THE POLITICAL ECONOMY OF INNOVATION: *TECHNOLOGICAL NATIONALISM, EXECUTIVE INTERFERENCE, AND NEO-POPULISM IN THE R&D SECTOR IN TURKEY*

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ABSTRACT

This thesis is about political economy factors that have influenced R&D policy-making processes in Turkey during the 2000s. The encompassing question is, how do political economy factors shape innovation policy? The central research question is, *why did Turkish R&D policy change in the 2000s, and what political economy factors did affect the process?*

After engaging in a dialogue with the political economy of innovation scholarship, the thesis kicks-off with the assertions that politics matter in the study of innovation, and innovation policy-making is a multi-faceted process. Then, by relying on the theoretical arguments and insights of scholarly works that specialize in *technological nationalism*, *developmental state*, and *clientelism*, the thesis adopts a comprehensive framework for the analysis of R&D policy-making processes in Turkey. Each of the three scholarships focuses on a different layer of policy-making. And then, each empirical chapter zooms into a different dimension of R&D policy in Turkey in the light of the analytical framework adopted.

The thesis relies on multiple sources and triangulation while making its core arguments. In specific, the thesis relies on 26 face-to-face semi-structured interviews (expect for the one which was conducted over the phone) with bureaucrats and relevant stakeholders in Turkey in different intervals between October 2014 and June 2016. In line with the thesis' primary motivations, interviewees are selected from leading innovation agencies in Turkey. Main governmental and organizational policy documents, laws and regulations, and parliamentary discussions on key R&D legislation, are other important sources of information.

The thesis supports a growing body of work on the politics of innovation policy by demonstrating the importance of the political realm in the study of innovation. The thesis also underlines the opposition parties' role in R&D policy-making –a rather overlooked channel of influence in the scholarship. In this regard, the thesis argues that technological nationalism, and the opposition's institutional weaknesses in policy-making, can potentially influence R&D

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policy by hindering the effective formulation and implementation of alternative policy options. This is found out to be crucial in the Turkish context.

The thesis also offers potential contributions to the Turkish political economy scholarship. Among the essential ones, and besides the argument on technological nationalism and the weak opposition, the dissertation claims that (i) the executive's continuous interferences with autonomous innovation agencies have influenced R&D policy in many ways in the 2000s in Turkey; (ii) rather than clientelistic relations (akin to the ones that are observed in the construction and the media sector in Turkey), a neo-populist approach has characterized the main rationale in R&D fund allocation to the private sector; and (iii) despite some positive steps undertaken, the Turkish state has yet to embody the essential traits of the 'developmental state' in the R&D sector. These findings speak to the broad scholarship on the Turkish political economy in important ways, and offer potential contributions via an in-depth elaboration of the R&D sector.

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LIST OF ABBREVIATIONS

AKP – Adalet ve Kalkınma Partisi – The Justice and Development Party

ANAP – Anavatan Partisi – The Motherland Party

BDP – Barış ve Demokrasi Partisi – The Peace and Democracy Party (BDP)

CHP – Cumhuriyet ve Halk Partisi – The Republican People's Party

DP – Demokrat Parti – Democratic Party

DSP – Demokratik Sol Parti – Democratic Left Party

DYP – Doğru Yol Partisi – The True Path Party

EOI – Export Oriented Industrialization

FP – Fazilet Partisi – The Virtue Party

GDP – Gross Domestic Expenditure

GERD – Gross Domestic Expenditure on Research and Development

HDP – Halkların Demokratik Partisi – The Peoples' Democratic Party

IASP – International Association of Science Parks and Areas of Innovation

IMF – International Monetary Fund

IRAs – Independent Regulatory Agencies

ISI – Import Substitution Industrialization

ITU – İstanbul Teknik Üniversitesi – Istanbul Technical University

KOSGEB – Küçük ve Orta Ölçekli İşletmeleri Geliştirme ve Destekleme İdaresi Başkanlığı – The Small and Medium Sized Enterprises Development Organization

METU – Orta Doğu Teknik Üniversitesi – Middle East Technical University

MHP – Milliyetçi Hareket Partisi – The Nationalist Movement Party

MNP – Milli Nizam Partisi – The National Order Party

MoD – Kalkınma Bakanlığı – The Ministry of Development

MoIT – Sanayi ve Ticaret Bakanlığı – The Ministry of Industry and Trade

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MoSIT – Bilim, Sanayi ve Teknoloji Bakanlığı – The Ministry of Science, Industry, and Technology

MÜSİAD – Müstakil Sanayici ve İşadamları Derneği – Independent Industrialists' and Businessmen's Association

NSI – National Systems of Innovation

NSF – National Science Foundation

NSP – Milli Selamet Partisi – The National Salvation Party

OIZs – Organized Industrial Zones

R&D – Research and Development

RP – Refah Partisi – The Welfare Party

SCST – Bilim ve Teknoloji Yüksek Kurulu – The Supreme Council for Science and Technology

SPO – Devlet Planlama Teşkilatı – The State Planning Organization

STI – Science, Technology, and Innovation

TEB – Türk Ekonomi Bankası – Turkish Economy Bank

TİM – Türkiye İhracatçılar Meclisi – The Turkish Exporters Assembly

TTGV – Türkiye Teknoloji Geliştirme Vakfı – The Technology Development Foundation of Turkey

TÜBA – Türkiye Bilimler Akademisi – The Turkish Academy of Sciences

TÜBİTAK – Türkiye Bilimsel ve Teknolojik Araştırma Kurumu – The Scientific and Technological Research Council of Turkey

TÜBİTAK-MAM – TÜBİTAK Marmara Research Center

TÜİK – Türkiye İstatistik Kurumu – Turkish Statistical Institute

TÜSİAD – Türk Sanayicileri ve İşadamları Derneği – The Turkish Industry and Business Association

UNFSTD – United Nations Fund for Science and Technology for Development

WTO – World Trade Organization

YÖK – Yüksek Öğretim Kurumu – The General Assembly of the Council of Higher Education

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CHAPTER 1: Introduction

What *political economy factors* affect *innovation policy-making processes*? To what extent, and how exactly, political factors influence the *formulation and implementation of innovation policy*? How can we account for, and address, innovation policy's *multi-dimensional character in theory*? This thesis speaks to the political economy scholarship by concentrating on these and alike questions.

On the theoretical front, the thesis engages in a dialogue with scholarly works that zoom into different aspects of innovation and industrial policy. It starts the analysis by highlighting one main assertion of the national-systems-of-innovation (NSI) approach: *politics matters and needs to be studied*. Then, it goes through the literature on the *politics of innovation policy* to elaborate how political scientists and political economists addressed the issue. And then, by focusing on R&D as a specific innovation policy domain, and noting that R&D policy-making is a *multi-layered process*, the thesis forms a holistic framework by relying on the main theoretical arguments of *technological nationalism*, *developmental state*, and *clientelism* scholarships. Each of these literatures capture an important dimension of R&D policy-making.

On the empirical front, the thesis takes *Turkey* as a *single-case study* and analyzes R&D policy-making within the Turkish context. The main emphasis is placed upon the *Justice and Development Party* (AKP) period. The AKP was established shortly before the 2002 general election, and the party won the election with a landslide electoral victory to end the coalition-government era of the 1990s. Later, the AKP achieved an unprecedented success in Turkish political history by winning three consecutive general elections in 2007, 2011, and 2015.[1] The

[1] The AKP failed to form a single-party government after the general election held in July 2015, but managed to accomplish that soon afterwards following the snap election held in November 2015. See Appendix 2 for the parties' vote shares and the distribution of seats in the parliament in Turkey during the 2000s. See Öniş (2016b) for an elaboration of the two general elections that were held in 2015.

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AKP has managed to form strong single-party governments since 2002. Thereby, this thesis primarily focuses on *the post-2002 period in Turkey*.

This introductory chapter provides the essential information regarding the building blocks of the dissertation. Section 1.1 and Section 1.2 contextualize the main concern of the thesis within the broad political economy literature. Section 1.1 briefly reviews the *NSI approach* to highlight *a certain gap* in NSI scholarship: *politics*. Section 1.2 investigates how a growing body of work on the *politics of innovation policy* has studied the *political dimension of innovation policy-making*. Then, Section 1.3 discusses the main agenda and scope conditions of the thesis within the context of NSI paradigm and the politics of innovation policy literature. Section 1.4 introduces the *holistic framework* by briefly going through the scholarships on *technological nationalism*, *developmental state*, and *clientelism*. Section 1.5 puts forward the central research question. Section 1.6 outlines the research design and methodology. Section 1.7 conveys the main contributions. Section 1.8 provides a short road map for the thesis.

1.1 The 'political economy' without the 'political': The 'political economy of innovation'

The term 'political economy' is a contested one and it is used in various ways in different contexts (Csaba 2007, 19–24). In broad terms, while some scholars focused on the 'economy' part of political economy to take a more economics-oriented stance, some others placed a special emphasis on the 'political' dimension to take a more politics-oriented perspective. The proper weight that needs to be placed on each dimension has generated lively debates in the literature (Acemoglu and Robinson 2013, 173–75). Depending on the inquiry at hand, 'political economy' is explicitly or implicitly defined in different ways.

In innovation studies, the term 'political economy of innovation' aimed to capture both the 'political' and the 'economy' aspects of innovation process. All factors that potentially influence innovation are taken into consideration and went into the definition of 'innovation

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system' (Edquist 1997a, 14; Edquist and Hommen 2008, 6). Nevertheless, significant elements of the political sphere are excluded from the agenda, as the boundaries of research have not encompassed the crucial factors that directly influence innovation policy-making. This argument is best illustrated with a brief re-visiting of the national-systems-of-innovation (NSI) approach.

Emerged in the late 1980s and the 1990s (Freeman 1987; Dosi et al. 1988; B.-A. Lundvall 1992; Nelson 1993; Edquist 1997b), NSI has become the *mainstream paradigm* in innovation studies. The approach argued against linear conceptualizations of innovation that equated R&D with innovation,[2] and also against neoclassical economics that struggled in conceptualizing the socially-embedded and structural traits of innovation processes (B.-A. Lundvall 1992, 8–14). The approach primarily took nation as the unit of analysis, since innovation is strongly effected by nation-specific institutions.[3] NSI also emphasized the systemic character of innovation, as organizations, institutions, and the linkages between them show systemic traits.

Many nuanced definitions are provided for 'national-system-of-innovation' (Niosi 2002, 292). The one that is put forward in the *Handbook of Innovation Systems and Developing Countries* (2009) captures the essence of those definitions. As put forward, "the national innovation system is an open, evolving and complex system that encompasses relationships within and between organizations, institutions, and socio-economic structures which determine the rate and direction of innovation and competence-building emanating from processes of science-based and experience-based learning" (B.-Å. Lundvall et al. 2009, 6). As this

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[2] For a review of linear conceptualizations of innovation see Godin (2006).
[3] While some scholars dropped the 'national' from the label in regards to the influence of globalization processes (Edquist 1997), some others preferred to take regions and sectors as unit of analysis. These perspectives are complementary, as they share the same building blocks, thus they are labelled as national-systems-of-innovation in this analysis.

comprehensive definition suggests, NSI adopts a broad perspective to the study of innovation by considering the myriad factors that potentially influence the process.

Despite the broad perspective adopted, practitioners of NSI have not yet turned a keen eye on the political factors that shape innovation policy-making. Put differently, they do not analytically question how various political dynamics, such as the governing elites' ideational stance on innovation, or the tug-of-war between the political leadership and the bureaucracy, or the motivations of the ruling elite in pursuing a specific variant of innovation policy, affect the formulation and implementation of innovation policy. Important handbooks in the field, including *The Oxford Handbook of Innovation* (2005), *The Theory and Practice of Innovation Policy: An International Research Handbook* (2010), and *Handbook of Research on Innovation and Entrepreneurship* (2011), all investigate innovation with an exclusive focus on conceptual issues and post-policy-making phenomena. They discuss various definitions and types of innovation (product, process, etc.), examine different system domains (national, sectoral, etc.), link innovation to economic performance, and analyze economic determinants of innovation. However, the *political dimension is not touched upon*.

The studies that directly focus on innovation policy, such as Lundvall and Borras (2005), Bergek et al. (2010), Chaminade and Edquist (2010), Smits, Kuhlmann, and Teubal (2010), and Vonortas and Aridi (2012), also refrain from questioning the political dynamics of innovation policy. To exemplify, Lundvall and Borras (2005) distinguish between science policy, technology policy, and innovation policy; then jump to the issue of impact assessment. Other studies mainly inquire when governments should intervene to the economy, and what should be the appropriate dialogue between NSI theory and policy. The main claim is that government intervention is required when a 'systemic failure' is inherent (Edquist and Chaminade 2006, 115), and 'systemic instruments' are needed to fix those 'systemic failures' (Smits, Kuhlmann, and Teubal 2010, 418). The analytical preference that favors the 'economy' over the 'political'

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can be seen in almost all works that assess the pros and cons of various countries' innovation systems (Nelson 1993; Edquist and Hommen 2008; B.-Å. Lundvall et al. 2009).

Putting aside this general tendency, *NSI scholars explicitly note that political dynamics should matter in the study of innovation*. In fact, some scholars perceive *the absence of politics* in NSI paradigm as a *major weakness*. In the words of Charles Edquist, who is one of the leading scholars of the framework, "[one of the weaknesses] of the [system of innovation] approach is that it lacks a component ('theory') about the role of the state. This is an important neglect, since the state and its agencies are important determinants of innovation in any [system of innovation]…many laws and rules, which influence innovation processes, are created by the state" (2001, 17).[4] Indeed, the state is important for many reasons, and one of them is related to its legislative power.

In this regard, even though the importance of the 'political' has been known, NSI scholars have commonly pursued analysis by explicitly or implicitly assuming the pre-existence of a capable, willing, and a rational state apparatus. Thus, they have not analytically focused on the political sphere. However, as Edquist (2001: 19) further notes, "nothing guarantees that innovation policy is designed [ideally]…there are many other factors than knowledge and rationality that may influence the state in its role of pursuing innovation policy." Edquist (2001, 20) cites interest groups' lobbying activities as one way of influence. In his inquiry, Edquist (2001) does not elaborate how politics of innovation policy can be analyzed in a comprehensive manner. He does not further the discussion by going beyond the lobbying hypothesis. However, Eduquist (2001, 20) emphasizes *the overall neglect of politics and political dynamics in NSI approach* to pinpoint a fertile research agenda:

> We need more knowledge about how innovation policy has *actually* been designed and implemented and which societal forces that have governed these activities. On that basis it would be possible to make empirical generalizations or create (appreciative) theories about what determines innovation policy. *These attempts should also build upon and be*

[4] Edquist (1997, 2001) argues that "national", "sectoral", and "regional" conceptualizations of innovation can be labelled together as "systems of innovation" (SI).

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> *related to the knowledge about policy processes accumulated within political science*. This could then be *the beginning of formulation* of a 'component' about the role of the state in the SI approach and in the field of innovation. Maybe such knowledge could contribute to make innovation policies analytically based to a larger extent and more long term? (emphasis added)

In addition to NSI, scholars who conduct impact evaluation of governmental support programs, or focus more on economic determinants of innovation, highlight the political sphere's potential role in the shaping of innovation policy. For instance, the *Journal of Business Venturing* devoted a special issue to the study of science parks and incubators in 2005. As noted in the introductory article, "incubators [may] exist at the behest of political interests… [and if that is the case] …without the support of those interests, incubators as an organizational form may not be very viable, which is often the case for nonprofit incubators" (Phan, Siegel, and Wright 2005, 174). While examining economic determinants of innovation, Morck and Yeung (2001, 52) assert, "[the major problem] seems to be a tendency for government subsidy programs to be captured by special interests." In a similar fashion, Crespi (2004, 21) elaborates the possibility that bureaucracies may hinder innovation via rent-seeking.[5] Thus, even though their interest lies in technical aspects of innovation, these scholars underline the potential significance of the political realm.

1.2 The politics of innovation policy

"The knowledge about policy processes accumulated within political science…[can] be the beginning of formulation of a 'component' about the role of the state…in the field of innovation" (Edquist 2001, 20). Indeed, the knowledge accumulated within political science, and political economy also, offers fertile grounds to elaborate the state's role in the innovation

[5] Both Morck and Yeung (2001) and Crespi (2004) refer to Murphy, Shleifer, and Vishny (1991) to make this argument. In short, Murphy, Shleifer, and Vishny (1991) argue that entrepreneurs may involve in rent-seeking activities if rent-seeking turns out to be more profitable than investing in innovative activities. Morck and Yeung (2001) further review this line of the economics literature.

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system. What is more, the accumulated knowledge also allows us to investigate more deeply *the political factors that influence innovation policy* by going beyond the state's role in the process. The scholarship that can be referred as *the politics of innovation policy* elaborates such political dynamics from various angles in different contexts.

In parallel to the exponentially-increased attention that has been paid to innovation studies in the last two decades, the examination of *the politics of innovation policy* has emerged as an interdisciplinary field. By relying on the toolkit of political science and political economy, and applying them to the study of innovation, this agenda aims at *exploring the dynamic interplay between political factors and innovation*. Although there are some early works, there has been a recent revival of interest both in terms of empirical contribution and theorization. Thus, this research agenda is quite fresh, as many works in this domain still aims at addressing "the absence of political analysis characterizing most literature on innovation and development" (Doner, Hicken, and Ritchie 2009, 151).

In this regard, one line of the scholarship has inquired under what political conditions the development-enhancing institutions that are examined in the developmental state literature (Chapter 2), such as the state's 'autonomy' and 'embeddedness,' the state's extractive capacity, the Weberian bureaucracy, etc. emerge. One argument is that 'good economic institutions' emerge when the 'systemic vulnerability' is high (Doner, Ritchie, and Slater 2005, 327). In other words, politicians are incentivized, or forced, to create development-enhancing institutions when they face (i) external threats, (ii) popular discontent at home, and (iii) lack of resources to meet the two challenges (Doner, Hicken, and Ritchie 2009, 153). To exemplify, while the 'systemic vulnerability' was a driving force in the successful cases of South Korea, Taiwan, and Singapore, it was not an issue in the less successful cases of Indonesia, Malaysia, the Philippines, and Thailand (Doner, Ritchie, and Slater 2005, 327).

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It is important to note that the constraints that give rise to 'systemic vulnerability' not only determine politicians' will to create 'good economic institutions,' but they also mitigate certain political institutions' negative influence on the creation of 'good institutions' (Doner, Hicken, and Ritchie 2009, 165). For instance, both the existence of large and small number of veto players (political institution) poses challenges for effective innovation policy-making (ibid.). As noted, "the structure of political authority, reflected in the effective number of veto players, matters for innovation by shaping the incentives and capabilities of policy-makers" (Doner, Hicken, and Ritchie 2009, 156). In regards to this, a high level of 'systemic vulnerability' (external threats, domestic opposition, and lack of resources to meet the two challenges) alleviates the problems that are caused by small or large number of veto players (ibid.).

As a matter of fact, the link between the structure of political economy (veto players) and innovation policy is noted more than fifteen years ago within the US context. In her brief study, Mogee (1988) questions why the US failed to adopt a national innovation policy although it was well-known that innovation was the main driver of economic growth. In addition, advanced countries other than the US were all trying to formulate coordinated and encompassing innovation policy at the time. The main reason was the *pluralistic and fragmented nature* of the US system (Mogee 1988, 40–42). On the one hand, *fragmentation of political power* and the subsequent *conflict among interest groups* made it *difficult to reach consensus* on innovation-related matters. On the other hand, the political structure made it easy for actors to *block change*. Furthermore, although it is not substantiated as in the work of Doner, Hicken, and Ritchie (2009), Mogee (1988, 41) also argues that external factors influence innovation. As noted, "the diversity and power of interest groups…makes it difficult to achieve the necessary degree of consensus to establish policies which conflict with the traditional value

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of limited government or which threaten important economic interests, *except in times of national crisis such as war or economic depression*" (Mogee 1988, 41, emphasis added).

Feller (1988) supports Mogee (1988) by showing how *large number of participants in decision-making undermined the effective formulation and implementation of innovation policy* in the US. As Feller (1988, 108) notes, "the more comprehensive the state programme, the larger the number of 'interested' participants; the larger the number of participants, the greater the time needed to generate consensus...and the greater the tendency for programme dilution to ensure funding of projects for each participating sector. The greater the programme dilution, the greater the likelihood of 'marginal' showcase results, and the less likelihood for the major scientific and technological advances which create…employment opportunities." In consequence, both recent scholarship and early works on the politics of innovation policy underline that *the effective number of veto players* and *external conditions* affect the innovation system in important ways.

If we turn back to the question under what political conditions 'good economic institutions' emerge in the sphere of innovation, we are provided with a *structural explanation* in a recent study that focuses on the 'middle-income trap' (Doner and Schneider 2016). The question is, why some countries continuously fail at overcoming the 'middle-income trap' even though the remedies are well-known? Doner and Schneider (2016, 618–29) claim that *building a pro-development coalition is paramount* to overcome the trap, and certain *social cleavages* that stem from *structural factors* curtail the emergence of such coalitions in the middle-income countries. In the words of the writers, "big business is split between foreign and domestic firms, labor is divided between formal and informal sectors, and societies overall are riven by high inequality. These cleavages splinter interests and make coalition building more difficult" (Doner and Schneider 2016, 611). As the writers indicate, the "splinter of interests" result in low levels of investment in human capital and R&D.

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The presence or absence of strong business interests is also noted as a political factor that affects innovation policy-making. As Berman (1991, 33) observes within the US context, "when a strong business interest is present, this presence helps to sustain the momentum needed for carrying legislation through Congress and/or help the White House to overcome bureaucratic resistance of agencies to new initiatives" and "when business interests are weak, technology policy initiatives founder." One example illustrates this. In 1985, the R&D tax was set to expire and the administration did not attempt to extend it in the US (ibid.). Once the program expired, the large corporations began lobbying for its renewal. The bill was renewed once the business showed an interest in the subject. The expiration and the renewal of the credit was not due to a reversal in administrational position, budgetary politics, or the policy's ineffectiveness. It was mainly due to the *business' organizational failure* (ibid.).

The executive's or *the ruling parties' 'ideological consistency'* is also cited as a political determinant of innovation policy (Berman 1991, 31–32). For instance, since the Reagan administration in the US subscribed to a market-oriented perspective in broad terms, whereby "the efficiency of the markets" was brought to the fore at the expense of government intervention, the administration also preferred market-friendly policies over government spending programs in the domain of innovation (ibid.). Likewise, while a left-of-center coalition was pursuing policies that allowed the emergence of developmental institutions in Ireland during 1994–1997, the later coalitional government parted ways with those institutions in line with its neoliberal agenda during 1997-2007 (O'Riain 2014, 79).

Competing bureaucratic interests and the politics of the federal budget are also noted as innovation policy's political dynamics (Berman 1991, 34–35). On the one hand, *bureaucratic structures that have different traditions and orientations* may *block* the formulation and implementation of *new policies* if those policies do not comply with their agenda (ibid.). The struggle between the academic engineering community and the academic science community

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in the National Science Foundation (NSF) is a case in point (ibid.). On the other hand, *budget deficit* is also said to have a *negative influence* on the initiation of new technology undertakings (ibid.). Competing bureaucratic interests and the politics of budget are said to have limited effects on innovation policy –*strong business interests dominate if they exist*. (ibid.).

To conclude, a growing body of work on *the politics of innovation policy* suggests that political dynamics affect innovation processes greatly. The number of veto players (Doner, Hicken, and Ritchie 2009, 156–61), fragmentation of political power (Mogee 1988, 40–42; Feller 1988, 108), external threats (Doner, Hicken, and Ritchie 2009, 161; Mogee 1988, 41), resources available to political elites (Doner, Hicken, and Ritchie 2009, 161), structural factors (Doner and Schneider 2016, 611), the presence or absence of strong business interests (Merrill 1988, 52; Berman 1991, 33), ruling parties' 'ideological consistency' (Berman 1991, 31–32; O'Riain 2014, 79), competing bureaucratic interests (Berman 1991, 34–35), and the politics of budgetary policy (ibid.), are all cited as important dynamics that shape innovation policy.

