, 46). An analysis of the roles of women in private companies operating in these sectors reveals that these companies make various references to the presence, position and visibility of women in the sector and take specific initiatives to remove barriers. These initiatives are critical to promote gender equality, boost innovation, improve responsiveness to consumer demand, increase workforce diversity and support sustainable development.

Baykar Technology, which has come to the forefront at national and international level with its domestic and national outputs in the defence sector and produces high value-added products compatible with high technology, especially in the aviation sector, is a company that frequently states the necessity of the presence of women in the sector. Selçuk Bayraktar stated that 96% of the engineers within the company are women (Yeni Şafak 2020). In his speech at the panel titled “The Starting Point of the Future: Women Entrepreneurs in Turkey” organized by KADEM, Bayraktar said: “....During the period when we worked until the morning to prepare Akıncı for its first flight, I witnessed that our female engineers among us were more rigorous and devoted to their work. I observed that they behaved more perfectionist and more systematic” (AA News 2020). Findings that women's productivity in the sector increases with the competencies and skills they possess were also found in interviews that conducted with BMC and TAI, which are leading companies in the defense and aerospace sector. In an interview held with a senior executive, it was stated that women are actively involved in departments such as representation, R&D, design, business development and planning, and that they are “*especially preferred in decision-making stages*”.

It is possible to argue that a similar discourse has developed in the energy sector, based on interviews conducted with three different prominent companies in the sector. In one of

the interviews, it was stated that women have a more detailed, analytical and disciplinary approach.

Just like in the kitchen, women are a bit more dominant to lead, manage and plan things. It is similar in this sector. When a woman is involved, she performs better production and planning process, which can be considered as the kitchen of the sector. In most companies, women managers are in charge of production and planning.

However, according to reports and studies on the sector, improvements in the role of women in decision-making and leadership positions in energy sector are much less than in other sectors. The low representation of women in these positions is attributed to the male-dominated culture in the energy sector, the sector's bias towards men for leadership positions, and insufficient support from government (Deloitte 2018, 24). In an interview conducted with a senior executive in one of the companies operating in the renewable energy sector, it is concluded that the low number of women leaders in the sector - compared to other sectors - can be explained by the male dominance of the sector but is also linked to the level of institutionalization of companies:

There are not many corporate companies in the energy sector in Turkey. There are more patron companies in the sector and it is clear that in these companies, the shareholders are generally men. ...We see company cultures that give importance to more humanitarian and ethical values, generally if there is a high level of institutionalization.

In his speech at “the Ordinary General Assembly Meeting of Women's Branches”, President Erdoğan stated that “any work touched by women's hands, dedicated by women's hearts, and directed by women's determination has no chance of failure” (Presidential Speech: 19.02.2021). It is possible to see that this discourse was continued at every stage of the introduction of TOGG: “women's hand touched the national automobile” was a frequent headline in the press (Hürriyet 2019; Akşam 2021; DHA 2022; AA News 2023). In an interview that held with an executive at TOGG, it was stated that operational and organizational processes have become more efficient thanks to women's more multidimensional and detailed approach. In the interview, it was stated that being a woman in TOGG does not require facing any disadvantageous situation; there is complete equality in terms of position, working conditions and wages. The interview drew attention to the education factor, which is frequently mentioned in the relevant literature, and explained that the reason for the absence of gender-based discrimination

within TOGG is the presence of highly educated, professional and specialized people in the institution:

At TOGG, everyone is hired on the basis of merit, regardless of whether they are blue-collar, white-collar or managers....Especially in the operational and organizational bodies of the TOGG, there are people with high levels of education and significant experience in the sector. In a place where such people are there, it becomes difficult to encounter gender inequality.