1.3 Main agenda, scope conditions, and towards a comprehensive framework

This thesis *speaks* to the political economy of innovation scholarship (*NSI approach* and the *politics of innovation policy*) in various ways. Before passing to that, a brief comparison of NSI paradigm and scholarly works on the politics of innovation policy is in order (table 1).

To begin with, both NSI and the works on the politics of innovation policy are *political economy approaches* that focus on different dimensions of innovation process. While NSI mainly focuses on the 'economy' sphere, studies on the politics of innovation policy primarily concentrate on the 'political' one. Whereas the *main dependent variables* are *economic performance* and *learning process* in NSI approach, they are *innovation policy-making process* and *'good economic institutions'* in the *politics of innovation policy literature*. Therefore, even though they are both labelled as 'political economy' approaches, they focus on different spheres

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of innovation process. Accordingly, this dissertation speaks to the two literatures in related but different ways –which require further elaboration.

Table 1: The literatures on national systems of innovation (NSI) and the politics of innovation policy in comparison.

	National systems of innovation (NSI) approach	**The politics of innovation policy**
Field	Political economy of innovation	Political economy of innovation
Essential focus	'Economy'	'Political'
Main research questions	What factors affect innovativeness? How does the interaction between economic institutions and organizations affect innovativeness? What factors affect learning?	What political factors affect innovation policy-making? What are the political underpinnings of 'good economic institutions'?
Main dependent variables	Innovation performance Learning process	Innovation policy-making process 'Good economic institutions'
Main independent variable	Economic determinants of innovation Sociological factors that affect learning	Political institutions Political dynamics
Argue against	Linear conceptualizations of innovation Neoclassical economics	Apolitical readings of institutions and innovation policy
Main conclusion	Political factors are potentially important and should be studied	Political factors are important and significantly influence innovation
My take from the literatures	Political dynamics are essential and need to be studied.	In fact, political dynamics influence innovation policy in numerous ways.
How I speak to the literatures	1) Partially address the absence of politics in innovation studies 2) A minor step is taken toward the conceptualization of the state's role in the innovation system [***not*** a theoretical contribution, but an *in-depth elaboration of the state's role in innovation policy-making within the Turkish context*]	1) Support the claim that political factors significantly influence innovation policy-making process. Focus on R&D as a specific domain of innovation policy: a least-likely-case. If political dynamics turn out to be important in this domain, then they would be crucial in all other innovation-related policy fields. 2) Argue that the opposition parties' stance on innovation (technological nationalism and weak institutional capacity) may also influence R&D policy-making processes significantly. 3) The in depth-examination of Turkey is an empirical contribution.

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1.3.1 A dialogue with national systems of innovation (NSI) approach and scope conditions

We can derive two main conclusions from the brief re-visiting of NSI paradigm: (i) *political factors should matter and need to be studied*; and (ii) *there is a need for a broad framework that conceptualizes the state's role in the innovation system*. The comprehensive framework that is adopted in this dissertation (based on technological nationalism, developmental state, and clientelism scholarships) *aims to further our knowledge in regards to these points*. However, it should be noted that the goal is *not* to make a concrete theoretical contribution. Rather, the framework concentrates on the state's different dimensions (opposition parties' stance on innovation policy, the tug-of-war between the executive and key innovation agencies, and political leadership's motivations in pursuing a specific variant of R&D policy), and elaborate their potential influence on R&D policy-making. On this note, there are certain *scope conditions* that need to be mentioned at the outset.

This dissertation *does not aim to elaborate all aspects of state involvement* in the innovation system. On the one hand, the state can intervene the system in various ways ranging from provision of R&D to competence building (education, training of the labor force, etc.), and from creating a suitable institutional environment (patent laws, etc.) to provision of consultancy services to the private sector (technology transfer, commercial information, etc.) (Edquist and Chaminade 2006, 114). This represents a broad domain for state action, and this thesis cannot handle the analytical investigation of such a broad topic.[6]

On the other hand, innovation policy spans a broad range of policy domains including science policy, technology policy, R&D policy, and education policy. This also represents a broad domain. Therefore, this dissertation *sets a scope condition and focuses on R&D policy*. R&D policy *specifically refers to the governmental support funds allocated to the private sector*

[6] Therefore, even though this thesis discusses the state's role in the innovation system (how its internal structure and other characteristics influence effective policy-making), the goal is not to speak to the broad 'government vs. market' debate in regards to the promotion of innovation (in broad terms) and development (Mazzucato 2013).

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with the aim of promoting R&D. This includes both direct and indirect support mechanisms. Thus, *another scope condition* limits the domain of R&D policy itself. The focus on R&D has implications on the demonstration of politics' overall importance in the study of innovation. This point will be elaborated in a minute. Putting that aside, the choice of R&D policy, and the specific focus that is placed upon governmental support funds, relies on two main points.

First, R&D support has become crucial for both business and the state during the 2000s. On the one hand, the competitive environment of export oriented industrialization (EOI) forced the private sector to become innovative and competitive. In the absence of protected markets that are akin to import substitution industrialization (ISI) era, firms have had no choice but to increase R&D efforts and innovativeness. In regards to this, government support has positively affected business R&D (OECD 2015). On the other hand, international trade agreements forbid governments to directly subsidize business –a policy tool that was available during the ISI. However, governments are being provided the opportunity to channel R&D funds to the private sector.[7] Therefore, *R&D funds have become an indispensable instrument of government intervention to ignite growth*.

In this context, the process of R&D policy-making, and the implementation of R&D policy, have become crucial. This has been true even more so for developing countries, where resources are already scarce in comparison to their developed counterparts. It should be noted that R&D is crucial *even though innovation cannot be equated to R&D*. Besides theory, the recent developments reveal this. During the 2000s, there has been a global increase in R&D intensity (gross domestic expenditure on R&D as a percentage of GDP). China doubled its R&D spending during 2008–2012 to become the main driver of global R&D (OECD 2014, 15). In fact, China's efforts to upgrade its innovation system, including the R&D sector, goes back to

[7] As Taymaz (1997, 4) puts in the Turkish context, "it can be reasonably claimed that [SMEs] will be on the agenda of the Turkish governments [over the 2000s] because the new GATT (now, WTO), regulations forbid all industrial support policies with the exception of those for the promotion of SMEs, local development, and R&D activities."

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1978 (Suttmeier and Yao 2004a, 13). In OECD era, many countries allocate more than 2 percent of their GDP to R&D.[8] Whereas Finland, Sweden, and Japan allocate more than 3 percent of their GDP to R&D, Israel and South Korea allocate more than 4 percent.[9] In Turkey, there has also been a noteworthy increase in R&D intensity during the 2000s. While the intensity was 0.48 percent at the turn of the century, it crossed the 1 percent threshold in 2014.[10]

The contribution of innovation and R&D to employment generation, productivity growth, trade balance, and other economic phenomena is well-known since the classical political economists (Goodacre 2010; Kurz 2010; Roth 2010). During the last two decades, the new growth theories and other approaches in economics have especially demonstrated the importance of innovation and R&D for growth and development (Grossman and Helpman 1994; Sengupta 2014). Political scientists also acknowledged the issue's significance long ago. As noted, "what government does to influence innovation is of interest because it affects such aspects of the nation's economic performance as productivity growth rates, trade deficits and unemployment levels" (Roessner 1988b, 5). With this in mind, it is no surprise that all 50 states in the US were directly concerned with technological innovation as early as 1983 (Lindsey 1988, 91). 22 states had actually pursued "dedicated" programs to promote high-tech industrial growth (Feller 1988, 105). For sure, the relationship between R&D, growth, and development is a complex one (Pianta 2005; Nelson 1993; Mohnen and Hall 2013). However, *R&D is quite important in the end*, and *governments play an important role in the R&D sector*.

It is important to highlight that this thesis *does not formally analyze* the impact of R&D policy. However, certain traits of the policy-making process, including (i) the quality of evidence-based policy-making, (ii) the relative strength of autonomous innovation agencies vis-à-vis political elites in agenda-setting, (iii) the private sector's involvement in the formulation

[8] OECD (2016), Gross domestic spending on R&D (indicator). doi: 10.1787/d8b068b4-en (Accessed on 25 August 2016).
[9] Ibid.
[10] Ibid.

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of R&D policy, and (iv) the political leadership's motivations in pursuing R&D fund allocation, have enormous implications on impact and outcome. Thus, even though this thesis *does not offer formal impact evaluation*, it has certain things to say about the potential impact of R&D policy-making on outcomes.

To sum up, this thesis *speaks* to NSI literature in two interrelated ways (table 1). First, it demonstrates the importance of political factors in the formulation and implementation of innovation policy (within the context of R&D policy) by following the footsteps of a growing body of work on the politics of innovation policy. Second, the thesis aims to further our understanding of the state's role in the innovation system, *although the goal is not to make a generalizable theoretical argument*. Each dimension of the analytical framework (technological nationalism, developmental state, and clientelism) sheds light on a different layer of R&D policy-making, and the state plays a different role in each of the layers.

1.3.2 A dialogue with the politics of innovation policy scholarship: Further scope conditions, implications, and potential contributions

Many factors varying from the ruling parties' 'ideological consistency' to the presence or absence of strong business interests are cited as political determinants of innovation policy (Section 1.2). Before passing to the discussion of how this thesis speaks to the politics of innovation policy scholarship, it is essential to highlight in what ways *it does not*. In other words, it is useful to discuss which dimensions of the political realm are less important within the context of this thesis, or have not been important in Turkey during the 2000s.

To begin with, this thesis *does not question under what political conditions the 'good economic institutions' that are outlined in the developmental state scholarship*, such as the state's 'autonomy' and 'embeddedness,' the state's extractive capacity, the Weberian bureaucracy, etc. *emerge*. However, the empirical analysis conducted throughout the chapters provide a fertile ground to assess *the Turkish state's developmentalist turn in the R&D sector*

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in the aftermath of the 2007-2008 global economic crisis (Chapter 7). Consequently, the analytical focus of this thesis *differs from the studies that concentrate on the origins of 'good economic institutions'* (Doner, Ritchie, and Slater 2005; Doner, Hicken, and Ritchie 2009; Doner and Schneider 2016).

On this note, once it is concluded that the institutions that characterize the developmental state *have not been in place in Turkey in the R&D sector* during the 2000s (Chapter 7), this finding becomes relevant for the above discussion. Doner, Ritchie, and Slater (2005) argue that 'good institutions' emerge when the 'systemic vulnerability' is high. In other words, politicians are incentivized to craft development-promoting institutions when they face (i) external threats, (ii) popular discontent at home, and (iii) insufficient resources to meet the two challenges (Doner, Hicken, and Ritchie 2009, 151–53). None of these constraints have been existent in Turkey during the 2000s (in comparison to South Korea in the 1950s). Thus, the 'systemic vulnerability' has been low. Furthermore, in line with the proposition of Doner, Hicken, and Ritchie (2009), the development-enhancing institutions have not been in place in Turkey. Once again, this finding is indicative, but it *does not constitute the essence of this dissertation*. This thesis focuses on *the political economy factors that influence R&D policy-making processes*.

Second, many political dynamics that are cited in the scholarship have been important within the Turkish context as well. *The AKP's pro-market ideological stance* (especially in the early years), *the absence of strong business interest in R&D and technological upgrading*, and *the absence of an effective veto player*, have all influenced innovation policy-making in different ways. All these factors are discussed as part of a broader concern throughout the chapters. For instance, the number of effective veto players is directly related to the nature of interaction between the political leadership and autonomous innovation agencies (Chapter 5). Likewise, the ruling party's ideological orientations is related to the party's broader agenda in

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pursuing a specific variant of R&D policy (Chapter 6). Consequently, the holistic framework adopted in this dissertation captures many of the political dynamics cited above. This issue is discussed in Chapter 2, where the analytical framework is outlined in detail.

Under these scope conditions, and having the analytical focus briefly described, this thesis aims to contribute to the politics of innovation policy scholarship in three different ways (table 1). First, the growing body of work on the politics of innovation policy still argues against the apolitical readings of institutions and innovation policy. Thereby, one main goal of the scholarship *is still the demonstration of political dynamics' relevance and influence on innovation-related phenomena*. In this regard, the focus that is placed upon R&D policy in this thesis is indicative for the broad literature.

In this dissertation, R&D policy *refers to the distribution of R&D funds to business or entrepreneurs with the goal of enhancing R&D*. It represents a specific domain of innovation policy. In the scholarship, innovation policy is generally used as an umbrella term that cuts across many policy fields including science, technology, education, and R&D. Typically, these domains are examined together. For instance, Doner and Schneider (2016) focus on education and R&D policy (overall R&D spending in a country). The writers note that, "for brevity, we concentrate on education and [R&D], but the framework applies to a range of other policy areas, including legal and financial systems, which are similarly institution intensive" (Doner and Schneider 2016, 613). Within the context of their study, this might be a valid argument. However, without even passing to other policy domains, *there are crucial differences among the sub-domains of innovation policy in regards to the degree of political salience.*

To exemplify, debates on science and education policy are heavily ideological and can easily get on voters' and parties' nerves –like the theory of evolution and the role of religious teachings in national education. These domains also attract great media attention. In contrast, R&D policy (allocation of governmental resources to the private sector) is much less salient. In

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some cases, factors that directly influence R&D policy arouse attention. The executive's intervention in autonomous innovation organizations is a case in point. However, the path of R&D policy *is not the issue that is being discussed even in those cases*. Thus, R&D policy-making either tends to be characterized as *technocratic in nature*, or is thought to *offer little to excite political scientists and political economists*. In this regard, the *seemingly above-politics* trait of R&D policy makes it a *least-likely-case* to study (Levy 2008, 12) –if political dynamics turn out to be important in this domain, then they would be crucial in all other innovation-related policy fields. In fact, this has been the case.

Second, this thesis argues that opposition parties' stance on innovation *may* also influence R&D policy significantly. *This has been the case in Turkey, and it might be the case in other contexts as well.* In the politics of innovation policy literature, the primary focus is tended to be placed upon the ruling party or the executive. While some studies concentrate on the ruling party or coalitions to see how a change in government influences innovation policy (O'Riain 2014, 68), some others question how political decisions that are taken during critical junctures affect innovation (Breznitz 2007). Opposition is considered only when the issue is heavily ideological –such as debates on religion and education. This lack of interest in opposition parties is particularly apparent in technological nationalism scholarship (Chapter 2).

In this regard, this thesis suggests that *the opposition's attitude may also matter in contexts where the policy in question is not politically salient and is considered as technical.* Furthermore, *it can also be important when the ruling party has the power to enact legislation on its own*. It might be the case that, as in Turkey, the opposition's ideational stance (technological nationalism) and institutional weakness hinder *the creation and deliberation of alternative policy choices* –an important element of politics.[11]

[11] Chapter 3 demonstrates the fact that opposition parties have had significantly different views on R&D policy in Turkey during the 2000s. The CHP's views have contradicted that of the AKP's especially. Whereas the AKP has subscribed to a horizontal policy design and promoted relaxations in resource allocation criteria, the CHP has favored a sectoral approach and opted to concentrate resources on relatively developed regions. Both the CHP and

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Last, the in-depth examination of the Turkish case is an empirical contribution. On the one hand, scholarly works that concentrate on the politics of innovation policy have examined many countries *except for Turkey*. These countries include, Ireland, Taiwan, and Israel (O'Riain 2004; Breznitz 2007), Thailand Singapore, Israel, and Brazil (Doner, Hicken, and Ritchie 2009), and the US (Roessner 1988a). Although the recent article of Doner and Schneider (2016) takes Turkey alongside Brazil, Mexico, Argentina, Colombia, Peru, Southeast Asia, Thailand, Malaysia, and South Africa, its level of abstraction is high, and the article primarily questions the origins of 'good institutions.' Accordingly, the article does not aim to, and does not, provide an in-depth analysis of the Turkish case. On the other hand, although all actors in Turkey acknowledge the significance of innovation for economic growth and development, *virtually no scholarly work has yet focused on the political dynamics of innovation policy in the country* (Section 1.5).[12] Therefore, the in-depth elaboration of Turkey in this thesis is an empirical contribution.

1.4 A comprehensive framework for the analysis of R&D policy-making processes

As noted in the previous sections, this thesis *primarily concentrates on R&D policy-making processes*. It aims to break-down the multi-layered nature of R&D policy-making by equipping itself with the toolkit of political economy. The essential goal is to explain *how different layers of R&D policy-making are affected by different pollical economy factors*. To this end, the thesis adopts a holistic framework by primarily relying on the ideas of technological nationalism, developmental state, and clientelism scholarships.

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the MHP suggested a legal framework that was significantly different from the one created by the AKP. Despite these differences, the opposition supported AKP on key legislation due to technological nationalism and institutional weaknesses in policy-making.

[12] My stand-alone paper that is forthcoming in the *Journal of Balkan and Near Eastern Studies* as part of a special issue on the AKP period in Turkey focuses on this issue. This article is based on the arguments presented in this dissertation.

The initial questions that are raised are *how do political economy actors perceive innovation and R&D, and how does this perception shape the formulation of R&D policy*. In more concrete terms, (i) how do parliamentary elites debate and elaborate R&D legislation, and (ii) how does elites' behavior shape R&D policy. These questions lead one to empirically observe (i) whether political parties have opposing views on R&D policy, and (ii) how political elites perceive, debate, and enact R&D legislation. The literature on technological nationalism offers essential theoretical arguments in regards to these issues (Chapter 2).

The second step is to ask *how does the political leadership or the executive pursue R&D policy on the ground.* Put differently, how does the executive's interaction with autonomous innovation agencies shape R&D policy? The developmental state scholarship provides useful concepts to trace these questions (Chapter 2). The last step is to inquire *the ruling party's motivations in pursuing a specific variant of R&D policy*. The essential question is: *Does the political leadership engage in clientelistic relations, behave as populists, or rely only on rational grounds in R&D fund allocation?* The re-visiting of scholarly works on clientelism and the related terms is required to answer this question, as definitional issues are quite important (Chapter 2).

Three points should be clarified at the outset in regards to the analytical framework. To begin with, what is meant by 'framework' *is not a formal theory*. Rather, it is *an attempt that combines the related arguments of different scholarships to carefully analyze the multi-dimensional character of R&D policy-making processes*. Each of the three scholarships (technological nationalism, developmental state, and clientelism) sheds light on an important, yet different, layer of R&D policy-making.

Second, one might wonder why the ruling elites' motivation in resource allocation is elaborated at the very last instead of at the beginning. The reason is, to be able to assess whether governmental support funds are being distributed in a clientelistic or populist fashion, *one needs*

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to acquire various kinds of information prior, including *how the distribution is handled in practice*, the nature of the *interaction between the executive and the bureaucracy*, and the *quality of evidenced-based policy-making mechanisms*. Only after analyzing these, one can assess whether the distribution is being based on sound reasoning, clientelism, or populism.

Last, one might also wonder why the mentioned literatures, that are technological nationalism, developmental state, and clientelism, are specifically chosen for the analysis. On the one hand, all three literatures are highly relevant in the examination of R&D policy's development pattern. Each focus on a different dimension of R&D policy-making. On the other hand, this work equips itself with the toolkit of political economy, and all the three literatures are political economy approaches. Thus, some frameworks that could be potentially relied on, such as policy-cycle theory, are not elaborated in this study.

Furthermore, *although the primary interest of this thesis lies in the political economy factors that influence R&D policy-making processes*, the empirical evidence that is provided throughout the chapters *speak to the heart of the developmental state scholarship*. While Chapter 5 questions many elements of the Turkish state's internal and external capacities in the R&D sector, Chapter 6 questions the existence of clientelistic relations. The issue of clientelism is commonly discussed by developmental state scholars as well. Thus, Chapter 5 and Chapter 6 *accomplish an additional goal* of assessing the Turkish state's developmentalist turn in the R&D sector. Since the primary objective of the chapters *is not to discuss the Turkish developmental state*, but *to shed light on R&D policy-making processes*, the examination of the Turkish developmental state is conducted in the concluding chapter.

Consequently, although the three literatures are *equally important* since each sheds light on a *different layer of R&D policy-making*, the developmental state literature (encompassing clientelism) is relatively *more important* since the empirical chapters collectively assess the Turkish state's developmentalist turn in the R&D sector. Furthermore, although technological

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nationalism is a crucial element of the framework, additional factors have also complemented technological nationalism (nationalistic views of the opposition on innovation) to turn down the opposition's voice in the parliament. This includes the opposition's institutional weakness and invisibility in R&D policy-making. Accordingly, Chapter 4 elaborates technological nationalism alongside these additional factors.

1.5 Central research question

The main research agenda of this thesis is related to the political economy of innovation. The broad question is, how do political economy factors influence innovation policy-making processes? In the light of this, the *central research question* is, *why did Turkish R&D policy change in the 2000s, and what political economy factors did affect the process?* Many considerations have motivated me to raise this central research question.

To begin with, the question *primarily* rests on an empirical observation –which is in fact one of the thesis' potential contributions. That is, there has been a shift in the logic of R&D fund allocation to the private sector in Turkey during the 2000s (Chapter 3). While the 1990s' dominant view opted to concentrate resources on relatively developed regions and places with a strategic focus (vertical allocation), the 2000s' dominant perspective favored a horizontal policy design that has been complemented by relaxations in resource allocation criteria. Thereby, the 2000s' approach has led to a more spatially-equal allocation of the resources. The question that this thesis raises is, what explains the shift in R&D policy?

A certain gap in the Turkish political economy scholarship has also attracted my attention. In Turkey, all actors acknowledge the significance of innovation and R&D for economic growth and development. They all consider R&D as a crucial factor of production and argue that only a well-functioning innovation system can pull Turkey out of the middle-income-trap. This includes the AKP's single party governments, opposition parties, civil

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society organizations, think tank agencies, and academicians.[13] The following statement of Nihat Zeybekçi, the Turkish Minister of Economy, reflects this dominant view: "Today, the way of increasing competitiveness and of having a better corner in world trade is research and development, innovation and technology-based production and branding."[14] Based on this shared understanding, many scholars conducted impact evaluation of governmental support programs in Turkey (Erdil, Pamukçu, and Çetin 2013; Tandoğan and Pamukçu 2011; Wojciech et al. 2013; Akçomak and Taymaz 2007; Özçelik and Taymaz 2008), and many organizational documents assessed pros and cons of the Turkish innovation system (Elçi 2009, 2001; World Bank 2009; Çetin and Erdil 2014).

Despite this consensus, however, *virtually no scholarly work has yet examined the political dynamics of R&D policy in Turkey*. Put differently, no study has yet questioned how the opposition parties' stance on R&D, or the tug-of-war between the executive and autonomous innovation agencies, shaped R&D policy in the country. Even though the mentioned organizational documents identified problems in regards to evidence-based policy-making in the Turkish innovation system, they did not elaborate how those problems affected R&D policy. Likewise, although the executive's intervention in autonomous innovation agencies attracted attention, no inquiry has yet questioned in what ways interferences shaped R&D policy.[15] To the best of my knowledge, no study has even raised the question of whether political parties have divergent views on R&D policy in Turkey. This empirical gap attracted my attention, and motivated me to raise the central research question.

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[13] TÜSİAD (2008) *Bölgesel İnovasyon Merkezleri: Türkiye için Bir Model Önerisi*; MÜSİAD (2012) *Küresel Rekabet için AR-GE ve İnovasyon: Stratejik Dönüşüm Önerisi*; TEPAV (2012) *Teknolojik İlerleme ve Devletin Rolü İsrail, Tayvan ve İrlanda örneklerinden Türkiye için dersler*; Gökhan Yılmaz, 'Turkish Middle Income Trap and Less Skilled Human Capital, Central Bank of the Republic of Turkey,' Working Paper No: 14/30, 2014.
[14] Şeyma Eraz's interview with Nihat Zeybekçi, *Daily Sabah*, 13 April, 2015.
[15] Various writings of Aykut Göker (who assumed important roles at TÜBİTAK during the 1990s) that are published on a website labelled 'Bilim, Teknoloji, İnovasyon Politikaları Tartışma Platformu' (where experts on the Turkish innovation system share their ideas) elaborate the issue of policy-discontinuity in Turkey in the field of science, technology, and innovation policy (http://www.inovasyon.org/yazardetay.asp?YazarID=1).

In addition to Turkey-specific observations, the importance of R&D policy-making in contemporary world (Section 1.3.1), the apparent absence of the 'political' in NSI approach (Section 1.3.1), and the insights that can be derived from the in-depth elaboration of the Turkish case (Section 1.3.2 and Chapter 7), motivated me to inquire into the political economy factors that have influenced R&D policy-making processes in Turkey during the 2000s.

1.6 Research design and methodology

"Good social science is problem-driven and not methodology-driven, in the sense that it employs those methods which for a given problematic best help answer the research questions at hand" (Flyvbjerg 2006, 242). This is one crucial point on which there is a consensus in the discipline. For sure, scholars who have strong leanings towards one of qualitative or quantitative research designs engage in a lively debate about the appropriate stance that needs to be taken in a scientific research (Ragin 1987; King, Keohane, and Verba 1994; Gerring 2001; Brady and Collier 2004). Yet, both "qualitative and quantitative scholars share the overarching goal of producing valid descriptive and causal inferences [and they] pursue different specific research goals, which in turn produce different norms about research practices" (Mahoney and Goertz 2006, 228). Therefore, *appropriate research design follows from the research question*.

In political economy scholarship, studies that investigate a decision-making process, or a policy-making process in more concrete terms, *commonly opt for a qualitative research design*. Scholarly works that examine different aspects of state-business relationship, or the interplay between political elites and bureaucrats, also subscribe to such a research design (Evans 1995, 21–42). The questions at hand require an in-depth elaboration of the cases, whether single or multiple. Since this dissertation examines political economy factors that influence R&D policy-making processes, *including the tug-of-war between governing elites and bureaucrats*, it also opts for a *qualitative research design*.

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1.6.1 Case selection

This dissertation focuses on *Turkey as a single-case study*. As the central research question reveals, the agenda is based on an empirical observation within the Turkish context (Section 1.5). However, this does not imply that the thesis offers context-dependent findings only. On the one hand, the investigation has implications on the politics of innovation policy scholarship as already discussed (Section 1.3.2). On the other hand, the examination speaks to the developmental state framework –with implications on the broad literature (Chapter 7). Therefore, *while the thesis primarily conveys the Turkish story and offers many context-dependent contributions (Chapter 7)*, it also aims to contribute to the innovation literature by offering *new insights on political economy factors that affect innovation policy-making processes* (Section 1.3.2). The thesis also *drives lessons for other developing countries via an elaboration of the Turkish state's developmentalist turn in the R&D sector* (Chapter 7).

Besides these main considerations, this dissertation takes side with Bent Flyvbjerg, who highlights that: "a scientific discipline without a large number of thoroughly executed case studies is a discipline without systematic production of exemplars, and that a discipline without exemplars is an ineffective one" (2006, 219).

1.6.2 Data sources

This thesis relies on various sources to conduct analysis, including (i) main governmental and organizational policy documents, (ii) laws and regulations, (iii) parties' election bulletins, (iv) parliamentary discussions, (v) descriptive statistics, (vi) secondary literature, and (vii) interviews. All these sources have been important in documenting the dissertation's main concerns, and demonstrating its arguments throughout the chapters.

Interview data have provided indispensable information that is related to almost all important issues that are taken up in this dissertation. Interview method is utilized for two main purposes –*as a preliminary research to the main study*, and *as a main data source and*

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triangulation. Since interview method is central to the thesis, and many studies in the scholarship suffer from opaqueness *in regards to the way that the method is executed*, the elaboration of the interview method and its execution are in order.

1.6.3 Interview method

Interview method is an essential toolkit of scholarly research in social sciences (Campbell et al. 2013, 295). In political science, a number of classics primarily rely on interview data (Berry 2002, 679). In many cases, "interviews remain the only means of identifying or confirming the causal mechanisms that generate the outcomes we observe" (Mosley 2013, vii). In this regard, interview method is especially vital for political scientists and political economists whose aim is to investigate *a decision-making process*, and *examine the interplay between the political leadership and the bureaucracy*. As Peter Evans notes in his ground-breaking study, "interviews with dozens of current and former government officials were the primary source of…understanding of what was going on inside...states" (1995, 19).

In this dissertation, interview method is used for two primary purposes: as a *preliminary research to the main study*, and as a *main data source and triangulation*. To begin with, preliminary interviewing is one way to generate and test alternative hypothesis in a "rough-and-ready" manner (Lynch 2013, 34). This is proved to be useful within the context of this thesis, since there is virtually no scholarly work that questions the political dynamics of R&D policy in Turkey. One example illustrates the interview method's usefulness in this regard.

At the initial stages of the dissertation, the main hypothesis was related to the conservative economic elites' potential influence on R&D policy-making in Turkey. There were reasonable grounds to expect such an influence (Chapter 6). Since no prior study questioned this link before, a preliminary fieldwork was necessary. To this end, the elite-interviewing method was employed. During October-November 2014, six semi-structured face-to-face interviews were conducted with relevant stakeholders in Turkey. Short, and rather

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informal, interviews were also conducted with technopark managers. Furthermore, a constant dialogue was kept open with experts who had valuable knowledge on the Turkish innovation system. During the fieldwork, it became clear that not only the conservative economic elites, but also the secular ones, did not effectively take part in R&D policy-making processes in Turkey (Chapter 6). This finding influenced the subsequent research greatly.

Interview method is also relied on as a *main data source* and it is utilized for the purposes of *triangulation*. In broad terms, triangulation can be defined as "the combination of two or more methodological approaches, theoretical perspectives, data sources, investigators and analysis methods to study the same phenomenon" (Hussein 2009, 2). The importance of triangulation is well-documented in the literature (Denzin 1978; Jick 1979; Mathison 1988; Hussein 2009). Different types of triangulation are also outlined varying from data triangulation to investigator triangulation (Hussein 2009, 3–4). In this thesis, interview method is used for the purposes of *data triangulation*, as interview data is relied on to *validate information that is obtained from other sources*.

In total, *26 interviews* were conducted between *October 2014 and June 2016* in different periods (appendix 1). Five of those were with technopark managers. Although the interviews with those managers reveal important information related to some issues mentioned in the thesis, they are not analytically connected to the main arguments. Two interviews were follow-up interviews. *Except for the one which was conducted over the phone, all interviews were semi-structured face-to-face interviews*.

Bureaucrats (previous and current), and individuals who have/had worked for main innovation governance agencies in Turkey constitute the sample frame. Whereas seven interviewees were affiliated with the Scientific and Technological Research Council of Turkey (TÜBİTAK), four were affiliated with the Small and Medium Sized Enterprises Development Organization (KOSGEB). The list included one interviewee each from the Ministry of

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Development (MoD), the Ministry of Science, Industry, and Technology (MoSIT), the Technology Development Foundation of Turkey (TTGV), and one important consultant agency in Turkey. The list also included three technopark managers and three experts on the Turkish innovation system (appendix 1).

It should be noted that the affiliations *understate the diversity in the sample.* Almost all interviewees have/had worked for *more than one important agency* in the Turkish innovation system. In fact, if I count the number of interviewees by considering the different organizations that they have worked for, the number would double at the least. Therefore, the interviewees could provide information not only about their affiliated agency, but also about other organizations. To keep anonymity, I cannot reveal that information. The interview data is analyzed by using the *Qualitative Data Analysis software*.[16] The software provided invaluable practical assistance in handling more than 160 pages of interview notes.

In regards to the interview method's execution, non-random sampling in the form of "information-oriented selection" is employed as the main sampling strategy (Flyvbjerg 2006). The purpose of "information-oriented selection" is "to maximize the utility of information from small samples and single cases [where] cases are selected on the basis of expectations about their information content" (Flyvbjerg 2006, 230). Snowball sampling is also employed as a follow-up strategy (Atkinson and Flint 2001).

In the elite-interviewing, the common interview format is semi-structured face-to-face interviews. Semi-structured interview questions not only provide a "road map" for the researcher during the interviews, but they also allow interviewees to elaborate important issues that either escaped the researcher's notice or are not known to the researcher (Leech 2002, 665). Furthermore, semi-structured interview design with open-ended questions fit very well to the elite-interviewing. As noted, "elites especially—but other highly educated people as well—do

[16] For more on the software see, http://provalisresearch.com/products/qualitative-data-analysis-software/freeware/

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not like being put in the straightjacket of close-ended questions" (Aberbach and Rockman 2002, 674).

As a practitioner of the interview method, I strongly take side with studies which argue that essential information regarding the method's execution needs to be provided to reflect the methodological rigor of the analysis (Bleich and Pekkanen 2013, 84). This includes the number and date of the interviews, source of the interviews (sample frame or snowball), length of the interviews, and recording type of the interviews. Information in regards to these are provided via the 'interview methods table' (appendix 1).[17]

1.7 Main contributions

This thesis aims to contribute to the political economy scholarship in various ways, and they are elaborated at length in the concluding chapter (Chapter 7). In this section, the main contributions are briefly outlined, with the main purpose of *emphasizing the dissertation's main goals and agenda*.

1) A growing body of work on the politics of innovation policy still aims to demonstrate political factors' significance and influence on innovation-related phenomena. In this regard, the focus on R&D (allocation of governmental support funds to the private sector) as a sub-field of innovation policy is illustrative for the broad scholarship. As noted, the seemingly above-politics trait of R&D policy makes it a least-likely-case to study Levy (2008, 12) –if political dynamics turn out to be important in this domain, then they would be crucial in all other innovation-related policy fields (Section 1.3.2). In fact, this has been the case.
2) This dissertation claims that opposition parties' stance on innovation *may* also influence R&D policy in important ways besides the ruling party or the executive. *This has been the*

[17] For the 'interview methods table' see Bleich and Pekkanen (2013).

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case in Turkey, and it might be the case in other contexts. As noted, the primary focus is tended to be placed upon the ruling party or the executive in the politics of innovation policy literature, and the absence the opposition is particularly apparent in technological nationalism literature (Section 1.3.2). In this regard, this thesis argues that *the opposition's attitude may also matter in contexts where the policy in question is not politically salient, is considered as technical,* and *the ruling party has the power to enact legislation on its own*. The opposition's ideational stance (technological nationalism), and institutional weakness, *may* hinder *the creation and deliberation of alternative policy choices* (an important element of politics), as in Turkey.

3) As mentioned, although the primary focus of the dissertation is on R&D policy-making processes, the empirical chapters collectively suggest that the Turkish state *has yet to develop the institutions of the developmental state in the R&D sector*. Despite the positive steps undertaken, many problems that are related to the bureaucracy's absence of autonomy vis-à-vis the executive, the bureaucracy's lack of embeddedness, problems in regards to bureaucratic coordination, etc. have curtailed the Turkish state's developmentalist capacity in the R&D sector. On the one hand, this finding supports earlier works on the Turkish developmental state (Öniş and Riedel 1993; Bayar 1996; Biddle and Milor 1997; Luca 2016). On the other hand, it has further implications for the broad literature on the developmental state (Chapter 7).

4) The thesis offers various context-dependent empirical contributions, which are elaborated in the concluding sections of the empirical chapters. More importantly, the thesis speaks to an important debate on the Turkish political economy. This dissertation argues that rather than clientelistic relations, a neo-populist approach has been dominant in R&D fund

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allocation in Turkey during the 2000s (Chapter 6).[18] This finding supports Buğra and Savaşkan (2014) on the point that *Turkey's growth trajectory was not based on the newly emerged business class' entrepreneurial spirit* during the AKP period. However, the thesis also contends that the main issue *has not been one of clientelism as in the construction sector or the media*, but it *has been one of neo-populism* (including a different form of clientelism) that is akin to the "controlled neo-populism" concept of Öniş (2012).

1.8 Road map of the thesis

The dissertation is structured as seven chapters including this introduction. Chapter 2 outlines the analytical framework by going through the scholarly works on technological nationalism, developmental state, and clientelism. The chapters from Chapter 3 to Chapter 6 undertake an in-depth examination of R&D policy-making processes in Turkey during the AKP period. While Chapter 3 demonstrates the political parties' divergent views on R&D policy, Chapter 4 examines how the opposition's ideational stance (technological nationalism), institutional weakness in R&D policy-making, and low priority assigned to R&D in contrast to the rhetoric, led it to support the AKP on key R&D legislation. This behavior also undermined the formulation and promotion of alternative policy choices in the context of R&D policy.

Chapter 5 turns a keen eye on the executive–bureaucracy interaction in the Turkish innovation system during the 2000s. The primary focus is placed upon the AKP-TÜBİTAK interaction, as TÜBİTAK is acting as the leading agency in the Turkish innovation system. The chapter documents how the executive's interventions undermined TÜBİTAK's autonomy, and how this situation led to a shift in TÜBİTAK's perspective on R&D policy in line with the

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[18] This is *not to* say that clientelistic relations *have not been existent* in the R&D sector. It means that *compared to other sectors* (construction, media, etc.), clientelism *has not been the main problem* in *R&D fund allocation*. The primary issue has been *neo-populism*, instead of *clientelism* (Chapter 2 and Chapter 6).

AKP's preferences. The chapter also documents the flexibilizations in resource allocation criteria in the R&D sector during the 2000s –this being one of the AKP's political choices.

Chapter 6 questions the AKP's rationale and motivation in R&D fund allocation to the private sector, and inquires whether the allocation has been handled based on sound reasoning, clientelistic relations, or populist behavior. As argued, neo-populist tendencies have mainly motivated the distribution. Chapter 7 concludes the dissertation by discussing the contributions in detail, putting forward the thesis' limitations, and offering a future research agenda.

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CHAPTER 2: A Comprehensive Framework for the Analysis of R&D Policy-Making Processes

This chapter offers a holistic framework for the examination of *political economy factors* that influence *R&D policy-making processes*. The framework in question is *not* a formal one, in the sense that it does not propose a formal theory. It rather attempts to break down the multi-dimensional character of R&D policy-making processes, and questions the factors that influence the formulation and implementation of R&D policy. The primary objective of the framework is to provide a theoretical background for the subsequent empirical analysis conducted throughout the dissertation. Thus, one objective of the chapter is to inform the reader about what to expect in the upcoming empirical investigation.

The comprehensive framework addresses three sets of questions at the theoretical level: (1) How do political elites and other political economy actors perceive innovation and R&D? How does this perception shapes the formulation of R&D policy? (2) How does the tug-of-war between the executive and autonomous innovation organizations affect the creation and implementation of R&D policy? (3) What determines ruling elites' R&D policy preferences? Do governing elites engage in clientelistic relations, behave as populists, or rely on rational grounds in the allocation of R&D funds?

Although their primary focus is not placed upon R&D policy, some approaches in political economy aims at conceptualizing a policy-making process (industrial or technology) by focusing on the process' different layers. Those approaches provide a fertile theoretical background for the analytical investigation of the the above set of questions. To begin with, the literature on *technological nationalism* primarily focuses on the first set of questions and examines the interaction between *ideology* and *technology policy*. The *developmental state* scholarship conceptualizes the *state's internal structure*, and addresses the *interplay between*

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the executive and the bureaucracy in the sphere of *industrial policy*. Studies that trace *clientelistic relations* inquire the *main motivations of the ruling parties in resource allocation*.

The analytical concepts that are put forward in the three literatures (technological nationalism, developmental state, and clientelism) are essential, as they have strong implications for the study of R&D policy. Furthermore, those concepts also cover many of the political determinants of innovation that are outlined in the previous chapter (Section 1.2). In this regard, by re-visiting the main theoretical arguments of technological nationalism, developmental state, and clientelism scholarships, this chapter offers a comprehensive framework for the study of R&D policy-making processes. Section 2.1 concentrates on technological nationalism, Section 2.2 focuses on the developmental state, and Section 2.3 elaborates clientelism and the neighbouring concepts. Section 2.4 concludes the analysis by discussing the interaction between innovation policy's political determinants (Section 1.2) and the framework outlined in this chapter.

2.1 Technological nationalism

How do political elites and the society at large perceive science, technology, and innovation related phenomena? How does this perception inspires the formulation of R&D policy? The scholarship on technological nationalism provides crucial theoretical arguments, empirical observations, and insights to answer these questions. As a concept, technological nationalism is used in various ways in different contexts. Similar labels akin to technological nationalism are put forward in the scholarship including techno-nationalism and neo-techno-nationalism. Other terms like techno-globalism are also used in close connection with the discussions on techno-nationalism. There are fundamental differences in the ways that technological nationalism and the related terms are conceptualized. Those differences have implications on the analysis of R&D policy-making processes. Therefore, a brief investigation of the terms' various utilizations is in order.

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2.1.1 Techno-nationalism, techno globalism, and neo-techno-nationalism

In its initial version coined by Robert Reich in 1987, techno-nationalism described an endeavor to "protect future American technological breakthroughs from exploitation at the hands of foreigners, especially the Japanese" (Kennedy 2013, 911). At the time, the concern was that the US leadership in global economic affairs, and technological advancements, were being challenged by the Japanese. The rise of Japan was not only casting doubts on the US leadership, but it was also endangering the US national security as claimed by techno-nationalists (Lee, Chan, and Oh 2009, 11). A type of 'American exceptionalism' was on the air as well, which attributed unique characteristics to American technology and body of knowledge (ibid.). This defensive approach to technology policy had replaced the 1980s' techno-globalist view. Then, the US technological progress was not considered to embody exceptional traits that were attributed to the American nation, and the emphasis was placed upon global harmony and collaboration instead of conflict (ibid.).

In subsequent studies, techno-nationalism and techno-globalism are mainly used to describe the Asian countries' technology policies (Keller and Samuels 2003b). Various definitions of techno-nationalism combined the ideas that (1) technology is an indispensable ingredient of economic growth and development, (2) technological prowess is essential to attain global power, (3) dependence on foreign technology poses dangers for national goals, and (4) technology is especially critical in preserving national security.[19]

Equally importantly, techno-nationalism is primarily associated with protectionist policies. For instance, Ernst (2012, 1) questions "whether Europe has left behind…'techno-nationalism,' or whether government action in support of high-tech industries through various forms of protectionist policies is re-emerging…on a region-wide scale." The technology policy that has been pursued by the Chinese authorities since China joined the WTO is considered as

[19] For a brief review of the terms techno-nationalism, techno-globalism, and neo-techno-nationalism see Lee, Chan, and Oh (2009, 11–12), Kwak, Lee, and Chung (2012, 967–68), and Kennedy (2013, 911–13).

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techno-nationalist, or include techno-nationalist elements, since the policy is seen as an effective way to protect and incentivize Chinese national industry in the absence of traditional protection instruments like tariffs (Suttmeier and Yao 2004b, 16; Han 2009, 33).

In sharp contrast to techno-nationalism, techno-globalism refers to a stance that is open towards foreigners, encourages international collaboration, favors global market forces over governments, and promotes global interests rather than national ones (Yamada 2000; Suttmeier and Yao 2004b, 18). Therefore, techno-globalism is associated with liberal policies, including free trade, openness to foreigners, and global collaboration in technological affairs.

In reaction to the extreme positions attributed to techno-nationalism and techno-globalism, the term 'neo-techno-nationalism' is introduced by Yamada (2000) to address the complex developments of the globalized world. The main argument is that countries can pursue a national agenda by melting protectionist and liberal policies in the same pot, and by forging flexible interactions with foreigners depending on circumstances. Governments can (i) promote national interests by leveraging globalization instead of preventing it, (ii) promote private initiative and public-private cooperation instead of imposing strict authority or surrendering to global forces, (iii) welcome foreigners if it serves national agenda, and (iv) envisage both cooperation and conflict in international relations (Yamada 2000; Suttmeier and Yao 2004b, 18).

In a way, neo-techno-nationalism is a "pragmatic variant of techno-nationalism," where "states may adopt a mix of nationalistic and liberal policies in pursuit of national technological goals" (Kennedy 2013, 912). Likewise, neo-techno-nationalist countries can be classified as "techno-hybrid" cases, where "a limited form of techno-globalism" is pursued to achieve "explicit national goals" (Keller and Samuels 2003a, 12).

In some studies, national goals are defined in a relatively narrow sense by putting a specific emphasis on national security concerns. In this spirit, Johnson-Freese and Erickson

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(2006, 14–15) distinguish 'techno-nationalism' from 'techno-protectionism' by following Samuels (1994, 31). As the writers note, "techno-nationalism as a view of technology as the source of national security differs from 'techno-protectionism,' which implies an economically misguided plan to satisfy political interest groups or to support a discredited strategy" (Johnson-Freese and Erickson 2006, 14–15). The discredited strategy in question is the ISI of Latin American countries. China is said to reject this detrimental approach, since the country needs global cooperation to import and indigenize western technology. Therefore, China is said to subscribe to a form of neo-techno-nationalism (ibid.).

In fact, many studies classify different domains of Chinese technology policy as neo-techno-nationalist, whether they explicitly use the term (Suttmeier and Yao 2004b, 3; Shim and Shin 2016, 197), or observe a paradigm shift from techno-nationalism towards techno-globalism in the spirit of neo-techno-nationalism (Keller and Samuels 2003a, 12; Suttmeier, Yao, and Tan 2006, 2; Han 2009; Kwak, Lee, and Chung 2012, 966). Once again, government strategies and policy choices are commonly used to deduce whether policy-making is influenced by techno-nationalism (if protectionist), techno-globalism (if liberal), or neo-techno-nationalism (if mixture of protectionist and liberal).

Under these circumstances, a country's approach to technology policy can easily shift from techno-nationalism to techno-globalism, or from techno-nationalism to neo-techno-nationalism, in a relatively short period. The following quotation hints this understanding: "Reviewing the China's standard-setting trajectory, it was initially motivated by the techno-nationalistic cause but was developed to the directions to the techno-globalism in pursuit of making China's local standard into the global standard" (Han 2009, 33). In other words, while China's standard-setting strategy used to rely on protectionist policies, the country began to mix the policy bundle with liberal prescriptions later on. A similar logic is employed in a different study: "After the globalization in the 1990s, techno-globalism prevailed over techno-

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nationalism. Techno-globalism emerged in newly industrializing economies and was eventually adopted by China" (Shim and Shin 2016, 199). Here, techno-globalism is almost used as a synonym for a liberal policy package.

In some works, techno-nationalism and the related concepts are defined with an explicit reference to their ideological content. Edgerton (2007, 1) conceptualizes techno-nationalism and techno-globalism as "descriptors of underlying assumptions made by analysts of the place of technology in the world, to denote ideologies, rather than technological policies or realities," while observing the "unfortunate conflation of the two." Indeed, Edgerton's (2007) analysis sticks to this separation and questions scholars' ideologies who study technology-society interaction at the macro-level. In this context, while "techno-nationalism assumes that the key unit of analysis for the study of technology is the nation: nations are the units that innovate, that have R&D budgets and cultures of innovation that diffuse and use technology…techno-globalism holds that technology is turning the world into a 'global village' [and] nations is at best a temporary vehicle through which the forces of techno-globalism operate but are always about to disappear through the advance of globalizing new technology" (Edgerton 2007, 1).

Keller and Samuels (2003a, 9) refer to ideology while defining techno-nationalism and techno-globalism as well. As the writers note, "the ideological preferences of actors in the world of innovation and production systems and their fundamental assumptions about the value of indigenous research and development can be characterized ideal-typically as the difference between techno-nationalism and techno-globalism" (Keller and Samuels 2003a, 9). In this definition, ideology is directly related to actors' policy preferences, namely the state and the firms. Those preferences translate into policy choices and behavior, and those choices and behavior are then classified as techno-nationalist or techno-globalist.