In all interviews conducted with people working in different sectors, it was noted that gender-based differences are less likely to be observed in sectors and firms that are organized on the basis of education level, relevant skills and competencies, and that education is therefore of utmost importance in terms of both ensuring gender equality and making development sustainable. Interviews with companies operating in the technology and software sectors also provide data in this direction. The managers of the companies stated that women are frequently in senior positions and that “being competent and talented is the only factor that matters, not being a man or a woman”. At this point, the necessity of equal opportunity in the education required to achieve the necessary competence and skills should be underlined. Although significant and positive developments have been achieved in terms of women's employment or representation in decision-making positions in sectors that are expected to generate high added value in digital transformation, their rates still remain behind men. One of the main reasons for this is that they do not have equal access to the educational opportunities that will enable them to take part in operational and institutional processes in the relevant sectors and they are not guided in this regard. The relationship between sectors considered to be male-dominated and male-dominated classes was particularly emphasized in one of the interviews:

The huge gap between the number of men and women in university classes is also reflects to the sector.... Processes such as getting a job and working there are the final stages of the life; trying to involve women at this point does not make sense and does not produce productive results anyway. Why do women play a lesser role in the decisions taken for operational and institutional processes? The answer is in the classrooms of engineering faculties.

In Turkey, projects and policies implemented in cooperation between public and NGOs and private actors support women's participation in employment and entrepreneurship activities and encourage their active role in decision-making processes. However, some

challenges and barriers to women's presence in strategic sectors still exist. Factors such as gender stereotypes, social norms and the search for balance can limit women's roles and potential. While the presence of women is increasing in sectors such as defense, automotive and energy, the representation of women in decision-making positions is still insufficient. Therefore, greater participation of women in strategic sectors is an important step to promote inclusive and sustainable growth. Women's economic empowerment is part of efforts to achieve gender equality while promoting economic growth. Increased awareness among all segments of society and the implementation of supportive policies and programs will encourage women's active participation in strategic sectors.



## 5. CONCLUSION

Turkey's National Technology Initiative is an effort to strengthen the country's technological infrastructure, promote domestic production and support innovation. With this initiative, Turkish political elites aim to boost Turkey's economic growth in a sustainable and competitive manner. With substantial public incentives, it is expected that the sectors that are considered strategic will reach high-tech, high value-added, domestic and national production channels.

In this sense, there is a strong political will to improve education and research infrastructure in the fields of science and technology, support universities and research institutions, strengthen the innovation ecosystem and encourage entrepreneurial activities. The state is encouraging domestic and national technology production in strategically important areas such as the defense industry, artificial intelligence, cyber security, space technologies, biotechnology, renewable energy and automotive. Turkey's National Technology Initiative is an critical step as a strategy that aims to increase domestic production, reduce foreign dependency and improve technology exports.

Significant transformations have been achieved in strategic sectors in line with this strategy, which aims to support sustainable economic growth by increasing Turkey's technological competitiveness. However, financial, infrastructural and institutional deficiencies pose a major disadvantage in terms of the sustainability of this transformation and the fuel for economic development. Addressing these shortcomings will make the national development strategy targeted by the National Technology Initiative more sustainable and lead to significant improvements in economic indicators.

The main argument of this thesis is that the active participation of women in decision-making and policy-making processes in the National Technology Initiative is essential for achieving sustainable and inclusive economic development. The presence of women in these processes has been found to have direct positive impacts on corporate governance, innovation, labor diversity and overall company performance. A body of research suggests that women tend to be more detailed, analytical and disciplined in their leadership, management and decision-making roles. These characteristics are often attributed to women's abilities in areas such as organization, attention to detail and

multitasking. In this sense, firms can harness the full potential of their human capital by nurturing a talent pool that recognizes women's talents and an inclusive work environment, leading to greater innovation and long-term economic success. Based on the analysis of various reports, plans and through interviews, it appears that both public institutions and influential business organizations in Turkey are aware of the need to increase women's participation in this aspiration of technology-driven development.

Development plans, such as the Eleventh Development Plan (2019-2023), explicitly emphasize the objective of empowering women and increasing their participation in education, training and social and economic life. These plans set targets to increase women's role in decision-making and policy-making mechanisms, reflecting a commitment to gender equality and the fulfillment of international commitments.