At least two theoretical points can be derived from the investigation of techno-nationalism scholarship. First, governments can very-well pursue national goals (technology or

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security) by relying on liberal policies, protectionist policies, or both. Although scholars felt the need to assign adjectives or prefixes to the term 'techno-nationalism' to make this point, like 'pragmatic techno-nationalism' or 'neo-techno-nationalism,' they nevertheless concluded that nationalism and different policy packages can be compatible. Second, ideology is an important element of technological nationalism. Actors' perceptions and understanding of the world influences technology policy.

In fact, these two points are strongly underlined in scholarly debates on economic nationalism. More importantly, the way that economic nationalism scholars derive these conclusions has strong implications for the further elaboration of technological nationalism. Thus, a brief investigation of economic nationalism is in order.

2.1.2 From economic to technological nationalism: "Bringing the nation back in"

Economic nationalism is a grounded concept having a history of its own. For some, economic nationalism can be traced back to the 16th century in relation to the Europe's mercantilist era (Gilpin 1987, 31). For many others, economic nationalism began to be a subject matter only after three centuries, when an explicit effort to form macroeconomic government policy on behalf of the nation emerged during the 19th century (Greenfeld 2001, 107–14). As a term, 'economic nationalism' was first used during the interwar period and attracted much scholarly attention since then (Heilperin 1960, 17). Many scholars investigated the rise of economic nationalism in the late 19th century, its formulation and evolution in the aftermath of the Great Depression, and its institutionalization after the second world war (Pryke 2012, 285–90). In the last two decades, international political economists re-visited economic nationalism to sharpen the concept's analytical rigor. They placed a special emphasis on the 'nationalism' content of economic nationalism, and argued that national identities matter. This endeavor created lively debates in the literature and revealed essential theoretical arguments.

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Two main approaches to economic nationalism can be identified (Helleiner 2002, 308–11; Pryke 2012, 282–85). The first one belongs to liberal economists and realists within the international relations camp. In this approach, economic nationalism was first equated to any government policy that was in contradiction with the liberal understanding of economy and progress (Koffman 1990, 24). In practical terms, the concept was primarily "used by liberal economists to describe policies they did not like" (Helleiner 2002, 308–9). Later, economic nationalism began to be associated with protectionist policies more closely, which narrowed down the range of policies that were identified with economic nationalism (ibid.).

Equally importantly, this approach subscribed to a 'state-tool' understanding of economic nationalism, where economic nationalism was thought to portray the "central idea that economic activities are and should be subordinate to the goal of state building and the interests of the state" (Gilpin 1987, 31). The state was defined as the main agency that pursue the national agenda. Policies in the form of economic nationalism were needed to assist the state in its "struggle for supreme power in the anarchic world of international affairs" (Gilpin 1987, 14).

This conceptualization of economic nationalism is challenged by international political economists in the last two decades.[20] The main argument has been that the state-centric understanding of economic nationalism undermines the role of 'national identity' in the processes of policy formation (Crane 1998; Crane 1999). Thereby, it also undermines an essential element of economic nationalism. As argued, too much emphasis is being placed upon the state as an autonomous actor, so much so that the state is mistakenly conceptualized as an agency that can act on its own irrespective of the society in which it is embedded (Abdelal 2001). Detached from the 'shared national identity' that influences and drives policy choice, economic nationalism is being reduced to a mere 'state-tool' that can be single-handedly

[20] For a review see Helleiner (2002, 308–11) and Pryke (2012, 282–85).

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controlled by the state. Accordingly, all non-state actors' role in the processes of agenda-setting is being ignored, even though those actors exert influence onto policy-making processes via the constant regeneration of national identity. One might assume that a policy embodies the shared national identity, so there is no need to focus on the latter aspect of economic nationalism. As Crane (1998, 55) notes, however, although the "state and nation may overlap in various ways… national identity is not simply an expression of state interest."

Based on all these concerns, international political economists propose to "bring the nation back in" into the analysis of economic nationalism (Crane 1998, 55). They propose to go beyond the state-centric view of economic nationalism (Abdelal 2001), and derive economic nationalism from "national identities and nationalism" (Helleiner 2002, 310). In the words of Shulman (2000, 368), "instead of identifying nationalists as those who support a particular foreign economy policy, scholars should independently define nationalists, and then examine their foreign policy preferences both theoretically and empirically in the realm of international economic integration". With this shift in analytical focus, international political economists assert that economic nationalism can be identified with various policy packages, including liberal ones (Crane 1998; Crane 1999; Shulman 2000; Abdelal 2001; Helleiner 2002; Helleiner and Pickel 2005).

The compatibility of a national agenda with various policy prescriptions *with an emphasis on the 'national' content of technological nationalism* is also noted in some works on techno-nationalism (Keller and Samuels 2003a, 9–12). The second theoretical argument that we can reach via a brief re-visiting of economic nationalism scholarship is that *non-state actors play a role in policy formation since they collectively form the shared national identity*. This shared identity legitimizes and influences policy choices. In fact, while elaborating four national projects pursued in civilian technology in the US (supersonic transposs, civilian nuclear power, synfuels, and the super computer), Lambright, Crow, and Shangraw (1988, 71) observe:

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"national projects require a national interest. A national interest must be articulated by national political leaders, especially the President, and legitimated by Congress."

In line with the idea that nationalism is more about identity, but without making a direct reference to the above literature, Amir (2007) offers a quite different understanding of technological nationalism in comparison to the conceptualizations of techno-nationalism and neo-techno-nationalism. In the latter scholarship, techno-nationalism and techno-globalism is commonly derived from policy choices, although the influence of ideology on policy formation is elaborated in some studies (Keller and Samuels 2003a, 9–12; Edgerton 2007, 4–10). More importantly, however, the 'state-tool' understanding of nationalism seems to have dominated the discussions on techno-nationalism, techno-globalism, and even neo-techno-nationalism. The state is considered as the main actor that pursues a national agenda, irrespective of the society in which it is embedded.

In sharp contrast to the 'state-tool' understanding of techno-nationalism, Amir (2007) places a great deal of emphasis on the 'national' content of technological nationalism. To begin with, Amir (2007, 283) defines technological nationalism as "a form of ideology that functions at three levels: integration, legitimation, and distortion."[21] Integration is the unifying function of ideology, "whereby ideology works as a symbolic system that provides a network of templates through which a society identifies itself" (Amir 2007, 284). Distortion, on the other hand, refers to the exclusionary trait of ideology. In essence, distortion "results from [ideology's] tendency to limit choice by suppressing alternatives while at the same time overemphasizing specific choices as inevitable and natural" (ibid.). Therefore, there is a tension between the integration and the distortion functions of ideology (ibid.). While the former is neutral and inclusionary, the other one is political and exclusionary. The tension between the two is balanced by the legitimation function of ideology. Legitimation function "bridges the

[21] This understanding of ideology is borrowed from Paul Ricoeur (1986).

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neutral concept of integration and political concept of distortion," as ideology "legitimates the authority of the governing through the consent and cooperation of the governed" (ibid.). Relying on this understanding, Amir (2007, 284) defines technological nationalism as:

> Technological nationalism functions as a medium of integration that unites socially and culturally diverse people in a nationalist sentiment through the sublime of technological systems and artifacts…[it] dissolves both horizontal and vertical boundaries between people in which all national elements are homogenously fluid…technology is seen not merely as a physical object but is constituted by collective symbolism through which social and cultural materials such as language, histories, myths, and utopias are blended together.

In addition to its unifying character, technological nationalism legitimizes all technological undertakings that are carried out in the name of national interest (ibid.). The shared national identity creates the ideational space base on which policies are formulated. In this respect, technological nationalism can be used as a "rhetorical strategy" to attain political power by way of utilizing the shared identity to gain people's trust.[22] Being a rhetorical strategy, "technological nationalism evokes a feeling of pride, yet at the same time hinders people from being critical to the choices and actions of technological elites" (ibid.).

2.1.3 Technological nationalism, the absence of the opposition parties in analysis, and implications on the investigation of R&D policy-making processes

In technological nationalism scholarship, there seems to be an implicit assumption in regards to the state's role in the creation and implementation of technology policy. On the one hand, a 'state-tool' understanding of nationalism seems to dominate the debates on techno-nationalism and neo-techno-nationalism as noted. On the other hand, the state seems to be conceptualized as a *homogenous entity*, in the sense that the primary attention is placed upon *the ruling party or the executive* in analysis. Since either of the two has the effective power to create key legislation and direct the dominant discourse on technology policy in a country, they have

[22] The idea that technological nationalism is a rhetorical strategy goes back to Charland (1986), and Amir (2007) relies on Charland (1986) to make his point.

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attracted the main attention in investigation. This assumption also seems to follow from the nature of the cases at hand (such as studies on China), and some inquiries' specific focuses (such as the state's reaction to external threats).

Placing an exclusive emphasis on the ruling party or the executive in the examination of technological nationalism is only adequate, natural, and necessary. However, this kind of a one-dimensional focus faces the risk of missing an important element: *the role of the opposition in policy-making*. In many cases, coalitional governments are formed, and groups can have diverse perspectives on the content of science, technology, innovation, and R&D policy. Those divergences may have implications on policy-making directly or indirectly. *Even in the case of a single-party rule*, whereby the ruling party *has the power to enact legislation on its own*, the opposition's perception of, and approach to, innovation can still play a role in the formulation and implementation of innovation policy. This possibility cannot be ruled out at the outset.

In concrete terms, *as in the case of Turkey*, technological nationalism *may* influence innovation policy-making processes by shaping the opposition parties' stance on R&D policy. Although the opposition parties may hold significantly divergent views on R&D policy, and even promote a completely different legislation to organize R&D in a country, they may still support the party in power due to the symbolic meanings attached to innovation and R&D. In line with technological nationalism, the opposition may perceive innovation as a phenomenon that *cannot be opposed in any circumstances* –since innovation is thought to *fuel modernization, sustain a nation's independence, and reflect national dignity*. Similar to the case where technological nationalism hinders the society from being critical to the undertakings of technological elites (Amir 2007, 284), technological nationalism can hinder the opposition from being critical to the party in power. Thereby, the opposition's ideational stance on innovation (technological nationalism), *may hinder the deliberation of alternative policy choices in a country*. As Breznitz (2007, 4) notes, politics is "the art and profession of creating alternatives

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and the social struggles of choosing between, and acting upon, them." Thereby, the effective deliberation of alternative policy options, and technological nationalism's influence on the deliberation process, is an important element of politics.

2.1.4 Technological nationalism in Turkey

Based on the concise re-visiting of the scholarship in the previous sections, this dissertation takes side with scholars who argue that technological or economic nationalism *cannot be equated with a specific policy bundle*. In other words, nationalism does not necessarily imply a protectionist stance on economic or technology policy. Furthermore, a nationalist agenda *can very well accommodate a welcoming attitude towards foreigners*. In case international collobation is considered as a necessary step towards the accomplishment of a national goal, nationalists can promote foreign involvement in the domestic economy.

Equally importantly, this thesis promotes the idea that *the 'national' ingredient of technological or economic nationalism is crucial*, and technological nationalism *cannot be reduced to a mere 'state-tool.'* Although reflected as a policy choice eventually, technological nationalism is a form of ideology, which is also shared by non-state actors in a society. In fact, this 'shared understanding' among non-state actors influence the perceptions and behavior of political elites in policy-making.

In the Turkish context, technological nationalism is used as a concept that reflects the above traits. More than anything else, however, technological nationalism is said to influence policy-making *by shaping the opposition parties' stance on R&D policy*. As noted in the previous section, even though the opposition held quite different opinions on the design of R&D policy in Turkey, it supported the AKP on key R&D legislation. The opposition considered innovation (in abstract) not only as an indispensable ingredient of growth and development, but also as a primary source of *modernization, independence, and national dignity in a globalized*

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world. This stance of the opposition hindered the effective creation and deliberation of alternative policy options. These propositions are examined in detail in Chapter 4.

In regards to the investigation of technological nationalism's 'national' content, the empirical investigation provided in Chapter 4 has a certain limitation. To begin with, the chapter elaborates the overall climate in Turkey in regards to the perception of innovation. It documents the consensus in the country on the indispensability of innovation for growth and development. It goes over the general discourse on R&D by going through politicians' public statements and reactions to them, main business associations' documents, etc. Therefore, the chapter hints at where the irresistible nature of innovation and R&D comes from. However, the chapter does not *analytically* link this overall atmosphere to the opposition parties' certain reactions. In this regard, although the analysis is indicative about the 'national' content of technological nationalism, it rather focuses on the political elites' behavior in line with the main analytical stance of neo-techno-nationalism. Thereby, technological nationalism is but one explanation that is said to turn down the opposition's voice in the parliament –the others are: the institutional weakness of the opposition in R&D policy-making, and the opposition's invisibility in R&D policy-making processes.

2.2 The developmental state

Technological nationalism questions the political elites' perception of innovation, and its influences on policy formulation. Thereby, it constitutes an important layer of R&D policy-making process. Three questions further the investigation. First, how does the key R&D legislation comes into existence, and who takes part in the process? Second, once the legislation is enacted, how do the governing elites ensure the implementation of their preferences? Third, how does the government's interaction with other actors in the innovation system influences R&D policy?

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The above questions form the second layer of R&D policy-making processes: *the tug-of-war between the political leadership and autonomous innovation agencies*. On the one hand, the nature of the interaction among the executive and the bureaucracy conditions the preparation processes of key R&D legislation. On the other hand, the interaction determines to what extent the political elites have the power to actualize its policy preferences on the ground. In regards to these issues, the developmental state scholarship offers useful analytical concepts by mainly focusing on the domain of industrial policy.

2.2.1 The developmental state: Main research agenda

The developmental state scholarship emerged in the 1980s and the 1990s with the influential publications of Chalmers Johnson, Alice Amsden, Robert Wade, and Peter Evans (Johnson 1982; Amsden 1989; Wade 1990; Evans 1995). The main research agenda of the classics was to explain why some countries managed to industrialize successfully during the 20th century while some others failed to do so. The success stories in question were Japan and the 'Asian Tigers,' and the relative failures were other large developing countries such as Brazil and India. Since the 1990s, a growing body of work has contributed to the developmental state debate, and the framework has become one of the influential perspectives in political economy.

In the 1980s and the 1990s, two strains of the literature heavily influenced the classics and formed the subsequent analytical lens of the framework. On the one hand, the classics followed the tradition that turned a keen eye on the state's role in promoting economic growth and development. Two of the main representatives of that tradition were Alexander Gerschenkron and Albert Hirschman. While Gerschenkron (1962) illustrated how the state actively organized the financial markets to help the local entrepreneurs in the European late-comer context, Hirschman (1958) demonstrated how the state incentivized the private capital to make it more entrepreneurial in the Third World. Both scholars argued against the then-dominant neoclassical paradigm, which attributed a minimal role to the state in the development

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process. Heavily influenced by Gerschenkron and Hirschman, the classics took state intervention as given, and raised the question 'what kind' of state intervention is required to promote development, instead of the then-popular 'how much' intervention is needed (Evans 1995, 11).

On the other hand, the classics were influenced by the 'bureaucracy' conceptualization of Max Weber. As Weber (1922) illustrated, the bureaucracy plays an essential role in the functioning of an established market economy. Only in the presence of a bureaucratic structure the business' large-scale economic activities can be complemented and ignited. In Weber's analysis, the bureaucratic structure in question is an ideal-typical one. It has a hierarchical formation, and the bureaucrats' recruitment processes are based on meritocratic selection. Furthermore, the bureaucrats have the required expert training, and their skills and qualifications determine career paths. They decide based on written rules and reason; thus, they are rational and efficient. This ideal-typical bureaucracy maximizes efficiency by eliminating favoritism, as it has the will and the capacity to do so. In line with Weber's conceptualization of the ideal-typical bureaucracy, the classics assessed the states' internal structure and transformative capacity in the steering of development process.

Taken together then, the classics melted the two dimensions of the state in the same pot. By expanding on the works of Gerschenkron and Hirschman, the classics questioned 'what kind' of state intervention is needed to promote development by way of forging a productive relationship with the business elite. By expanding on works of Weber, they questioned 'what kind' of a state structure enables a constructive relationship with the business elite. With these in mind, the classics outlined the main tenants of the developmental state. Johnson (1982) disentangled the 'Japanese miracle' by elaborating the Japanese industrial policy; Amsden (1989) focused on the South Korean success; Wade (1990) illustrated the state's role in Taiwan,

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South Korea, and Japan; and Evans (1995) compared the experiences of Brazil, India, and South Korea.

The developmental states that were empirically observed by the classics, or the '20th century developmental states,' shared some core characteristics (Chibber 2014, 33–34; Öniş 1991). First, the developmental states had the ability to increase domestic savings to be able to fund large-scale investments ('extractive capacity'). Second, the developmental states' bureaucratic structure approximated to the Weberian ideal-typical one.[23] Third, a 'nodal agency' oversaw the related state organizations in the developmental states. This 'nodal agency' had the power to monitor and direct state agencies; thus, it secured the bureaucratic coordination. Last, the developmental states had dense and secure ties to the business elite. The already-capable state apparatus disciplined, directed, incentivized, and complemented the business.

In consequence, the developmental state has the 'internal' and the 'external' capacity to pursue the developmental goals. While 'internal' capacity is related to the state's autonomy vis-à-vis the business elite and the type of the bureaucracy, 'external' capacity is related to the state's fertile ties with the private sector. As mentioned, the initial framework is primarily derived from the successful experiences of Japan and the 'Asian Tigers' in the 20th century.

In the last three decades or so, the developmental state framework has attracted much scholarly attention. Its analytical lens is revised in many ways, and the framework is applied to different contexts. Both in the initial conceptualization and the later contributions, 'autonomy' and 'embeddedness' have been the two important analytical concepts of the framework. In this regard, the next section briefly re-visits the scholarship with an emphasis of the two concepts – their nuanced conceptualizations and implications on the subsequent focus of analysis.

[23] In regards to this, Evans and Rauch (1999, 748) note, "[a Weberian bureaucracy] significantly enhance[s] prospects for economic growth, even when [controlled] for initial levels of GDP per capita and human capital."

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2.2.2 Building blocks: Autonomy and embeddedness

In his *Embedded Autonomy: States and Industrial Transformation*, Peter Evans (1995, 43–73) constructs two ideal state types. The first one is the 'predatory state,' which does not have the required capacity to enhance development. Individual incumbents dominate the predatory state; whose private interests and personal ties steer the policy to overshadow the pursuit of socially-beneficial goals. The predatory state's internal structure is described as the "dearth of bureaucracy" (Evans 1995, 12). The second ideal type is the 'developmental state,' which plays a constructive role in promoting development. Its internal structure approximates to a Weberian bureaucracy, which creates "commitment and a sense of corporate coherence" to give the bureaucracy "a certain kind of autonomy" (ibid.) The state is not insulated from the society if it is developmental, but it is "embedded in a concrete set of social ties that binds the state to society and provides institutionalized channels for the continual negotiation of goals and policies" (ibid.). Thus, the developmental state has an 'embedded autonomy' (ibid.).

The way that the ideal types are constructed hints the definitions of autonomy and embeddedness. Autonomy refers to *the goal-setting and policy-making power of the state (political elites and bureaucrats) vis-à-vis the business elites*. The more the state is autonomous, the more its internal structure is robust. Embeddedness, on the other hand, refers to *the networks between the state and the business elites*. The more the state is embedded, the more the continuous negotiation of policies with the business increases the policy-making processes' effectiveness. This conceptualization of Evans (1995) reflects the classics' general logic (Minns 2006, 42–3).

Many later studies kept the classics' initial formulation. They defined the terms 'autonomy' and 'embeddedness' with respect to *the power-play between the state and the business*. In some cases, the business elite not only referred to the local ones, but also encompassed the foreign ones (O'Riain 2004, 30). This is labelled as 'multiple embeddedness'

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(ibid.). In other cases, the emphasis is placed upon the fact that the globally observed democratization waves have brought the previously excluded civil society to the fore; thus, the state is said to develop dense and secure ties *not only with the business, but also with the civil society in the contemporary world* (Williams 2014a, 12–18). This is labelled as 'expanded embeddedness,' and is said to pose a new challenge for the '21st century developmental states' (ibid.).

One study that follows the developmentalist tradition is noteworthy to mention in this regard. In his *The Politics of High-Tech Growth: Developmental Network States in the Global Economy*, Seán Ó Riain (2004) compares the 20th century developmental states (labeled as the 'developmental bureaucratic state') with that of the contemporary 'developmental network states.' In line with the general theme of the developmental state scholarship, O'Riain (2004) argues against the minimalist-state conceptualization of the neoclassical orthodoxy, and elaborates the state's active contribution to the development process.

In his analytical framework, O'Riain (2004, 30–33) re-defines autonomy and embeddedness to capture the particular experiences of Ireland, Taiwan, and Israel. As mentioned, international actors play an important role in O'Riain's (2004) analysis, as the contemporary developmental states function in an environment where the economies are deeply integrated in global investment and trade flows. Therefore, 'multiple embeddedness' is quite important in O'Riain's (2004) conceptualization. In the words of O'Riain (2004, 30), "the [developmental network state] is based on a multiple embeddedness in local and foreign capital and local – particularly professional – networks of innovation." This contrasts to the 20th century developmental states where state-society relations were "channeled primarily through ties between key state bureaucrats and domestic entrepreneurs and executives" (ibid.).

While elaborating his analytical framework, O'Riain (2004, 31–33) also discusses the hazards of 'overautonomy' and 'overembeddedness.' In the case of over-autonomy, the

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political leadership has such excessive power that it is not only insulated from the business, but also insulated from the technocracy. The Chilean regime under Pinochet is noted as a case in point (ibid.). In the case of over-embeddedness, "an appointive bureaucracy generates a political capitalism in which success and failure depend as much on effective political action as effective production...[which] is reinforced by the need to be involved in politics to be effective in business" (O'Riain 2004, 31).[24] Over-embedded polities are said to be "racked by clientelism, arbitrary personalism, and even corruption" (ibid.). Latin American countries are noted as a case in point.

Unlike the classics and many following works, the developmental state is sometimes conceptualized *only* in regards to *the state's internal structure*. Put differently, instead of elaborating the state's (political leadership and bureaucracy) 'autonomy' and 'embeddedness' vis-à-vis the business, some studies concentrated on the bureaucracy's 'autonomy' and 'embeddedness' vis-à-vis the political leadership. The change in perspective was necessary to address the context-dependent characteristics of the cases at hand.

In one recent study as such, 'autonomy' and 'embeddedness' is conceptualized only in regards to the state's internal structure. In her *State Structure, Policy Formation, and Economic Development in Southeast Asia: The Political Economy of Thailand and the Philippines*, Antoinette Raquiza (2012) does not focus on the business elites at all. One reason is that the business has always been dominated by the state in Thailand and the Philippines since from the beginning of the state formation. Thus, the business does not have the power to shape policy-making processes in these countries.

Furthermore, the socio-economic conditions under which Thailand and the Philippines operated were significantly different than the 20th century developmental states (ibid.). The agenda of the political leadership and the technocracy did not overlap in Thailand and the

[24] O'Riain (2004) refers to Schneider (1999, 296) while making this point.

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Philippines contrary to the cases of Japan and the 'Asian Tigers.' While the political leadership mainly focused on domestic development to attain state power, technocrats aimed at transforming the economy in line with the global trends in Thailand and the Philippines. Therefore, the essential tension is between the *political leadership and bureaucracy* in Raquiza's (2012) framework.

Accordingly, Raquiza (2012, 14–15) re-defines autonomy and embeddedness. On the one hand, autonomy questions "whether economic managers have relative autonomy from political leaders, or whether technocratically inspired development plans [is] subject to strong political interests and considerations" (Raquiza 2012, 15). On the other hand, embeddedness questions "whether or not [political leaders and technocrats] emerge from and operate within a strong institutional setting" (Raquiza 2012, 14). Thus, Raquiza (2012) turns a keen eye on the state's internal structure alone, and builds her analytical framework accordingly.

In some other studies, 'autonomy' and 'embeddedness' are defined in a more inclusive manner in comparison to the classics, by placing a special emphasis on the bureaucracy yet again. In one example as such, autonomy questions, "how well the bureaucracy protected its policymaking autonomy from populist political leaders...non-governmental organizations...trade unions...and...[the business]" (Hundt 2009, 7). Although the private sector is in the picture in this definition, the primary attention is placed upon the bureaucracy, and a potential tug-of-war between the political leadership and the bureaucracy is taken into consideration.

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2.2.3 Executive interference and influences on R&D policy in Turkey, and the assessment of the Turkish state's developmentalist turn in the R&D sector

As outlined in the introductory chapter, this thesis concentrates on the political economy factors that influence R&D policy-making processes. The central research question is, why did Turkish R&D policy change in the 2000s? In regards to the latter question, the tug-of-war between the executive and autonomous innovation governance organizations have been important in Turkey

during the 2000s, as the AKP's interventions in key innovation agencies have shaped R&D policy in many ways. Those influences are elaborated at length in Chapter 5 and Chapter 6, and the previous sections on the developmental state provide a theoretical background for those discussions.

As also noted in the introductory chapter, the empirical evidence provided in Chapter 5 and Chapter 6 provide a fertile ground for the assessment of the Turkish state's developmentalist turn in the R&D sector in the latter half of the 2000s. The demonstration of the developmentalist steps and their assessment are done in the concluding chapter. Once again, the previous sections on the developmental state provide a theoretical background for that discussion.

After having noted these, this section aims to further the discussion (i) by elaborating the recent turn in the scholarship in regards to the theorization of the developmental state, and (ii) by singling-out the dimensions of the developmental state that *have not been important* in Turkey within the context of the R&D sector during the 2000s.

To begin with, there is a recent tendency in the scholarship to part ways with the previous 'models' of the developmental state to be able to assess the changing socio-economic conditions of the 21st century adequately. Put differently, the recent works on the developmental state do not aim to generate 'models' that other countries need to emulate if the goal is to initiate a successful catching-up process. As already mentioned, even in the 20th century some countries faced socio-economic conditions that were significantly different from the early experiences of Japan and the 'Asian Tigers' (Raquiza 2012). Those differences required significant adjustments in the analytical lens (ibid.). Therefore, the recent goal has been to make the analysis more flexible, and focus on the context-dependent traits of the developmental state more seriously.

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This recent position that is adopted in regards to the theorization of the developmental state can be perceived as a reply to a powerful criticism that has been levelled at the developmental state framework via the following question: To what extent the findings of the developmental state literature are generalizable? In other words, to what extent the developmentalist strategy offers a viable agenda in contexts other than Japan and the 'Asian Tigers'? As underlined by critics, the states of Japan and the 'Asian Tigers' functioned under the peculiar external and internal environment of the 20th century. The states had authoritarian tendencies that were largely legitimized in the eyes of the citizens back then; the international organizations did not have substantive leverage over the states; and the 1980s' structural transformations had yet to emerge. However, there have been important changes in all these accounts in the course of time. For instance, the 1980s' global structural shifts influenced the South Korean developmental state itself. The South Korean state had begun to embrace neo-liberal policies from the 1980s onwards, and such policies were especially welcomed in the aftermath of the 1997 crisis (Pirie 2008, 8–10; Pirie 2005, 25). Therefore, some critics suspected that the developmental state (i) speaks only to a group of countries in Asia, (ii) valid for a narrowly-specified period, and (iii) is meaningful only under a set of peculiar socio-economic conditions (H. W. Yeung 2016, 27; Jayasuriya 2005, 383).

Faced with this strong criticism, the later developmental state scholars modified their arguments to be able to take the changing domestic and global conditions of the 21st century into account. In a recent edited volume, Williams (2014b) compared and contrasted the '20th century developmental states' with their 21st century counterparts by outlining a new agenda for contemporary developmental states. The previous quest for 'model' construction is also reconsidered. In the words of Williams (2014a, xxi), "the era of models of state action and structures is over and that new forms of country-specific developmental states must be forged." As noted also in a previous study, "forms of state developmentalism vary enormously across

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time and space in their developmental strategies and tactics, institutional and geopolitical foundations, social consequences, and the ensuing political possibilities" (O'Riain 2004, 15). Therefore, the recent emphasis is *not so much on 'model' construction*, but on the *substance or essence* of the developmental state.

In this regard, Chapter 5, Chapter 6, and the analysis conducted in the concluding chapter focus on the main building blocks of the developmental state, and assess the Turkish state's internal and external capacities accordingly. The theoretical background for those discussions are provided in the previous sections via the elaboration of 'autonomy' and 'embeddedness' concepts.

It is also important to highlight which dimensions of the developmental state *are not* examined in this thesis within the Turkish context to orient expectations. First, 'autonomy' *does not* question the tug of war between the state and the business within the context of this inquiry. The primary reason is the invisibility of the business in R&D policy-making processes.[25] As elaborated in Chapter 6, the business does not seem to be interested in technological upgrading in contrast to the common rhetoric in Turkey. The channels of business representation in policy-making are also under-institutionalized in the country.[26] Furthermore, as noted in the scholarship, the state's autonomy vis-à-vis the business has not been the main issue in Turkey historically. In contrast to many other developing countries, Turkey inherited a strong state tradition thanks to its Ottoman past (Heper 1985), and as noted by Öniş and Riedel (1993, 92), "if the idea of the 'autonomy' of the state has traditionally been strong in Turkey, the 'capacity' of the state to impose its conception of the national interest on everyone else has been correspondingly weak."

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[25] This comes from the interview data.
[26] To exemplify, TÜSİAD's request to include two additional members to technoparks' Assessment Board, who would be jointly nominated by civil society organizations that operate in the related fields and selected by the then Ministry of Industry and Trade, was not considered in 2008 by the government authorities.

Furthermore, terms like ‘expanded embeddedness’ are also *not relevant* within the context of this inquiry. On the one hand, even the business does not, and cannot, take part in policy-making processes in Turkey, let aside (other) civil society. On the other hand, international players do not seem to play a role in the shaping of R&D policy in Turkey. Although the levels of foreign direct investment have increased sharply during the 2000s, the leading international firms are still not interested in conducting serious R&D in Turkey. Thus, although a line of the literature highlighted how global context and global production networks have had important implications on the developmental state since the 1990s, and how the business played an active role in this process (H. W. Yeung 2016, 5–6; Perraton 2005, 102–4; Chibber 2014, 36), this dimension of the issue has not been important in Turkey, within the context of the R&D sector.

Consequently, while ‘autonomy’ refers to the *bureaucracy’s agenda-setting power vis-à-vis the executive* in this dissertation (mainly in regards to autonomous innovation organizations), ‘embeddedness’ questions *whether the key innovation agencies’ leading cadre are subject to change due to political interference*. These definitions echo Raquiza (2012, 14–15), as Raquiza (2012) also focuses on state structure without taking the business into consideration as elaborated.

2.3 Clientelism

The actors’ perception of innovation, and the dialogue between the governing elites and bureaucrats, shape technology and innovation policy as elaborated in the previous sections. In concrete terms, while technological nationalism influences political elites’ behavior and stance on R&D policy, the state’s internal structure determines how policies are designed and pursued on the ground. In addition to these two layers of policy-making, another important layer questions the ruling elites’ motivations in the formulation and implementation of R&D policy:

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Do governing elites engage in clientelistic relations, behave as populists, or rely on rational grounds in the allocation of R&D funds?

In fact, the possibility of clientelism is mentioned both in technological nationalism and developmental state scholarships. In some cases, clientelism can better explain policy formation processes than technological nationalism, or nationalistic rhetoric can be used as a strategy to cover up clientelistic relations. The governing elites' desire to stay in power and expand authority may lead them to engage in particularistic distribution of governmental support funds in exchange for political support. Therefore, clientelism is an important issue that needs to be addressed.

2.3.1 Clientelism and the related concepts

There is an overwhelming confusion regarding the precise definition of the terms clientelism, patronage, pork-barreling, vote-buying, rent-seeking, and corruption in the literature. While the confusion is partly stemmed from the fact that real-life complexities make it difficult to draw precise boundaries among similar concepts in practice, much of the confusion is nevertheless caused by conceptual stretching (Hilgers 2011, 569–72).[27] In many cases, the terms are used interchangeably even though there are nuances between them. The use of clientelism and patronage, clientelism and vote-buying, and clientelism and pork-barreling are among such cases.[28] In the best-case scenario, interchangeable application of the related concepts is justified prior to the analysis. Even in those cases, misuse of the concepts leads to confusion. Currently, the conceptual ambiguity is so prevalent that, the very first line of a recent work on clientelism is "the concept of clientelism has lost descriptive power" (Hilgers 2011, 567).

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[27] As an example for real-life complexities and their influence on the concepts, "in practice, it is difficult to find the boundary between pork barrel politics and clientelism when both involve precisely targeted material rewards in exchange for political loyalty" (Fox 2012, 5).

[28] For instance, the exchange of public sector jobs for political support is dubbed as clientelism instead of patronage in Robinson and Verdier (2013).

For sure, scholars are aware of the definitional issues, and many have attempted to account for the apparent definitional vagueness. Hilgers (2011) differentiates clientelism from vote-buying and corruption, Stokes (2011) defines clientelism in comparison to patronage and vote-buying, and Carroll and Lyne (2007) separates clientelism, rent-seeking, and pork-barreling from each other. Although such works propose a more structured perspective, they do not solve the problem. These and similar studies usually take different concepts to compare, and even though in some studies the very same concepts are elaborated, there is no coherence among them since each study focuses on a different dimension of the concepts at hand. Thus, such studies do not directly build on each other to overcome the definitional vagueness.

Despite the ongoing definitional issues, however, the concepts clearly share a common denominator that cannot be overlooked. In brief, clientelism, patronage, and alike terms refer to a *patron-client relationship*, whereby *the patron directs resources to his clients in exchange for loyalty and support*. Given this broad definition, one can differentiate the terms from each other in the following way.

Political clientelism "describes the distribution of selective benefits to individuals or clearly defined groups in exchange for political support" (Hopkin 2006, 2). While the particularistic benefits can be channeled to individuals like strong businesspersons, they can also be channeled to the electorate to mobilize electoral support. *Patronage*, on the other hand, is a form of clientelism. It specifically refers to the "practice of awarding jobs and employment in the public sector by governing parties to their members, supporters, and potential new followers" (Sayarı 2014, 657). *Pork-barrel politics* is also a form of clientelism, but the concept specifically refers to a scenario where geographic targeting of specific constituencies is taking place (Fox 2012, 5).[29] Benefits are paid to one or a few districts, but costs are shared across all

[29] Stokes (2011) does not consider pork-barrel politics as a form of clientelism. As the writer argues, in pork-barrel politics the "implicit criterion for the distribution of pork is: do you live in my district?" In clientelism, however, the equivalent criterion is "did you (will you) support me?" (Stokes 2011, 2).

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districts (Aldrich 1995, 30). *Vote-buying* is also a form of clientelism, but "whereas clientelism involves the dyad's inferior member [client] giving electoral support broadly construed, including her own vote and efforts to secure for the patron the votes of others, vote buying is a more narrow *exchange of goods (benefits, protections) for one's own vote*" (Stokes 2011, 3–4).

Originated as an idea in the work of Gordon Tullock, and got its label from Anne Krueger, *rent-seeking* is another widely-used concept that is sometimes associated with clientelism (Tullock 1967; Krueger 1974). In general terms, rent-seeking refers to a process whereby interest groups lobby governments for privileges. By exerting their influence onto the policy-making processes, and capitalizing on governments' power to create rents in the economy (via restrictions imposed on the economic activity), interest groups aim at increasing their wealth share without necessarily engaging in productive activities. Thereby, *one facet of clientelism can be rent-seeking if the resources are allocated to interest groups in exchange for political support*. As Hicken (2011, 303) notes, "in terms of governance and economic performance, clientelism is clearly linked to higher levels of rent seeking...that clientelism, and associated rent seeking, may proceed hand in hand with strong growth."

In some cases, rent-seeking and clientelism can involve or lead to outright *corruption*. In fact, clientelism may fuel corruption (Singer 2009, 1). To make an analytical distinction here, if clientelistic or rent-seeking relations are carried out via illegitimate exercises of power (not amendments, not repeated and targeted changes in regulations, etc.), then the processes turn into illegitimate acts of political corruption. As Boratav (2016, 7) notes, "rent-seeking, per se, does not involve illegal and criminal behaviour. In the typical case, existing legislation and by-laws are not explicitly violated, but private rent-seekers use the existing gaps and available flexibility merely to benefit from positions of advantage. When the former act in collusion with public authorities and when sharing the spoils is involved, rent-seeking is transformed into corruption and becomes illegal and criminal." Thus, although the distinctions between rent-

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seeking, clientelism, and corruption seem neat in theory, real-life is complex, and one can easily face a scenario where a 'legitimized corruption' is taking place.

In regards to this last point, rent-seeking, clientelism, and corruption are also related to perceptions –*how actors perceive and make sense of the terms in a society*. In fact, one question that has increasingly occupied the research agenda of scholars who specialized in corruption studies at the turn of the new millennium is, "are there universal values that can be agreed upon across country borders and cultures that will serve to minimize corruption? Can we in the 21st century arrive at a global ethic?" (Ryan 2000, 332). Although it is difficult to provide an encompassing answer to these questions, it is clear that many acitivities that can be easily denoted as corrupt (in abstract) might not be perceived as such in different countries and contexts. For instance, as Biddle and Milor (1997, 284) note, "in some nations...(Turkey...is an illustration), public-private cooperation involving narrow legal and regulatory changes that benefit a small number of parties may not only be legal but also regular institutionalized behavior and therefore not corrupt."

The definitional nuances are essential, and would form the central theme of a study that would aim at formal theory-building. For the purposes of the current inquiry, a brief elaboration of the issue suffices, as it reveals two essential theoretical points based on which the empirical investigation is conducted within the Turkish case (Chapter 6). First, *clientelism refers to a scenario where R&D funds and benefits are distributed to individuals or groups in exchange for political support*. Second, *clientelistic relations have an exclusionary character, in the sense that while the selective allocation of the resources benefits friends, it punishes foes and non-compliers*. In other words, not everyone benefits from governmental resources. As elaborated in detail in Chapter 6, this exclusionary character of the allocation has been a defining trait of Turkish politics in regards to many policy fields.

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2.3.2 Clientelism and 'controlled neo-populism' in Turkey

At this point, one might ask what happens when friends benefit from the allocation via favoritism, but this does not lead to the foes' exclusion from the distribution? Put differently, what happens when all segments of the society have access to governmental resources, but some friends secure their share via rent-seeking also? Or, what happens when the government allocates resources based on the implicit logic of recruiting new clientele, but this motivation does not necessarily exclude the foes from the distribution?

This kind of an allocation strategy is argued to be an element of *populism* in this dissertation. In the Turkish context, this strategy is claimed to be a part of 'controlled neo-populism,' a term that is put forward by Öniş (2012). As Öniş (2012, 135) notes while examining the political economy factors that have paved the way for the AKP's unparalleled electoral success in Turkish politics during the 2000s (without including the R&D sector), "[the AKP]…made effective use of a variety of formal and informal redistributive mechanisms [during the 2000s]…to enlarge its electoral coalition…which [can be] referred as 'controlled neo-populism.'" As Öniş (2012, 141) further notes:

> One of the strengths of the AKP lay in its ability to employ both informal and formal redistributive tools to enlarge its base of electoral support. Redistributive mechanisms have been critical to its ability to bring the winners and losers of neo-liberal globalization into the orbit of one single, broad-based, cross-class electoral coalition.

Here, the important point is that 'controlled neo-populism' includes *both informal and formal channels of distribution*, and *does not necessarily exclude certain segments of society from the allocation*. This is what separates 'controlled neo-populism' from strict clientelism. In fact, Öniş (2012, 141) makes this separation explicitly without using the term clientelism:

> Critics of the AKP argue that the AKP's approach to redistribution has been fundamentally in line with the neoliberal style redistribution, which emphasizes private compassion and informal networks at the expense of formal, state-based forms of redistribution…[leading to] a particularistic form of redistribution that by definition favors insiders close to the party's informal networks...this form of redistribution is…exclusionary in the sense that those segments of society, which fall outside the scope of these informal communities or networks would fail to receive entitlement to these

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> benefits…there is a strong element of truth in this criticism…[but] what this critique misses…is that redistribution through formal channels also assumed significant proportions during the AKP era, with large increases in government expenditures in the realms of health and education.

On this note, additional points need to be made to be able to label the AKP's R&D fund allocation strategy as 'neo-populist.' This includes, (i) the compatibility of the AKP's approach to R&D fund allocation with the party's overall neoliberal agenda (especially in the early years), and (ii) flexibilizations in resource allocation criteria and lowering of expectations on R&D investments *in the face of major monitoring and steering problems* and the *dominance of a top-down policy-making approach* (executive interference with key innovation agencies). All these issues are elaborated in detail in Chapter 5 and Chapter 6 –alongside a further examination of the 'controlled neo-populism' concept.

2.4 Concluding remarks

This chapter has offered a comprehensive framework for the investigation of *political economy factors* that influence *R&D policy-making processes*. The main objective has been to break down the multi-dimensional character of R&D policy-making, and question the factors that influence the creation and implementation of R&D policy. The framework has aimed at providing a theoretical background for the empirical analysis conducted throughout the subsequent chapters.

The comprehensive framework has addressed three different layers of R&D policy-making process by relying on the theoretical arguments of technological nationalism, developmental state, and clientelism scholarships. While technological nationalism inquired the ideational dimension of R&D policy-making, the developmental state offered key analytical terms to conceptualize the state's internal structure. The discussion on clientelism and the related terms questioned the motivations of the ruling elite in the steering of R&D fund

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allocation. The previous sections briefly re-visited each literature, elaborated their influence on R&D policy-making, and noted how they are related to the Turkish context.

This section concludes the analysis by discussing how the comprehensive framework encompasses some of the political determinants of innovation policy that are outlined in the introductory chapter (Section 1.2). As mentioned, the number of veto players (Doner, Hicken, and Ritchie 2009, 156–61), fragmentation of political power (Mogee 1988, 40–42; Feller 1988, 108), external threats (Doner, Hicken, and Ritchie 2009, 161; Mogee 1988, 41), resources available to political elites (Doner, Hicken, and Ritchie 2009, 161), structural factors (Doner and Schneider 2016, 611), the presence or absence of strong business interests (Merrill 1988, 52; Berman 1991, 33), ruling parties' 'ideological consistency' (Berman 1991, 31–32), competing bureaucratic interests (Berman 1991, 34–35), and the politics of budgetary policy (ibid.), are all cited as important political determinants of innovation policy.

To begin with, this thesis *does not* aim at explaining the origins of 'good economic institutions'; thus, the political factors that are deemed to be important in this regard are not important within the context of this inquiry (Section 1.3.2). These include the presence or absence of external threats, the availability of resources to political elites, and structural factors. Furthermore, the politics of budgetary policy is also not important, since (i) the main emphasis is placed upon the *design of R&D policy* rather than the amount of funds allocated to the R&D sector in this thesis, and (ii) even when the 2008 global crisis hit the economy, the Turkish governments had *continued to prioritize and allocate more resources to R&D* (Chapter 3).

However, the absence of an effective veto player, centralization of political power, the absence of strong business interests, competing bureaucratic interests, and the ruling parties' 'ideological consistency' have been important within the Turkish context. These dimensions are captured as a part of a broader concern in this dissertation. First, the absence of an effective veto player is directly related with the terms 'autonomy' and 'embeddedness.' As mentioned,

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while ‘autonomy’ refers to the *bureaucracy’s agenda-setting power vis-à-vis the executive* in this dissertation (mainly in regards to autonomous innovation organizations), ‘embeddedness’ questions *whether the key innovation agencies’ leading cadre are subject to change due to political interference*. As Chapter 5 demonstrates, the executive’s continuous intervention in key innovation agencies led to changes in the leading cadre of those agencies, and led to a shift in the agencies’ stance on R&D policy. In other words, the bureaucracy’s lack of autonomy and embeddedness undermined its veto power.

Second, the *pluralistic and fragmented nature* of the political system and the subsequent *conflict among interest groups* made it *difficult to reach consensus* on innovation-related matters in the US (Mogee 1988, 40–42). The political structure also made it easy for actors to *block change*. This is related to the number of effective veto players in the political economy, and the terms ‘autonomy’ and ‘embeddedness’ capture this dimension as well. Furthermore, as Chapter 5 and Chapter 6 indicate, the Turkish political system has been just the exact opposite of pluralism and fragmentation during the 2000s, since the strong single-party governments have ruled the country.

Third, the business’ involvement in policy-making processes is one dimension of the developmental state, and although this dissertation primarily focuses on the state’s internal structure (political leadership vs. bureaucracy), the absence of strong business interests in technological upgrading in Turkey is discussed in the concluding chapter. In addition, while discussing the issue of clientelism in the R&D sector in Turkey, Chapter 6 elaborates how the business’ lack of interest in serious R&D has contributed to the apolitical character of the R&D sector (in regards to clientelist relations). Fourth, the developmental state framework also covers the competing bureaucratic interests via the investigation of bureaucratic coordination (Chapter 7). As mentioned, the absence of bureaucratic coordination in the innovation system has led to a proliferation of governmental support programs in Turkey (Chapter 7).

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Last, ‘ideological consistency’ has also been important within the Turkish context. In short, ‘ideological consistency’ questions if a policy is consistent ideologically with the broader agenda that is pursued in a political economy by a political actor (Webber 1986, 545–46). ‘Ideological consistency’ is said to affect a policy’s chances of approval and implementation in the political economy. Berman (1991, 31–33) highlights the importance of ‘ideological consistency’ in the domain of innovation policy. In Turkey, the AKP’s horizontal R&D policy design has been ‘ideologically consistent’ with the party’s broad neo-liberal agenda –especially in the initial years. The framework outlined in this chapter does not cover this dimension of the process, but the issue of ideological consistency is elaborated in the concluding chapter.

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CHAPTER 3: Party Differences on R&D Policy in Turkey

Do political parties have differing views on R&D policy in Turkey? What is the AKP's position on R&D policy, including *sectoral and geographical distribution of governmental resources*? How do opposition parties approach to R&D fund allocation? Is there a consensus among political parties, or are there divergences? In case there are divergences, are they substantial? The scholarship on the Turkish political economy remains silent on these questions.

This chapter aims to make an introduction to the study of R&D policy-making processes in Turkey by demonstrating the fact that *political parties do have differing stances on R&D policy in the country*. In Turkey, many believe that none of the opposition parties have a ground-breaking R&D vision that is based on evidence and institutionalized policy-making.[30] This observation is accurate (Chapter 4). However, *this does not mean that the opposition parties share the AKP's views on R&D policy*. In sharp contrast to the common assumption, *the opposition parties do envisage a different path for R&D policy in Turkey*. This includes *sectoral and geographical distribution of governmental support funds*, and the *overall administration of the R&D sector in the country*. This finding is essential, since it paves the way for important follow up questions that are elaborated in Chapter 4 and Chapter 6.

The rest of the chapter is organized as follows. Section 3.1 briefly reviews the main science, technology, and innovation (STI) indicators of Turkey during the AKP period. The section also outlines the AKP's horizontal R&D policy design. Section 3.2 turns a keen eye on a neglected bill on technoparks in Turkey. Section 3.3 demonstrates political parties' opposing views on R&D policy by examining key R&D legislation and the relevant parliamentary debates. The section especially attracts attention to the fact that the Republican People's Party's (CHP) views on R&D policy especially contradict with that of the AKP's. Section 3.4 concludes.

[30] This claim is based on the interview evidence.