Business organizations, including TUSIAD, MUSIAD and KAGIDER, have an important responsibility in advocating for women's participation in the technology and information industry. These NGOs emphasize the positive impact of gender diversity in senior management positions, noting that companies that include women in decision-making processes have improved performance, human resource management, employee engagement and productivity. Their findings suggest that the inclusion of women in decision-making processes brings different perspectives and experiences, leading to more innovative solutions and stronger overall company performance; and gender diversity also fosters a more inclusive work environment, attracting and retaining talented individuals from diverse backgrounds. Based on the analysis and conducted interviews, these institutions emphasize that collaboration with public institutions is critical to collect and use data to support women's empowerment and measure the benefits of their presence in leadership roles. Data-driven insights will lead to better management performance, greater access to financial resources and increased competitiveness for private sectors.

Companies in strategic sectors such as defense, automotive, space and energy are increasingly recognizing the importance of women's participation. However, challenges remain due to gender stereotypes, social and cultural norms, and inequalities in access to education and technology. The analysis reveals that efforts need to be undertaken to overcome the male-dominated culture and prejudices that hinder women's advancement.

Increasing the institutionalization of companies and promoting ethical values can help create a more inclusive and supportive environment for women.

The analysis indicates that such collaborations between public institutions, NGOs and the private sector has led to the implementation of policies and programs that promote women's participation in employment, entrepreneurship and leadership positions. Initiatives such as entrepreneurship trainings, flexible working conditions and the construction of kindergartens in industrial and technology zones are the products of a collective effort to overcome barriers and create equal opportunities for women. To achieve sustainable transformation, it is crucial to continue strengthening public-NGO-private sector partnerships, ensure women's representation in decision-making mechanisms, and promote a culture of inclusion and diversity across all sectors. Through collaborative efforts and a commitment to gender equality, Turkey can create a society that utilizes the full potential of women. By empowering women as individuals and promoting their equal participation in the economic, social and political spheres, Turkey can build greater economic prosperity, social justice and inclusive development where no segment of society is left behind.

At this point, it would be fair to argue that the state has the most significant responsibility. Because women can be included in the development, that is tried to be carried out by the state, in the strongest way through the state. The state, which develops policies and makes autonomous decisions on the path of national development, should ensure that this autonomy is embedded by responding to the needs of society. However, it is not rational to claim that all members of society are equally affected by development policies, results and processes. Therefore, the state should develop a gender-oriented embeddedness mechanism.

While the recorded progress made in Turkey in women's participation in the National Technology Initiative is encouraging, more efforts are needed to ensure equal opportunities and representation, especially for decision-making and policy-making processes. Recognizing the value of women's contributions, supporting women's education and skills advancement, and implementing inclusive policies are essential for sustainable economic growth, innovation and social development.

For sustainable and inclusive development, public institutions should invest in education programs that encourage women to pursue Science, Technology, Engineering and Mathematics, and provide scholarships and mentoring programs to support women to advance in their careers and acquire specialized skills in technology-related fields. In addition, government mechanisms should develop targeted programs and financing opportunities to support women entrepreneurs in the Technology sector; provide access to capital, business development resources and networks that can help women overcome barriers to starting and up-scaling their businesses.

Both public and private sector organizations should be encouraged to adopt gender diversity targets and quotas for leadership positions. Private sector organizations should also be encouraged to implement policies that support work-life balance, such as flexible working arrangements, parental leave policies and childcare facilities, and promote inclusive and diverse work environments that recognize and value gender equality. There should be policies that promote inclusive decision-making processes by ensuring that women have equal opportunities to participate in strategic planning, policy formulation and technology-driven innovation initiatives.

There is a need to regularly monitor and evaluate progress towards gender equality goals and improve data collection and analysis on women's participation in the technology sector, including employment rates, leadership positions and access to finance. Also, political will should encourage stronger collaborations between public institutions, NGOs and the private sector to develop and expand the role of women in the National Technology Initiative.

The National Technology Initiative's strategic focus on human capital development is worthy of consideration, however, this approach should be complemented by a gender-oriented approach that recognizes the different roles and contributions of women and men. The inclusion of women in decision-making and policy-making process in strategic sectors will improve the performance of firms and contribute to economic development. Studies and relevant data show that women in leadership roles can influence the success of firms. In order to sustain and encourage this, it would be essential Turkey to give women these roles in the policy-making and decision-making mechanisms of its own public institutions. This will enable women to fully realize their talents and potential,

supporting their increased representation in strategic sectors and their effective participation in decision-making processes.