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3.1 Main science, technology, and innovation (STI) indicators and R&D policy in Turkey during the AKP period

Since the AKP came to power in 2002, there have been major improvements in the main STI indicators of Turkey. The *resources allocated to R&D increased dramatically*, in line with the favorable macroeconomic climate of the post-2000 era. First, *gross domestic expenditure on R&D as a percentage of GDP* (R&D intensity) showed a *salient upward trend* in comparison to the 1990s (table 2). R&D intensity crossed the 1 percent threshold in 2014, which had been a long-lasting goal of the Turkish state.[31] Whereas the level of R&D intensity was 0.33 percent in 1990, it was only 0.53 percent in 2002 when the AKP came to power (table 2).

Second, *the private sector's role in the R&D sector has increased visibly* thanks to the encouragement and support of the AKP governments. For instance, while 20.4 percent of the gross domestic expenditure on R&D (GERD) was performed by the private sector in 1990, this share was only 28.7 percent in 2002 (table 2). In 2013, the private sector performed 47.5 percent of GERD. Likewise, whereas the private sector only funded 36.2 percent of GERD in 2004, this share increased to 50.9 percent in 2014.

Third, there have been *important increases in the number of R&D personnel throughout the 2000s*. To exemplify, R&D personnel per 10.000 total employment increased from 14 to 45 during 2002-2014 (table 2). Last, there have also been *noteworthy increases in patent numbers*. The number of patents granted by the Turkish Patent Institute increased to 8530 during 2002-2014 from its initial level of 1784. Overall, the AKP governments heavily invested in R&D, and the main STI indicators of the country have improved accordingly.

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[31] See *Turkish Science and Technology Policy 1993-2003*.

Table 2: Main science, technology, and innovation (STI) indicators of Turkey.

	1990	2002	2006	2010	2012	2014	2015	**OECD Total 2013**
R&D intensity (%)	0,33	0,53	0,6	0,84	0,92	1,01	1,06	2,37
GERD performed by business enterprise sector (%)	20,04	28,7	35,60	42,50	45,10	49,80	-	68,06
GERD performed by government sector (%)	9,8	7	11,2	11,4	11	9,7	-	11,26
GERD performed by higher education sector (%)	69,8	64,3	53,2	46	43,9	40,5	-	18,30
GERD funded by industry (%)	-	40,9	44,3	45,1	46,8	50,9	50,1	60,59
GERD funded by government (%)	-	50,6	34,6	30,8	28,2	26,3	27,6	28,35
GERD funded by higher education (%)	-	-	15,7	19,6	21,1	18,4	18,1	
Full-time-equivalent R&D personnel (*1000)	14	29	54	82	105	115	122	
Full-time-equivalent researcher (*1000)	11	24	43	64	82	90	95	
R&D personnel per 10,000 total employment	-	14	27	37	44	45	46	
Researchers per 10,000 total employment	5	11	21	29	34	35	36	80
Number of scientific publications	-	-	15.254	23.072	25.501	27.276	-	
Rank of Turkey with respect to publications*	-	-	20	17	18	19	-	
# of Patent applications to Turkish Patent Institute	-	-	5.165	8.343	11.559	12.375	13.958	
# of Patents granted by Turkish Patent Institute	-	-	4.305	5.510	7.816	8.530	10.100	
Global innovation index ranking	-	-	-	67 (132)	74 (141)	54 (143)	58 (141)	

Source: TurkStat, TÜBİTAK, OECD, and Global Innovation Index.
* Thomson Reuters Citation Databases (WoS-InCites) (TÜBİTAK ULAKBİM).

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In addition to main STI indicators, *the governmental resources channeled to the private sector with the aim of promoting R&D* increased dramatically during the AKP period. To begin with, the funds allocated by TÜBİTAK more than quadrupled during 2002-2014 from 67.4 million TL to 301.4 million TL.[32] TÜBİTAK budget increased significantly as well, despite the 2008 global economic crisis. This situation attracted the European Commission's attention, and was put forward in *Turkey 2009 Progress Report* (2009, 78): "the national level of R&D support has increased sharply over the last few years and has been maintained despite the economic crisis...an additional €100 million were allocated to...[TÜBİTAK] in 2009, thus increasing its 2009 budget by 36%."

Alongside the overall increase, the share that small-and-medium sized enterprises (SMEs) got from the increasing TÜBİTAK resources vis-à-vis large firms skyrocketed with a smooth nine-fold increase during 2002-2012 (TEYDEB, 2013). What this corresponds to is, while SMEs had been getting 37 percent of the funds during 2002-2006, this ratio increased to 51 percent during 2007-2012 (ibid.). Two programs were particularly important in this respect. The first one was the *Industrial R&D Projects Grant Program*. Via this program, approximately 2.556 million TL was allocated to the private sector during 1995-2012 (ibid.). Firms in all sizes and all sectors had been eligible to get this support. The SMEs' share in this program had increased to 54 percent during 2007-2012 from the average of 33.5 percent during 1996-2006. The second program was the *SME RDI (Research, Development & Innovation) Grant Program*. Via this program, 348.1 million TL was allocated to SMEs during 2007-2012 (ibid.).

In regards to the funds' spatial distribution, an increasing number of cities have involved in the allocation process during the 2000s (figure 1). However, the big cities continued to get the lion's share of the benefits. For instance, 30.6 percent of the total fund was allocated to Istanbul alone during 1995-2012. Ankara got 20.4 percent in the same period, followed by

[32] The numbers are in 2012 constant prices. TEYDEB, *TÜBİTAK Özel Sektöre Yönelik Ar-Ge ve Yenilik Destek Programlarına İlişkin İstatistikler*, (2013).

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Bursa, Kocaeli, and Izmir with 15.4 percent, 12.1 percent, and 4.7 percent respectively. This situation mirrored the fact that many firms had been operating in the big cities.[33]

Figure 1: Spatial Distribution of Supported Projects by TÜBİTAK during the 2000s.

Source: Prepared based on TEYDEB, *TÜBİTAK Özel Sektöre Yönelik Ar-Ge ve Yenilik Destek Programlarına İlişkin İstatistikler*, 2013.

Another organization that allocates funds to the private sector in Turkey is KOSGEB. KOSGEB solely focuses on SMEs. In 1990, the size of the KOSGEB support fund was 0.6 million TL (Ulusoy and Akarsu 2012, 115). The fund's size increased during the 1990s and reached 11.6 million TL in 2002 (ibid.). With an amendment in the KOSGEB law, the organization's budget skyrocketed to 171.7 million TL in 2003. KOSGEB's realized support budget increased from 93 million TL in 2005 to 348 million TL in 2014 (KOSGEB 2014, 29).

During 2012-2014, 7.18 percent of the support fund was allocated to refundable support programs, 13.71 percent to interest subsidy loans, and the remaining 79.11 percent to non-refundable support programs (KOSGEB, 2014 –own calculations). Thus, *the bulk of the support budget was utilized in the form of non-refundable support programs*. It is important to note that *a large proportion of the KOSGEB budget goes to support programs*. For instance, 69.82

[33] For instance, 36.3 percent of project applications came from Istanbul during 1995-2012 (TEYDEB, 2013). Ankara followed Istanbul with 18.8 percent, Kocaeli with 7.7 percent, Bursa with 7.5 percent, and Izmir with 7.2 percent. The concentration of funds in the big cities did not change drastically during the 2000s, although there have been improvements in the spatial coverage of TÜBİTAK support funds.

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percent of the budget was allocated to such programs during 2012-2014 (KOSGEB, 2014 –own calculations). Including all support schemes, KOSGEB allocated 2357 million TL to the private sector during 2005-2014.

The spatial distribution of KOSGEB support mimicked the TÜBİTAK case. Although geographical coverage has widened during the 2000s, the big cities continued to get the lion's share of the incentives. For instance, 43.5 percent of the total fund was allocated to Istanbul (29.7 percent), Ankara (8.9 percent), and Izmir (4.7 percent) in 2009 (KOSGEB 2009, 25–6, own calculations). The spatial coverage of the distribution widened in the following five years, as approximately 33.3 percent of the total fund was allocated to Istanbul (19.7 percent), Ankara (9.3 percent), and Izmir (6.1 percent) in 2014 (KOSGEB 2014, 39). While the Marmara region got 34.7 percent of the total fund, Central Anatolia Region got 19.1 percent, and Aegean Region got 12.1 percent in 2014 (ibid.). In regards to policy design, *there has been no strong concentration on certain sectors or regions*.

The MoSIT also runs programs to support business R&D and innovativeness in Turkey. Being one of the most important ones, the Ministry is responsible from the *R&D centers*. R&D centers have begun to be founded by the private sector in Turkey in accordance with the commonly known 'R&D law.' Enacted in 2008, the R&D law regulates R&D centers. The firms that employ at least fifteen full-time-equivalent R&D personnel have the right to establish a R&D center, and benefit from various tax and other incentives.[34]

The number of R&D centers has proliferated spectacularly since 2008, and the Ministry has approved majority of the applications. Until July 2012, 163 center applications were made to the Ministry, and 134 of them were approved. Five applications were rejected later. Thus, 129 R&D centers were in operation as of the date of 26 July 2012. Then, in less than four years,

[34] In 2008 when the law was enacted, the required full-time equivalent R&D personnel to establish a R&D center was fifty. This requirement was reduced to thirty via an amendment in 2014, and was further reduced to fifteen in 2016.

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the number of centers increased more than 1.5–fold. As of February 2016, 218 R&D centers were in operation (MoSIT 2016). Between 2008–2010, the centers employed 14.837 R&D personnel, and made 4.8 billion TL worth of R&D expenditure. Currently (December 2016), 300 R&D centers are in operation. The AKP government's current vision is to increase this number first to 500, and then to 1000.[35]

In regards to geographical distribution, there has been a concentration in the big cities. For instance, 28.44 percent of the centers were in Istanbul, 14.22 percent in Bursa, 13.76 percent in Kocaeli, 11.47 percent in Ankara, and 8.76 percent in Izmir, as of the date of February 2016 (ibid.). All firms in all sectors could establish a R&D center; therefore, the law did not have any sectoral or geographical focus by design.

In addition to R&D centers, the Ministry is also responsible from technoparks in Turkey. Like the Silicon Valley, technoparks are infrastructural investments that aim at promoting R&D and innovativeness by forging dynamic interactions among the state, the private sector, and the universities. The primary goal is to transfer the theoretical knowledge generated and accumulated withinin the universities to the market. By establishing the parks within the borders of a university or a higher learning organization, R&D and innovativeness is tried to be enhanced by exploiting geographical proximity.

Technoparks were first brought to the politician's agenda in the late 1980s in Turkey. At first, the public was informed about technoparks by government officials via meetings and publications (Babacan 1993, 185). Then, the issue took its place in the 1989 Program of the Fifth Five-Year Development Plan (1985–1989). The later plans also covered technoparks (Keleş and Tunca 2010, 5). During 1-15 March 1990, Rustam Lalkaka and Norman Schiff, two technopark experts from the United Nations Fund for Science and Technology for Development (UNFSTD) visited Turkey as the invitees of the then State Planning Organization (SPO) (ibid.).

[35] The public statement of Faruk Özlü, the Turkish Minister of Science, Industry, and Technology (2 December 2016).

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The experts conducted research on potential technopark sites in Turkey, and a project was signed between the UNFSTD and the Turkish government on November 1, 1990 labeled as "A Program for the Establishment of Technoparks in Turkey" (ibid.).

As an outcome of the project, five technoparks in total were decided to be established in Istanbul Technical University (ITU), Middle East Technical University (METU), Ege University, Anadolu University, and TÜBİTAK Marmara Research Center (TÜBİTAK-MAM) (ibid.). A total of 107.965 USD was devoted to the project; nearly 45 percent covered by the UNFSTD and the remaining 55 percent covered by the Turkish government (Babacan 1993, 185). In 1994, only three of the planned technoparks were in operation; METU and ITU with approximately 30 tenants, and TÜBİTAK-MAM with 8 tenants.[36]

One major problem of technoparks during the 1990s had been the absence of a legal framework. There was no comprehensive regulation that defined the establishment and working procedure of technoparks. This problem was repeatedly underlined in the main policy documents starting with the year 1990 (TÜBİTAK 1990; 1995; 1997).[37] Then, in the mid-1996, the then Ministry of Industry and Trade (MoIT) prepared a draft technopark law in communication with the relevant organizations and presented it to the Prime Ministry. The Prime Ministry returned the draft to the MoIT for re-evaluation after consulting governmental bodies and stakeholders. Meanwhile, a by-law regulating technoparks was brought into force by KOSGEB on 15 April 1997. The by-law was said to fill an important gap until the technopark law was enacted. The long-awaited 'Technopark law,' or the 'Technology Development Zones Law,' was enacted in 2001. Technoparks obtained legal status under this law.

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[36] TÜBİTAK (1994), Türkiye Üniversite-Sanayi İşbirliği Birinci Şurası, Üniversite-Sanayi İşbirliğinin Geliştirilmesi, Strateji Tasarımı ve Uygulama Modelinin Ortaya Konulması Alt Komisyonu Raporu.
[37] TÜBİTAK (1990), I. Bilim-Teknoloji Şurasında Ortaya Çıkan Öneriler; TÜBİTAK (1995), Yüksek Planlama Kurulu'nca VII. Beş Yıllık Plan Döneminde Öncelikle Ele Alınması Öngörülen Temel Yapısal Değişim Projeleri Kapsamındaki BİLİM ve TEKNOLOJİDE ATILIM PROJESİ Çalışma Komitesi Raporu; and TÜBİTAK (1997), Türkiye'nin Bilim ve Teknoloji Politikası ve Tübitak'ın Misyonu.

In sharp contrast to the 1990s, the 2000s have been the years of technopark boom in Turkey. At the turn of the decade, the previously established technoparks were legally re-founded. Then, technopark numbers proliferated in a remarkable fashion with the active support of the AKP governments. While there were only two technoparks in 2001, the number increased to twenty in 2005; and forty-three in 2011. As of January 2016, there are sixty-three technoparks throughout the country. While forty-one of the parks are operational, twenty-two of them are at the stage of infrastructure investment. Mirroring the increase in technopark numbers, the number of on-park firms have increased rapidly during the 2000s. While there were only 169 on-park firms in 2003, the number increased more than five-fold within five years and reached 1154 in 2008. In September 2014, on-park firms' number was 2956 –employing 29.903 personnel in total (MoSIT 2014).

Firms in any size and any sector have the chance to operate on a technopark in Turkey. The policy *does not have a strategic or geographical focus by design*. In practice, 99 percent of on-park firms are SMEs in Turkey (Özbek 2008, 54). The information and communication technology (ICT) and software firms dominate the parks, as 57 percent of the on-park firms are in the ICT and the software sector (MoSIT 2014). Today, clear signs hint at further technopark proliferation in Turkey. The AKP government's currect vision is to expand the parks' scope by encouraging their establishment within the organized industrial zones (OIZs). Since almost all technoparks are founded within a university campus, and the number of the zones is on the rise, this shift in perspective is likely to give birth to an additional wave of technopark boom in Turkey. A second issue signaling the proliferation is the recent changes in the legal framework. With an amendment in 2011, the duration of exemptions and incentives provided to parks are extended to 2023 –with additional advantages on board.

In regards to the park's spatial distribution, nineteen parks in total are in the three most developed cities in Turkey. Eight parks are in Ankara, seven in Istanbul, and four in Izmir.

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There are also four parks in Kocaeli. The rest are scattered throughout the country, each city having one park within its borders (figure 2). It is important to note that sixteen parks in Turkey are members to the International Association of Science Parks and Areas of Innovation (IASP) as of the date of July 2016.[38] Twelve of those parks are also in the big cities.

Figure 2: Geographical distribution of Technoparks in Turkey in 2001, 2005, and 2014.

Source: Prepared based on the public information provided by MoSIT.

When we look at the resources channeled to technoparks, a total of 34 million TL direct subsidy was allocated to the parks for the purposes of infrastructure investment by the MoSIT during 2002–2008 (DDK 2009 –own calculations).[39] At that time, there were thirty-one parks in total. While eighteen of those were in operation, nine of them had their founding company but had not started their operations yet. Four parks did not even have their founding company. Among the operational parks, six of them did not receive any direct subsidy from the Ministry. Five of

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[38] Follow the link below (accessed July 1, 2016).
http://www.iasp.ws/by-country?p_auth=8nPRDJon&p_p_id=iaspmembers_WAR_iaspmembersportlet_INSTANCE_wNph0wDT9mLy&p_p_lifecycle=1&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_count=1&_iaspmembers_WAR_iaspmembersportlet_INSTANCE_wNph0wDT9mLy_javax.portlet.action=getMembersByCountry&countryCode=TR

[39] Cumhurbaşkanlığı Devlet Denetleme Kurulu (2009), *4691 sayılı Teknoloji Geliştirme Bölgeleri Kanunu Uygulamalarının Değerlendirilmesi ile Uygulamada Ortaya Çıkan Sorunların Çözümüne İlişkin Öneri Geliştirilmesi*.

those were in the big cities.[40] Among the non-operational parks, four of them received subsidy. The amount of the subsidy that each park received varied. In total, the parks that were in the big cities got 32.73 percent of the direct subsidy.[41]

As noted before, various tax incentives are provided to on-park firms in Turkey via the 'Technopark law.' During 2002–2008, a total of 923 million TL indirect subsidy was channeled to on-park firms (DDK 2009 –own calculations).[42] 83.91 percent of the indirect subsidy went to firms that operate on the parks located in Ankara alone. 98.13 percent went to on-park firms that were in Ankara, Istanbul, and Kocaeli. Since operating on a park does not prevent firms to apply for other organizations' support programs, some on-park firms also benefited from TÜBİTAK, KOSGEB, and TTGV support funds. As in the case of tax incentives, firms that operated in the parks in Ankara and Istanbul benefited the most from those supports. In concrete terms, those firms got 69.95 percent of the total fund allocated by TÜBİTAK, KOSGEB, and TTGV during 2002-2008 (DDK 2009 –own calculations).

To conclude, *a special emphasis has been placed upon the R&D sector by the AKP governments during the 2000s*. There have been noteworthy improvements in the main STI indicators (mainly regarding inputs), and there have also been substantial increases in the R&D funds allocated to the private sector. The spatial coverage of the allocation widened, as many cities in Anatolia have began to get their share from the expanding pie. However, the big cities preserved their dominant role in the innovation system by getting the bulk of the incentives.

Equally importantly, although some main policy documents defined strategic sectors and areas in STI during the 2000s,[43] those *were not strongly pursued in practice*. R&D centers, technoparks, and many other governmental support programs *did not have a strong sectoral or*

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[40] Two parks in Kocaeli, one in Izmir, one in Bursa, and one in Istanbul.
[41] The big cities include Ankara, Istanbul, Izmir, Bursa, and Kocaeli.
[42] Ibid.
[43] Vision 2023 project that was conducted during the initial years of the new millennium is an example (Chapter 5).

geographical focus by design. The policy design was *overwhelmingly horizontal* in this respect. These choices and developments reflect the AKP's stance on R&D policy during the 2000s.

Many questions arise at this point. To what extent is there consensus among political parties on the AKP's overwhelmingly horizontal policy design? Put differently, do opposition parties also prefer to allocate resources without having a strategic focus? Do they also suggest to proliferate technoparks and R&D centers throughout the country? Section 3.3 concentrates on these questions by going through the relevant parliamentary debates of key R&D legislation in Turkey. Before that, however, the next section briefly discusses a bill on technoparks, which is crucial, but seems to be overlooked in the scholarship on technoparks in Turkey.

3.2 An overlooked bill on technoparks

The parliamentary debate on the draft technopark law (prepared by the then MoIT) took place in 2001. At the time of the debate, the AKP was a recently established party, and the 2002 general election had yet to come. Thus, the AKP was not in the parliament. The CHP was also not in the parliament, since the party failed to cross the 10 percent electoral threshold in the 1999 general election. Despite these, the discussion of the draft technopark law is important for at least three reasons.

To begin with, the elaboration helps to demonstrate the fact that *political parties do have divergent views on R&D policy in Turkey*. This is not limited to the AKP, the CHP, or the Nationalist Movement Party (MHP). Second, the discussion helps to *provide a background for the further discussion of technological nationalism in Turkey* (Chapter 4). Last, *the elaboration offers an important empirical contribution within the Turkish context*. In all studies that shed light on the trajectory of technoparks in Turkey, the technopark law is explicitly mentioned. To my knowledge, however, no study has yet studied the parliamentary debate on the technopark law to attract attention to the fact that in addition to the Ministry's draft law, *there was also a bill on technoparks*. That bill was proposed by the True Path Party (DYP) deputy Mehmet

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Dönen, and portrayed a completely different pattern for technoparks in Turkey. Thus, a brief examination of the parliamentary discussion on the draft technopark law and the bill is in order.

The parliamentary debate on the technopark legislation, including the Ministry's draft law, the bill, and the relevant commission reports, took place on 26 June 2001. The main point of discussion was the Ministry's draft law, and each article of the draft was discussed at length and voted accordingly. Since the bill was not the main point of discussion, the whole debate was dominated by the DYP deputies, who compared the draft law with the bill in many respects.

There was a coalitional government of the Democratic Left Party (DSP), the MHP, and the Motherland Party (ANAP) during the debate. While the DSP held 136 of the seats out of 550, the MHP held 129 seats, and the ANAP held 86 seats. The DYP was also in the parliament with 85 seats, as the party managed to cross the 10 percent electoral threshold in the 1999 general election. Although the Virtue Party (FP) also crossed the electoral thereshold in the 1999 general election, and had 111 seats in the parliament, the party could not take part in the parliamentary discussion as the Constitutional Court decided the party's closure on 22 June 2001. Being a party with Islamic leanings, the party's agenda and activities were considered to threaten the secular regime. Thus, 186 deputies eventually took part in the debate.

There were striking differences between the Ministry's draft law and Dönen's bill. To begin with, four types of technoparks were defined and differentiated from each other in the bill. This contrasted with the Ministry's draft law, since only one type of technopark was identified in the draft. In the bill, the first group of technoparks were designed in a top-down fashion. The Ministry was held responsible for conducting feasibility reports on potential technopark sites and establish the parks once it would get the then SPO's approval.[44] The private sector was expected to apply to the Ministry to run the parks for a twenty-year period.

[44] The SPO is replaced with the new Ministry of Development in 2011.

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The second group of parks were designed in a bottom-up fashion. A managing company was expected to prepare a feasibility report to found a park and apply to the Ministry. The Ministry was expected to decide in touch with the SPO. It is important to note that only this type of technopark was outlined in the draft law. The major difference was that, in the Ministry's draft, an Assessment Board rather than the Ministry was held responsible from evaluating park applications. The Board was comprised of members from various ministries and organizations, and its decisions required the Council of Ministers' approval.

The bill promoted the establishment of parks within OIZs as a third group of technoparks. The parks were said to be founded with the joint initiatives of the Ministry and the SPO. The last group of parks were larger in scale and encompassed the first two types of technoparks. Once again, the Ministry was expected to take the lead and denote a specific region as a technopark site (a city, cities, or regions within cities) after consulting to stakeholders. Within that technopark site, R&D and production units, entrepreneurs, educational and social facilities, and financial organizations, were said to be placed individually or jointly. The Council of Ministers was expected to evaluate applications.

Technoparks' establishment within OIZs was especially important for the DYP deputies. The deputies pushed quite hard during the parliamentary debate to include an article to the draft which would enable the parks' foundation within OIZs. The deputies' main rationale was to gain from time. As noted by Dönen, establishment of the first and second group of technoparks would take time. Therefore, the utilization of the already-existing capacities in OIZs were important while other forms of technoparks were to be flourished in Turkey. Dönen argued that the Ministry's draft lacked this "flexibility," since the parks' establishment procedure was defined in a rigid way.

In support of Dönen, another DYP deputy furthered the argument by noting that if the parks would have been founded only within the university campuses, then problems would have

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arisen in regards to the effective merging of production with innovation. The firms that had to innovate in the production process could not have been relocated their facilities to the campuses. Thus, the law would have failed to incentivize R&D effectively.

The establishment of thematic technoparks was also considered as an important issue by the DYP deputies. As argued, specialized technoparks had to be founded in Turkey in line with each region's unique characteristics. In this regard, the Ministry's draft law was criticized since it did not promote specialization. To emphasize the point, one DYP deputy elaborated a specialized technopark project of theirs, that was offered to be established in Balıkesir in collaboration with Balıkesir University.[45] In line with the region's characteristics, this park was said to specialize in boron technology. As the deputy elaborated, a substantial portion of the borax mines were in Balıkesir and Bigadiç, and the Etibor General Directorate was also located in Bandırma. The main argument was that, Turkey could have benefit from its boron reserves enormously if she were to utilize them effectively. The specialized technopark in question was said to promote high-value added exports, and vitalize the economy via a spill-over effect, as the boron was used as an important input in many sectors.

In addition to technoparks' establishment procedure and objectives, the draft law and the bill contradicted on the parks' governance structure. In the bill, the Ministry and the SPO were defined as the two organizations that evaluate park applications and decide locations. In the draft law, an Assessment Board comprised of members from various ministries and innovation governance organizations assumed this role. For Dönen, this was one of the crucial differences between the draft law and the bill.

As Dönen elaborated, committees that were akin to the Assessment Board had never functioned well in Turkey. In the absence of bureaucratic coordination, each committee member acted in line with the vision of his own organization; that organization being controlled by a

[45]https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=5882&P5=B&PAGE1=52&PAGE2=52 (accessed 21 December 2016).

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certain political party. Thus, it had been very difficult to reach consensus in such committees where many members were represented from various organizations. Gönen exemplified his point by referring to KOSGEB, and by noting, "if you are not willing to do a business, delegate it to a commission [in Turkey]."[46] To circumvent this problem, the bill prepared by Dönen delegated the authority to the Ministry. In the words of Dönen, "instead of establishing inefficient committees that would not produce the desired outcome, a novel administrative mentality with the capacity of acting fast needs to be adopted in line with the requirements of the globalizing world."[47]

The differences between the Ministry's draft law and the bill can be elaborated further. However, the brief examination suffices to support the following point: *Political parties do have different stances on R&D policy in Turkey*. The differences in question are not minor, but substantial. As elaborated, the draft Technopark law and the bill envisaged a completely different development trajectory for technoparks in Turkey at the turn of the millennium.

3.3 Opposition's divergent views on R&D policy in Turkey during the 2000s

In-depth examination of the relevant parliamentary discussions on key R&D legislation during the AKP period further demonstrates the political parties' opposing views on R&D policy in Turkey. As elaborated in the previous sections, the AKP pursued an overwhelmingly horizontal policy design during the 2000s, whereby the spatial allocation of the funds had been widened. As this section shows, the CHP favored a sectoral approach rather than a horizontal one, and preferred to concentrate resources on relatively developed regions. The MHP had its own views also. In addition, both the CHP and the MHP proposed a completely diferent legal framework to administer R&D in Turkey.

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[46]https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=5882&P5=B&PAGE1=44&PAGE2=45 (accessed 21 December 2016).
[47] Ibid.

This section demonstrates the CHP's and the MHP's opposing stances on R&D policy by going through the parliamentary discussions on the 'R&D law' and the 'Technopark law.' Enacted in 2008 and prepared by the Ministry of Finance, the R&D law introduces and regulates R&D centers in Turkey. The law incentivizes the private sector to establish R&D units via various tax cuts and incentives. The parliamentary debate on the draft R&D law was conducted in four sessions on 7, 8, 20, and 28 February 2008.[48] At the time of the debate, the AKP dominated the parliament by holding 341 of the seats out of 550. The CHP and the MHP formed the opposition by occupying 112 seats and 71 seats respectively. The R&D law is amended more than once later.

The other main R&D legislation, commonly known as the 'Technopark law,' was enacted in 2001. The technopark law was also amended more than once during the AKP period. One such amendment was prepared by the then Ministry of Industry and Trade and discussed in the parliament on 2 March 2011.[49] Once again, the AKP dominated the parliament at the time of the debate, and the CHP formed the main opposition. The in-depth examination of the debates on the 'R&D law' and the 'Technopark law' reveal the parties' differing stances on R&D policy in Turkey during the AKP period.

To begin with, the CHP preferred to concentrate resources on strategic sectors rather than a horizontal allocation. In this regard, the CHP's one main concern about the draft R&D law was its lack of strategic focus. The draft was said to put no emphasis on strategic areas, since it provided tax exemptions to any firm in any sector that employed more than 50, in some cases 500, full-time equivalent R&D personnel. This was considered as a crucial mistake by the CHP. As the deputies elaborated at length, the already scarce resources should have been concentrated on the strategic sectors, in line with the SCST reports and the Ninth Development

[48] The parliamentary debates can be accessed via the Grand National Assembly of Turkey website https://www.tbmm.gov.tr/develop/owa/kanunlar_sd.durumu?kanun_no=5746 (accessed 25 September 2016).
[49] For the parliamentary debate on the amendment see, https://www.tbmm.gov.tr/develop/owa/kanunlar_sd.durumu?kanun_no=6170 (accessed 5 December 2016).

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Plan. Those sectors should have been supported in every possible domain from investment to production. While elaborating the party's sectoral focus, one CHP deputy noted, "assume that there is a sector in our country [and] it does not matter in the least to us…it does not create value-added, it does not produce high-technology…once [a firm in this sector] establishes a fifty-personnel laboratory [it is supported]...when it employs five hundred R&D personnel [it is supported]…should [this firm] have this kind of a right? Of course…but [the goal of the public sector] is to prepare a R&D law which would [be clear on] what it is subsidizing."[50]

The CHP deputies further highlighted that incentive policies in Turkey had always been designed in this manner –without having a strategic orientation. As argued, although it was scientifically proven that incentive policies that would target strategic sectors with concrete goals would be superior to the ones that did not have these traits, no such perspective had been taken in Turkey. Within the context of the incentive law, the idea that all types of investments had to be supported was opposed. As noted, although this kind of an approach might be attractive in the short-term since it would generate employment opportunities, it would lead to inefficiencies in the long-run. In the words of the CHP deputy, "flour plants in Turkey function with 20 percent capacity. If [one] establishes a flour plant, [he] still benefits from the incentive. This is wrong."[51] In the eyes of the CHP deputies, the R&D law committed the same mistake.[52]

In addition to the absence of a strategic focus, the draft R&D law also did not have a clear objective from the CHP's perspective. The draft did not set forth any concrete success criteria that can be followed-up later. As suggested by one CHP deputy, some measurable goals might have been set at the outset, such as an increase in R&D personnel in Turkey from 5

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[50]<https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20075&P5=B&PAGE1=1&PAGE2=59> p. 50 (accessed 25 September 2016).
[51]<https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20077&P5=B&PAGE1=37&PAGE2=37> (accessed 21 December 2016).
[52] The CHP's sectoral focus is put forward in the party's election bulletins as well. For instance, establishment of regionally-oriented "Entrepreneurship Schools" and "Entrepreneurship Factories" is foreseen in the 2015 election bulletin.

thousand to 15 thousand (by defining the targeted sectors), or an increase in R&D intensity from 0.79 to 2 within two years.[53]

To highlight the absence of a clear objective, one CHP deputy raised a question to the Minister of Finance in the question-answer section by inquiring whether a projection had been done to foresee how many firms would benefit from the R&D law within one and three years after its implementation. In a rather straightforward manner, the Minister of Finance stated that no such projection had been done, but the relevant information about these issues would be shared with the parties in time.[54]

The CHP's certain views on distribution strongly signalled that the party also preferred to concentrate resources in relatively developed regions in addition to strategic sectors. This becomes apparent when one takes the party's views on R&D center and technopark proliferation in Turkey during the 2000s. In 2014, when the required personnel to establish a R&D center was reduced to thirty with an amendment, the CHP objected to this reduction as the superficial proliferation of R&D centers was considered as an unproductive initiative. The CHP also had serious concerns about the pace of technopark proliferation, as parks' pre-mature establishment in the face of significant infrastructure problems and human capital shortages was also considered inefficient. As put forward by one CHP deputy, in the absence of necessary infrastructural investments,[55]

> Technoparks emerge, a few enterprises function there…[and] if…technoparks [are perceived] as investments which would 'evolve over the course of time' [on their own]…technoparks [would turn] into ruined industrial sites…[and technoparks] which would be Turkey's pride would be the places where Turkey's hopes would be broken.

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[53]https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20075&P5=B&PAGE1=48&PAGE2=48> (accessed 21 December 2016).
[54]https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20077&P5=B&PAGE1=19&PAGE2=23> (accessed 21 December 2016).
[55]<https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20881&P5=B&PAGE1=1&PAGE2=72> p. 25 (accessed 25 September 2016).

In addition, the CHP emphasized that once a technopark was founded in Turkey, there was no room for its further physical expansion. Although the CHP did not see a value in the careless proliferation of technoparks, physical expansion of the already-founded parks was considered as an important point. As noted by the CHP, if technoparks were refrained from physical expansion right at the start, only certain type of investors would have been attracted to the parks, and this would reduce the quality of technoparks. Especially entrepreneurs that would require space to test pretotypes would be discouraged to operate in a park. Thereby, instead of proliferating the numbers, the CHP proposed to concentrate on the already-founded technoparks.

One CHP deputy also underlined that "on-park firms should not prefer to function in the parks with the purpose of benefiting from various tax exemptions and paying low rents, and universities should not perceive technoparks as a rent-seeking opportunity."[56] Furthermore, the deputy noted that "now, it is a must for Turkey to design her [incubator] centers as international centers…[because] if [one does not] benefit from universal knowledge accumulation [and] universal technology accumulation, [and does not] adopt common goals and found joint technoparks [with foreigners], [one] can become…an institution which would be overwhelmed by others' patents."[57] These two suggestions of the CHP deputy also indicates that the CHP's prefers to concentrate R&D resources on relatively developed regions and strategic sectors in contrast to a horizontal policy design.

Besides these major issues, the CHP also proposed a completely different legal framework to organize R&D in Turkey. By attracting attention to the fact that many incentives were set forth in the form of tax incentives in the R&D law, the CHP argued that the so-called R&D law was nothing more than a mere tax incentive legislation. The CHP proposed to merge

[56] Ibid., p. 26.
[57] Ibid., p. 25.

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the technopark law with the R&D law, to prepare a new legislation that would promote R&D in a more comprehensive way in Turkey.

In regards to this, the CHP also had problems with the draft's ambiguous statements on some key issues. For instance, the draft did not define which agency was going to distribute resources in the innovation system, and based on what criteria the distribution was going to be handled. In the draft, TÜBİTAK was stated as the organization that was responsible, but what was going to be prioritized by TÜBİTAK in allocation was not clear. Furthermore, it was not clear how the law was going to be audited in implementation. In the draft, the issues that were related to implementation and audit were said to be specified in the subsequent regulation. As the CHP deputies asserted, however, such issues were a matter of principal regulation, thus could not be delegated to the executive as outlined in the Constitution. The CHP demanded clarification on these issues.

Like the CHP, the MHP also had different views on R&D policy in comparison to the AKP. However, the MHP's views were not as significantly different from the AKP's as the CHP's. To begin with, the MHP was against the 50 full-time-equivalent R&D personnel requirement, and proposed to reduce this number to 10. The idea was to support SMEs and the larger segments of the population. The MHP also questioned the 500-personnel requirement, with the suspicion that the law's primary objective was to favor large firms without putting an adequate emphasis on R&D. In the words of a MHP deputy: "if we…opt for [five-hundred personnel requirement] because of the promises given to a few companies, we are doing wrong…if we consider this [because] a few companies can evade taxes with the R&D excuse, again we are doing wrong."[58]

Some MHP deputies issued a motion to circumvent the high personnel requirements in a nuanced way. The idea was to provide support to the firms that allocate at least one percent

[58]<https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20077&P5=B&PAGE1=1&PAGE2=54> p. 14, (accessed 25 September 2016).

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of their annual budget to R&D. With this criterion, even if a firm would not meet the personnel requirement as specified in the draft, or did not operate in a park, it would still benefit from the incentives. As one MHP deputy noted, if a large firm would allocate one per thousand of its annual budget to R&D, it would still benefit from the R&D law, which was fine. However, the firms that would allocate two-three percent of their annual budget to R&D should not have been left outside the law's scope, from the perspective of the MHP deputy.

Following the AKP's footsteps, and in contradiction with the CHP, the MHP proposed to allocate resources to all sectors and all areas via the R&D law. Yet, the MHP placed a special emphasis on the software sector, and proposed to support the sector preferentially via the R&D law. As suggested by one MHP deputy, the software sector should have been elaborated in a separate section in the draft, and additional incentives should have been provided to the sector.

The MHP's additional concern about the R&D law was about the law's potential negative influence on technoparks. Because the draft provided firms the opportunity to establish R&D units wherever they want geographically, it disincentived the firms to operate in a technopark in the eyes of the MHP. This kind of an incentive structure was said to overlook the importance of geographical proximity, and undermine the essential university-business collaboration dimension in R&D.

To conclude, political parties do have opposing views on R&D policy in Turkey. While some of those differences are minor, some are substantial. Particularly, the CHP's views on R&D fund allocation is quite different from the AKP's. While the AKP prefers an overwhelmingly horizontal policy design and welcomes a widening in the spatial allocation of the resources, the CHP prefers to concentrate resources on relatively developed regions with a strategic focus. While the AKP emphasizes *input increases* by lowering expectations on the quality of R&D projects and investments (Chapter 6), the CHP highlights *output quality*.

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Furthermore, both the CHP and the MHP proposes a completely different legal setup to organize R&D in Turkey.

3.4 Concluding remarks

This chapter has aimed at making an introduction to the study of R&D policy-making processes in Turkey by outlining the political parties' opposing perspectives on R&D policy. As noted, many believe that none of the opposition parties have a ground-breaking R&D vision in Turkey that is based on evidence and institutionalized policy-making.[59] Although this claim seems to be accurate (Chapter 4), *this does not mean that the opposition parties share the AKP's views on R&D policy*. In contrast to the common view, *the opposition parties do envisage a different path for R&D policy in Turkey*. As has been shown via the investigation of parliamentary debates, the CHP's views especially contradicted the AKP's on important grounds. In contrast to the AKP's horizontal policy design, the CHP prefered to concentrate resources on relatively developed regions with a strategic focus.

In the light of these divergent views on R&D policy, a puzzle emerges when one observes the fact that the opposition parties voted in favor of the legislation in the parliament during the 2000s. For instance, 247 deputies participated in the parliamentary discussion on the R&D law in 2008 and 242 of them voted in favor of the draft.[60] 235 deputies were present during the amendment of the technopark law in 2011, and all of them voted in favor of the draft. Out of 255 deputies, 254 of them supported the 'R&D reform package' in 2016. Why did the opposition parties supported AKP even though they had divergent views on R&D policy? Why

[59] This claim is based on the interview evidence.

[60] The information about the distribution of votes among the parties is not provided in the parliamentary documents. Therefore, I do not know how many AKP, CHP, or MHP deputies participated in the voting. However, it is clear from the documents that both the CHP and the MHP participated in the debates with some number of deputies. First, both the CHP and the MHP deputies delivered speeches. Second, while each deputy was invited to the lectern, the documents note "applauds from the CHP/MHP lines." Third, some CHP and MHP deputies who did not deliver speeches intervened with others' speeches. Therefore, there were at least some CHP and MHP deputies in the parliament at the time of the discussion. Even if those deputies did not vote in favor of the drafts (highly unlikely because they explicitly conveyed support for the drafts despite their various shortcomings) they centainly did not vote against them. Thus, the opposition 'voted in favor' of the drafts in any case, literally or not.

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did the parties supported the legislation although they perceived it as a mere tax incentive legislation, and even suspected rent-seeking in its formulation? The following chapter concentrates on these questions.

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CHAPTER 4: Technological Nationalism, Weak Opposition, and Influences on R&D Policy in Turkey

As demonstrated in the previous chapter, the political parties have significantly different views on R&D policy in Turkey. Whereas the AKP has preferred a dominantly horizontal policy design during the 2000s, and has welcomed a spatial-widening in distribution, the CHP has suggested to concentrate resources on relatively developed regions and places with a strategic focus. While the AKP has prioritized *input increases* by lowering expectations on the quality of R&D investments (Chapter 6), the CHP has highlighted the importance of *output quality*. Furthermore, both the CHP and the MHP have proposed a completely different legal framework to orchestrate R&D in Turkey at the macro-level.

Be that as it may, the opposition parties have supported AKP in the parliament on key R&D legislation. 242 deputies out of 247 voted in favor of the draft R&D law in 2008. All 235 deputies supported the technopark law's amendment in 2011. Except for one, all 255 deputies supported the 'R&D reform package' in 2016. The question is, *why did the opposition parties supported AKP although they had considerably different views on R&D policy?* Why did the parties supported the legislation even though they had major doubts about its value-added, and even suspected rent-seeking in its formulation?

This chapter argues that *the combined influences of technological nationalism and the opposition's institutional weaknesses in R&D policy-making have turned down the opposition's voice in the parliament during the 2000s, and have led the opposition to support AKP on key R&D legislation*. Given the fact that the opposition could have participated more effectively in R&D policy-making, *as many bureaucrats have actually been in favor of many policy prescriptions that it proposed* (especially the CHP's propositions), the above-mentioned characteristics of the opposition has influenced R&D policy by *hindering the effective*

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formulation and deliberation of alternative policy options –which is in fact one important dimension of politics.

The rest of this chapter is organized as follows. Section 4.1 discusses technological nationalism in Turkey in the light of the theoretical framework outlined in Chapter 2. On the one hand, the section provides information in regards to the broad perception and understanding of innovation and R&D in Turkey by societal actors. On the other hand, the section concentrates on the parliamentary discussions of key R&D legislation in the 2000s, and demonstrates the nationalist sentiments that led the opposition parties to support AKP on R&D legislation. Section 4.2 turns a keen eye on the opposition's institutional weaknesses in R&D policy-making. This characteristic of the opposition is said to reflect its overall weakness in the Turkish political economy during the 2000s, and is argued to compelement the effect of technological nationalism. Section 4.3 concludes the discussion.

4.1 Technological nationalism in Turkey during the 2000s

As elaborated in detail in Chapter 2, technological nationalism has been used in various ways in different contexts since Robert Reich coined the term in 1987 (Kennedy 2013, 911). In brief, various definitions of technological nationalism combined the ideas that (i) technology is essential in promoting economic growth and development, (ii) technology is indispensible in the achievement of global power, (iii) dependence on foreign technology poses dangers for national goals, and (iv) technology is critical in the safeguarding of national security.

Furthermore, many studies on technological nationalism noted that 'nationalism' should not be strictly associated with protectionist policies, since there are multiple ways of pursuing an essentially nationalist agenda (Section 2.1). Put differently, scholars of economic nationalism and technological nationalism both argued that nationalism can be compatible with any policy bundle, including the most paradoxical neoliberal ones (Section 2.1). In regards to this, the term 'neo-techno-nationalism' encompassed the ideas that governments can (i)

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promote national interests by leveraging globalization instead of preventing it, (ii) promote private initiative and public-private cooperation instead of surrendering to global forces, (iii) welcome foreigners if it serves national agenda, and (iv) envisage both cooperation and conflict in international relations (Yamada 2000; Suttmeier and Yao 2004b, 18).

On top of these points, a line of the scholarship asserted that nationalism cannot be considered as a mere 'state-tool,' since non-state actors also influence policy-making processes by way of creating a shared national understanding in society –based on which governments legitimize certain policy preferences (Section 2.1).

In the light of all these considerations, this section elaborates technological nationalism within the Turkish context. At first, the broad understanding of innovation and R&D by societal actors in Turkey is briefly investigated. Then, the ways that the AKP promoted certain technology-intensive projects in the 2000s is put forward. Thus, the main objective of the following section is to convey the message that *there has been a broad consensus on the indispensability of innovation and R&D in Turkey during the 2000s –very much in line with the ideas that are captured by the term technological nationalism.*

4.1.1 A societal concensus on two 'magical words' in Turkey: Innovation and R&D

During the 2000s, all actors in Turkey, including the single-party AKP governments, the opposition parties, influential business organizations, and think thanks, have acknowledged the indispensable role of innovation and R&D for economic growth and development. They have all considered R&D as a crucial factor of production, and have argued that only a well-functioning innovation system can pull Turkey out of the middle-income-trap. There has been a broad consensus on this specific issue in the country in the 2000s.

To begin with, many statements of high state officials that were made during large-scale events, which were organized around a theme related to STI, revealed the importance that has been attached to innovation and R&D in Turkey during the AKP period (besides many official

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policy documents). To exemplify, the Turkish Exporters Assembly (TİM) organized *Turkey's 5th Innovation Week* in coordination with the Ministry of Economy in Istanbul during 8–10 December 2016.[61] Many professionals, businesspersons, and academics attended the event, and the organization was in fact sponsored by leading businesses in Turkey including Arçelik, Turkish Economy Bank (TEB), Turkish Airlines, Sabancı Holding, Çalık Holding and Turkcell.[62] In the opening ceremony of this event, the Turkish Minister of Science, Industry, and Technology noted:[63]

> A production and export-based growth model does not describe properly what Turkey needs. A model that is based on research and development [R&D] and innovation is much more appropriate to define what we need. We have often spoken about Turkey's foreign trade deficit and current account gap. These are an obvious result of Turkey's technology gap, which is the main problem of Turkey. If we close this gap, other gaps will automatically be closed.

In several similar statements, high state officials have explicitly acknowledged the significance of innovation and R&D for growth and development in Turkey. Furthermore, in many of those declarations, *officials have made explicit references to the national dimension of innovation processes*. For instance, on the second day of *Turkey's 5th Innovation Week*, the Turkish Minister of Energy and Natural Resources underlined that Turkey's energy import had reached 400 billion dollars since 2006. Then, he noted that the Ministry has focused on "domestic and renewable technologies" to reduce this amount in the recent year.[64] In regards to this, the Minister underlined two conditions that were to be set in public tender regulation on renewable energy, which needed to be met by the private sector to participate in the tender: the domestic content of production needs to be at least 65 percent, and 80 percent of engineers needs to be Turkish.[65]

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[61] Elif Binici, "5th Innovation Week starts in Istanbul," *Daily Sabah*, 8 December 2016.
[62] "5th Turkey Innovation Week starts in Istanbul," *Hurriyet Daily News*, 8 December 2016.
[63] Ibid.
[64] "Enerji ve Tabii Kaynaklar Bakanı Albayrak: Yerli ve yenilenebilir teknolojilere odaklandık," *Anadolu Ajansı*, 9 December 2016.
[65] Ibid.

In that speech, the Minister also noted that "self-confidence" and "hard-work" are the two qualities that are needed to catch-up with developing countries in contemporary world via improvements in innovation-related fields. In this regard, after noting that the contemporary generation in Turkey assumes a critical role in carrying Turkey to "the level of contemporary civilization," the Minister emphasized *certain qualities of the Turkish nation*, which are said to *contribute to the development attempts of the country*.[66] In the words of the Minister:[67]

> No matter what they say, [no matter how they] look down on you [the Turkish nation], [no matter how they] attempt to dash your self-confidence [and] demoralize you, don't lend an ear to them. As long as you recall your nation first, then yourself, and then your God, no one can harm you. *If we are the descendants of a culture that has provided order and regularity to the world in every sense, we will also build our future efforts based on this culture.* If we can accomplish this, no one can break us. The most striking example of this is July 15…By valuing our country's interest above everything else…by prioritizing our motherland, by feeling grateful and loyal to our land, not only with our elbow grease, but also with the strength of our mind, we will pursue this process [carrying Turkey to "the level of contemporary civilization"] (emphasis added).