The limitations of this study stem from the lack of interviews with state officials. This hinders the possibility of providing a more comprehensive perspective on women's decision-making and policy-making in the National Technology Initiative. However, in future research, conducting interviews with political elites could provide new insight in this regard and shed more light on the role of women in technology-driven development. Furthermore, understanding political elites' views on the challenges faced by women decision makers and policy makers and their strategies to overcome these challenges can be useful in developing effective policies and programs to promote the positioning of women in these roles.

Turkey can create an environment that supports and encourages women's active participation in the National Technology Initiative. The government should improve cooperation with the private sector and NGOs and sustain and expand its efforts to include women in policy-making and implementation processes in institutions and sectors that support economic development. These efforts will not only contribute to achieving gender equality but will also unlock women's untapped potential and support innovation, economic growth and sustainable development.

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## APPENDIX A

**Table 9.** Interview Method Table

Interviewee	Status	Source	Saturation	Format	Length	Recording	Transcript
<i>NGOs</i>			Partial				
TUSIAD Director	Conducted in online 21/06/2023	Purposive frame		Semi-Structured	35 mins	Video Recording	
TUSIAD Expert	Conducted in online 21/06/2023	Referred by TUSIAD Director		Semi-Structured	30 mins	Video Recording	
MUSIAD	No Response	Purposive frame					
KAGIDER Director	Conducted in online 05/07/2023	Purposive frame		Semi-Structured	27 mins	Video Recording	Confidentiality required
KADEM Director	Conducted via e-mail. 14/06/2023	Purposive frame		Structured	N / A	E-mail transcript	
<i>Information Sector</i>			No				
CEO	Conducted in online 13/06/2023	Referred by Winsolar Expert		Semi-Structured	44 mins	Video Recording	Confidentiality required
Expert	Conductive in person 22/06/2023	Purposive frame		Semi-Structured	37 mins	Concurrent notes	Confidentiality required
<i>Defence Sector</i>			Yes				
BMC Director	Conducted in online 08/06/2023	Purposive frame		Semi-Structured	38 mins	Video Recording	Confidentiality required
TAI Director	Conducted in online 03/07/2023	Purposive frame		Semi-Structured	28 mins	Audio Recording	Confidentiality required
<i>Energy Sector</i>			Yes				
CEO	Conducted in online 23/06/2023	Purposive frame		Semi-Structured	50 mins	Concurrent notes	Confidentiality required
CWEnergy Director	Conducted in person 27/06/2023	Purposive frame		Semi-Structured	13 mins	Audio Recording	Confidentiality required
Winsolar Expert	Conducted in person 23/06/2023	Purposive frame		Semi-Structured	26 mins	Audio Recording	Confidentiality required
<i>Automotive Sector</i>			Partial				
TOGG Director	Conducted in online 15/06/2023	Purposive frame		Semi-Structured	1 hour 4 mins	Concurrent notes	Confidentiality required
Expert	Declined	Purposive frame					
<i>Space Sector</i>			No				
TUA	No Response	Purposive frame					

## APPENDIX B

### The Open-Ended Questions

1) How do you evaluate the role of women in Turkey's initiatives related to the National Technology Initiative / Technology-oriented Development Strategy?

2) What would you say about increasing the role of women in economic development goals?

- What initiatives are there in this regard?
- What initiatives are planned in this regard?
- What are the challenges in this regard?
- What is planned to be done in the face of these challenges?
- What do you think should be done?

3) Do you collaborate with public, private and NGO projects? If yes, through which communication channel do you do so?

- Do you have a dialogue with public institutions in this regard?
- How do you assess the importance of the dialogue with public institutions in considering and contributing to the role of women in economic development?

# CURRICULUM VITAE

## **Personal Information**

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Bachelor's Degree Education: Kadir Has University (2015 - 2020)

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