The idea that innovation and R&D are indispensable for successful economic performance, and that the Turkish culture is compatible with innovativeness, are also shared by many actors in Turkey. For instance, one MÜSİAD report that was published in 2012 solely focused on R&D and innovation, and highlighted how these two phenomena have become indispensable in promoting competitiveness in the international arena (MÜSİAD 2012). As noted in that report, "innovation, which constitutes the essence of competitiveness, is the key to development, sustainable economic growth, and social welfare" (MÜSİAD 2012, 33).

More importantly, Ömer Cihad Vardan, the then President of MÜSİAD, started his introductory remarks to that report by quoting directly from Celaleddin-i Rumi, a 13th-century poet who lived in Anatolia and a prominent figure in Turkish culture: "Yesterday has passed, today we have to say something new" (MÜSİAD 2012, 10).[68] Later, the President explained

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[66] "Enerji ve Tabii Kaynaklar Bakanı Albayrak: Yerli ve yenilenebilir teknolojilere odaklandık," *Anadolu Ajansı*, 9 December 2016.
[67] Ibid.
[68] In Turkish: "Dün dünde kaldı, bugün yeni şeyler söylemek lazım."

how a number of inventions, innovations, and significant developments were realized within the contemporary borders of Turkey in history, varying from the domestication of cow, sheep, and goat, to the invention of writing (ibid.). As the President concluded, "now, history once again *demands from us, who live in these lands, to lead a sea change for the mankind*. This change [is] a development model that is compatible with nature and human nature, and *an approach to innovation that is not destructive*" (ibid., emphasis added).

Like MÜSİAD, TÜSİAD has also put forward the importance of innovation and R&D in many organizational reports in the 2000s (TÜSİAD 2003, 2008). The association also organized several events to promote innovativeness in Turkish society. In one such conference that was held in 2012, and titled 'From Creative Ideas to Innovative Enterprises,' the then President of TÜSİAD asserted, "the road to the competitive advantages in the international markets and prosperity is paved with the superior technology, R&D and innovation."[69] Many other business associations and civil society organizations have had a similar stance on innovation and R&D in Turkey in the last fifteen years.

If we turn our attention back to top-state officials, many large-scale projects in Turkey have been introduced and promoted in relation to their technological content and superiority by the AKP in the 2000s. Those projects have also touched national sentiments, and mixed the idea of a technological progress with a national flavor. The introduction and promotion of the national car project in Turkey during the 2000s is an illustrative case in point.

To begin with, developing a national car has commonly been a source of prestige and pride for developing countries. Even though the benefits of such an endeavor had been questionable in many cases, since a rational cost-benefit analysis casted serious doubts on the utility of producing a national car, nationalist sentiments tipped the pendulum towards the development of a car in the end. For instance, as one study noted within the Chinese context,

[69] See http://tusiad.org/en/news-events/item/6201-tusiad-discussed-innovation-in-the-istanbul-design-biennale> (accessed 9 December 2016).

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"despite the mixed success of developing countries' automotive industries in the 1970s, by the mid-1980s the drive to foster a domestic passenger car industry in China had become nearly unstoppable" (Harwit 1995, 36). At the time, the pros of national car production were discussed in China in relation to potential impacts on imports and exports. However, one specific support that came from automotive researchers was noteworthy. As noted in the study, "in what was perhaps a display of national pride, [some] automotive researchers argued that bicycles and subways could never truly substitute for passenger cars in moving people within urban areas, and, furthermore, that no other truly modern country in the world lacked a developed passenger car mode of transport" (ibid.).

The national sentiments had also been important in other domains, especially if the field in question was considered as an indicator of development and modernization by developing countries. As noted within the context of Indonesia, "some industries (such as auto production and steel smelting) are considered benchmarks in a nation's advancement…[thus, those prestigious industries] are sometimes put into production very early in development as a show of pride to neighbors...Indonesia's attempt at creating a 'national car' seemed to analysts as a bit premature in a country that is primarily agrarian" (Curry 2009, 22).

In Turkey, the AKP government proudly announced the national car project in 2011.[70] In fact, the then Prime Minister Recep Tayyip Erdoğan made several calls to initiate a national car project before 2011, since such a project was considered as an "obligation towards [Turkish] society."[71] Erdoğan outlined the project for the first time in the general assembly of TÜSİAD,[72] and the development of a national car has become an essential goal of the AKP governments afterwards.[73] Tangible steps have begun to be taken, and TÜBİTAK has played a leading role in the steering of the project.

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[70] "Turkey's first national car brand to be electric, says minister," *Hurriyet Daily News*, October 22, 2014.
[71] "Erdoğan: Yerli marka otomobil yapacak bir babayiğit vardır," *Milliyet*, September 27, 2011.
[72] Emre Özpeynirci, "'Milli' Cadillac," *Hürriyet*, October 13, 2015.
[73] Ibid.

In 2015, Fikri Işık, the then Minister of Science, Industry, and Technology, shared the national car's first images with the public. To reveal the project's ambitious character in regards to technological content, the Minister noted, "let me say first that Turkey has missed the train for the classic internal combustion motor technology. We do not see a chance for sustainable competition there. But electric cars present a new window of opportunity...Turkey will have a car brand but it will not use internal combustion technology. It will be a long-range electric car."[74]

Once the Minister shared the car's first images with the public, the project was immediately criticized in the social media on various accounts. One such criticism was related to the car's 'national' content, as it was highly questionable to what extent the car was 'national.' Many in Turkey mocked the project by noting that the so-called 'national car' was not a national car in its essence, but it was actually a 'national Cadillac.'[75] The car that was displayed by the Minister was actually a 2007 model Cadillac BLS, which was developed in Sweden on a 9-3 platform by Saab.[76]

Later, the Minister joined the debate on the car's 'nationality' by noting that "we bought the Saab 9-3's intellectual property rights, but not its name…the brand [of the car that is to be developed] will be a Turkish brand, it will not be Saab. We'll develop the technology in Turkey."[77] The Minister also noted that Turkey had two options prior to the initiation of the national car project. In the first scenario, Turkey had to do everything by itself. In the second scenario, Turkey had to cooperate with a well-known brand. While the first option would have lasted for three to five years with an expenditure worth of 1 billion dollars, the second option (buying the intellectual property rights) would have lasted for six months, and it would have a

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[74] "Turkey's first national car brand to be electric: Minister," *Anadolu Agency*, October 22, 2014.
[75] Emre Özpeynirci, "'Milli' Cadillac," *Hürriyet*, October 13, 2015.
[76] Ibid.
[77] "Turkey develops national car with Saab," *Hurriyet Daily News*, October 16, 2015.

"very affordable cost."[78] Since the second option was considered as the rational one, the Ministry chose to buy the intellectual property rights.

Meanwhile, President Erdoğan had also joined the discussions on the national car, and reacted to critics by asserting that big national projects in Turkey had always been targeted by some interest groups in the country. The aim of those groups was said to undermine Turkey's development potential. To exemplify the point, Erdoğan cited some previous national projects that were pursued in Turkey, including an aircraft factory that was established by Nuri Demirağ in the 1930s. As Demirağ asserted at the time, "within ten years, we will create our own airplanes with all parts till the tiniest screw, including engines."[79] Demirağ also contributed to the construction of railways at the time, so that Mustafa Kemal Atatürk gave him the last name 'Demirağ,' which refers to 'railway' in Turkish.[80] In short, Erdoğan strongly reacted to the critics of the national car project by making explicit references to the 'national agenda.'

In regards to the national car project's public appeal, which is more important within the context of this thesis, the proponents of the AKP defended the project by explicitly emphasizing the *national pride* and *national prestige* that were attached to the project. One newspaper that is known to be close to the AKP declared that the car was "totally Turkish made," despite the fact that it was not 'national,' in the sense that not all parts were produced domestically.[81]

In one newspaper article, the national element of the car project, and its importance, was put forward explicitly: "there are only so many states in the world which have 'self-developed national cars' and most of them are advanced countries. So, having a national car brand is important for countries not only for its direct contribution to industrialization and economic growth but also as a source of national pride. The Turkish government has been working very

[78] "Turkey develops national car with Saab," *Hurriyet Daily News*, October 16, 2015.
[79] http://www.saraymedya.com/yazar/740-turkiye39de-kurulan-ilk-ucak-fabrikasinin-hazin-so.html
[80] Ibid.
[81] "Yerli otomobili hazmedemediler!," *Yeni Akit*, October 14, 2015.

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hard for a while to have a Turkish brand national car."[82] The article argued that the Turkish Minister of Science, Industry, and Technology made sure that the car was living up to the best technological standards.

Equally importantly, many opponents of the AKP criticized the car project since no real advancements were taking place in practice in regards to the project's actualization, and *the project was being brought up in the media just before elections to attract public appeal*. As elaborated in one newspaper article, before June 2015 general election, the Minister announced that they were putting significant efforts into the actualization of the national car project.[83] The then Prime Minister Ahmet Davutoğlu also made similar statements. However, once the AKP had failed to form a single party government after the election, the project's fate became unclear. Whenever it was decided that there was going to be a snap election in November 2015, announcements in regards to the national car project re-emerged. Based on this, the opposition criticized the project with the claim that *there was no real progress in implementation, but the project was being used as a rhetorical strategy to attact public appeal*.

The fact that the AKP's opponents reacted strongly to the ways that the AKP had promoted the national car project is quite indicative, *since it hints at the potential public appeal of a national rhetoric that is mixed with technology and innovativeness in Turkey*. Such national projects, and the way that they have been promoted (by bringing in national sentiments), have attracted public appeal in Turkey during the 2000s. Many national projects that have been promoted by the AKP governments since 2002 can be elaborated with the same lens, including the national ship project, Marmaray Railway Engineering Project, first high-speed train project, and the world's first three-level tunnel that is to be built under the Bosporus, etc. For instance, in regards to the three-level tunnel project, the then Prime Minister Ahmet Davutoğlu noted,

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[82] Abdülkadir Civan, "Turkey's national car," *Cihan News Agency*, August 19, 2015.
[83] Emre Özpeynirci, "'Milli' Cadillac," *Hürriyet*, October 13, 2015.

"the three-level mega project will be the signal flare of the Turkish Republic, the fourth global state in Istanbul after three empires."[84]

To conclude, *there has been a broad consensus on the indispensability of innovation and R&D in Turkey during the 2000s*. Furthermore, innovation and R&D have commonly been elaborated *in regards to their compatibility with certain elements of Turkish culture and history*, and *some national projects have been promoted and legitimized in relation to their national content and national goals*. It is important to highlight that, despite the clear position that is taken on the importance of innovation, many governmental and organizational documents have not elaborated innovation and R&D in a detailed way. In other words, they have not proposed a concrete policy agenda that is defined by concrete, and measurable, objectives. *However, the 'magical' characteristic of innovation has been there, alongside its national flavor*.

4.1.2 Technological nationalism and the opposition in Turkey

The opposition's position on innovation and R&D has reflected the societal consensus on the subject-matter in Turkey during the 2000s. The opposition has perceived innovation *as an indispensable element of economic success*, in the absence of which a country is said to fail in overcoming the middle-income trap. Furthermore, the opposition has perceived innovation as a phenomenon that *cannot be opposed in any circumstances, since innovation is thought to promote modernization, sustain a nation's independence, and embody national dignity in a globalized world*. The opposition has also made explicit references to the *Turkish version of an innovation system*, and *welcomed foreigners if it would serve the national agenda*.

During the parliamentary discussions of key R&D legislation in the 2000s, all party deputies made statements that embodied nationalist sentiments in the direction of technological nationalism, but not surprisingly, the MHP had been the one that put a relatively more and

[84] "Turkish PM presents Istanbul sea tunnel mega-project," *Hurriyet Daily News*, 27 February 2015.

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structured emphasis on the national content of innovation and R&D policy. For instance, in his elaboration of the draft R&D law on behalf of the MHP, one deputy placed a great deal of emphasis on the broad Turkish innovation system, macroeconomic environment in Turkey and economic policy, and more importantly the cultural aspects of development in Turkey. In addition to the assertion that the draft R&D law needed to be elaborated "within a broader political economy perspective,"[85] the deputy called for a national stance on innovation policy that would take the specific cultural traits and values of Turkish citizens into accout. A "philosophical approach" as such was said to go beyond the simple act of resource allocation, and considered as the only way for success in providing a suitable macroeconomic environment to Turkish entrepreneurs. As the deputy noted, "in the contemporary world, for our people to produce knowledge in a better way, there is a need for nationalist perspectives, which would consider the society and the culture in which our people are embedded."[86]

In regards to Turkish culture, the deputy emphasized how *Turk-Islam civilization has always valued knowledge, science, and research in history*, and underlined how the Turkish civilization *has had its own national and spiritual values*. The deputy named influential figures from the Turkish history to make his point, including Nizam al-Mulk, Elmalılı Hamdi Yazır, and Mustafa Kemal Atatürk. The deputy argued that the main cause of Turkey's poor performance in innovation and R&D was related to the absence of a political economy that had valued and prioritized individuals who produce knowledge.

In the light of this broad view, the MHP deputy examined the role that foreign companies should play in the Turkish innovation system. On the one hand, the emphasis was placed upon *power relations*. The deputy took a stance that was exactly in line with neo-techno-nationalists,

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[85]<https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20077&P5=B&PAGE1=1&PAGE2=54> pp. 11 (accessed 4 October 2016).
[86]<https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20077&P5=B&PAGE1=1&PAGE2=54> pp. 12 (accessed 4 October 2016).

in the sense that the deputy *welcomed international collaboration on the condition that it would serve national goals*. In the words of the deputy:[87]

> Our concern is not the presence of a multinational company…I want you to know that there will be a serious contradiction and conflict [as] multinational companies want to impose their own laws…[and] perspectives on this country…this conflict and contradiction should be there [naturally] … [the question is] are they going to rule over [or] are we going to administer? That's why, while evaluating these issues, we should definitely evaluate them with a national lens, but, we should also take global developments and global means into account.

On the other hand, the emphasis was again placed upon the *cultural aspects of development*. The deputy claimed that a perspective that would not adopt a national stance, and would not respect a nation's peculiarities, could never be effective in implementation. Such an inadequate stance would have "led to a delay in [Turkey's] efficient utilization of the resources, paved the way towards the [multinational companies' interests only], [and] seen no difference between Ahmet and George."[88]

The deputy's "Ahmet and George" comparison is quite telling and indicative. In the quotation, "Ahmet" refers to a representative Turkish citizen, and "George" refers to a representative US citizen (or a citizen of a foreign country). The goal of the comparison is to highlight the perceived cultural differences among nations, and emphasize the significance of those differences in the promotion of innovation and R&D.

In support of a national lens based on which innovation policies were suggested to be formulated, another MHP deputy highlighted the point that Turkey could only end up being an exploited nation if it were not to embrace a national perspective on innovation and R&D. In the words of the deputy:[89]

> [If Turkey] attempts to acquire information technologies by only importing global powers' products with an assembly logic …[technologies that] do not belong to [Turkey's] national culture [and] her national fabric, [then]…it will be inevitable that

[87]<https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20077&P5=B&PAGE1=1&PAGE2=54> pp.13 (accessed 11 December 2016).
[88] Ibid.
[89]<https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20077&P5=B&PAGE1=28&PAGE2=28> (accessed 21 December 2016).

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> [Turkey] will be exposed to global powers' exploitation, in other words, to knowledge and technology imperialism.

After having argued that innovation and R&D are indispensable for growth and development, the MHP explicitly asserted that innovation-related matters *cannot be opposed* in Turkey –since innovation is central to the country's future and development. As one MHP deputy noted, "of course, it is not possible for anyone who believes in [Turkey]'s future, development, and improvement in its society's well-being to oppose this R&D law."[90] Besides these concerns, the MHP also considered innovation as a tool of preserving a nation's independence. As asserted by another MHP deputy, "global competition is extremely important for contemporary economies. It is not possible for economies to exist [if they] cannot compete globally. Therefore, the law that we discuss today is the most important tool [to promote] our country's economy and future, and even independence."[91]

The MHP's idea that one cannot oppose innovation, *even though the related legislation has significant flaws and requires extensive re-elaboration,* was also shared by the CHP. As one CHP deputy noted, innovation is one rare field on the importance of which there is an overarching consensus in Turkey. Therefore, "no one can oppose [innovation]."[92] Furthermore, the CHP also attributed unrealistic expectations to innovation and R&D, whereby the two words seemed to embody the magical powers of a skillful wizard, who can enable every wish with a single act. For instance, one CHP deputy noted, "we support this draft [R&D law]. Do you know why? Because we respect the purpose of this draft, its name, R&D, science and technology, modernization, development, economic development, and support of SMEs...[although] the draft does not support these [concerns]...we support [the draft]."[93]

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[90]<https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20077&P5=B&PAGE1=27&PAGE2=27> (accessed 21 December 2016).
[91]<https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20095&P5=B&PAGE1=1&PAGE2=79> pp.21 (accessed 11 December 2016).
[92]<https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20077&P5=B&PAGE1=1&PAGE2=54> pp.37 (accessed 11 December 2016).
[93]<https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20077&P5=B&PAGE1=1&PAGE2=54> pp. 26 (accessed 11 December 2016).

The CHP agreed with the MHP on some other points as well. Like the MHP, the CHP also had hesitations about the role of international firms in the Turkish economy. For instance, one deputy argued that in case public research institutes in Turkey would not be supported by the Turkish governments, and at the same time foreign firms that operate in Turkey would be supported to conduct R&D, this would "surrender the strategic investment areas to the monopolists [foreign firms]."[94] This would lead "the national firm of the other country to create monopoly in Turkey."[95] This, in turn, would harm other foreign firms in Turkey by disturbing competition. However, like the MHP, the CHP welcomed foreigners on the condition that it would suit national agenda.

To conclude, in line with the broad societal concensus, the opposition has perceived innovation and R&D *as indispensable elements of economic success*. Moreover, the opposition perceived innovation as a phenomenon that *cannot be opposed, since innovation is thought to promote modernization, national dignity, and independence.* The opposition has also promoted a *Turkish version of an innovation system*, and *conditionally welcomed foreigners*. Overall, this ideational stance has motivated the opposition to support AKP on key R&D legislation *–even though the legislation in question has been harshly critized by the opposition in many respects* (Chapter 3).

4.2 The opposition's institutional weakness in R&D policy-making

The existence of a weak opposition in Turkey during the 2000s is a discussion point in many scholarly works that concentrate on the political economy of AKP period. Whether the focus is placed upon the AKP's unprecended success in Turkish politics in the new millennium (Öniş 2012, 135), or the interaction between democracy, polarization, and identity in Turkey during

[94]https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20075&P5=B&PAGE1=1&PAGE2=59 pp. 50 (accessed 4 October 2016).
[95] Ibid.

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the 2000s (Keyman and Gümüşçü 2014, 55–57; Keyman 2014, 25), or globalization and social democracy in Turkey (Keyman and Öniş 2007, 221–24), the opposition's overall weakness is said to influence Turkish political economy in many different ways.

In the Turkish political economy scholarship, 'weak opposition' in the 2000s primarily refers to *the opposition parties' inability to win elections*, and *incapacity to challenge the AKP's electoral dominance*. Many related factors are put forward to explain the opposition's 'weakness' in this regard. To begin with, the opposition has been fragmented in broad terms in Turkey during the 2000s. Whereas "key segments of the Turkish population, such as middle-class secularists, ultra-nationalists and the Kurds, remain deeply suspicious of the AKP's policies, the opposition [has] continue[d] to be highly fragmented [and] none of the opposition parties [have been] close to mounting a serious challenge to undermine the AKP's electoral dominance" (Öniş 2012, 136). For instance, even though the MHP and the Peace and Democracy Party (BDP), two opposition parties that were represented in the parliament, collected almost one-fifth of the vote, they were premoninatly sectarian parties and represented ultra-national and the Kurdish elements in society, respectively (Öniş 2012, 148).

Furthermore, in regards to the main opposition party in Turkey in the last fifteen years, that is the CHP, (i) the CHP's fragmented base of political support (identity-based hyper-secularists vs. class-based social democrats) (ibid.), (ii) the CHP's failure in formulating encompassing policies that can adequately address Turkey's broad social transformations (Keyman and Gümüşçü 2014, 55–57), and (iii) certain leadership problems (absence of a charismatic leader akin to Recep Tayyip Erdoğan) (Keyman 2014, 25), are cited as important factors that have undermined the CHP's ability to generate a cross-class and broad-based electoral coalition to cope with the AKP's electoral prowess in the new millennium.

Even though implicit in many analysis, the Turkish political economy literature suggests that the opposition parties have failed to formulate effective policies in Turkey, *since they have*

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lacked a proper, and institutionalized, policy-making mechanism. This dissertation focuses on this dimension of the issue. Thus, 'weak opposition' *does not* refer to the opposition parties' incapacity to challenge the AKP's electoral dominance in this thesis, although the discussion feeds back to this argument. Rather, 'weak opposition' directly refers to *the opposition's invisibility in R&D policy-making processes –which stem from certain institutional weaknesses*. This thesis argues that this 'weakness' of the opposition has also *led it to support AKP on key R&D legislation in the parliament* in addition to the influence of technological nationalism. Put differently, even though the opposition held significantly different views on R&D policy (Chapter 3), it supported AKP in the end of the day, *since the opposition (i) lacked an evidence-based, and institutional, policy-making mechanism on R&D policy, and (ii) failed to detect, and coordinate with, potential 'allies' in the political economy*.

To begin with, even though the opposition has insistently underlined the importance of innovation and R&D for Turkey in many respects, including positive impacts on growth, development, modernization, and national independence, it *does not* seem to have a *clear agenda* on how to pursue R&D policy, and *does not* seem to have an *institutional stance on the issue*. One example illustriates this point.

In regards to the number of full-time-equivalent R&D personnel that was required to establish a R&D center, the CHP proposed two contradictory suggestions in the relevant parliamentary discussions. As outlined in the Ministry's draft law, firms that employed at least 50 full-time-equivalent R&D personnel were eligible to establish a R&D center, and firms that employed at least 500 full-time-equivalent R&D personnel were eligible to benefit from certain additional incentives. While some CHP deputies proposed to keep the numbers as they were, some other CHP deputies proposed to reduce the requirements. *Both sides spoke on behalf of the party*.

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On the one hand, a CHP deputy who evaluated the whole draft on behalf of the CHP on 7 February 2008 suggested to keep the 50-personnel requirement as it is. On the other hand, another CHP deputy, who also spoke of behalf of the party, suggested a reduction in the requirement only a day later, on 8 February 2008. After having noted that the requirement effectively excluded SMEs from the picture at the expense of large-firms (almost all SMEs in Turkey employ less than 50 personnel *in total*), and that one does not necessarily need 50 personnel to conduct R&D in contemporary world, the deputy opposed the personnel requirement on behalf of the party. In fact, five CHP deputies, including the deputy who delivered the speech, issued a motion to reduce the requirement to ten on 8 February 2008. Since both deputies conveyed their ideas on behalf to the CHP, it was not clear whether the party had an organizational stance on the matter.[96]

Furthermore, the ways that the opposition parties made their proposals during the parliamentary discussions strongly suggest that (i) those propositions were not based on prior research and evidence, and (ii) the opposition was not well-prepared on *specific* subjects that were to be discussed –whether a specific point related to a specific article, or R&D in general. In many cases, opposition deputies delivered speeches *that were too broad in content* that they tended to explain everything but nothing at the same time, or touched upon points that were *irrelevant* to the discussion that was supposed to be going on.

Most importantly, the opposition parties did not have any effective connections with other political economy actors in the Turkish innovation system, although many actors in Turkey shared some of their main policy prescriptions in regards to R&D policy. Therefore, a potential collaboration between the actors would have been possible if the opposition had pursued its agenda effectively. This has been the case for the CHP especially.

[96] The CHP's election bulletins do not provide information on this specific issue.

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To exemplify, the interview evidence and latest publications of some bureaucrats in Turkey suggest that the CHP's strategic and sectoral approach to R&D fund allocation, with an emphasis on *output quality* (rather than *input increases*), resonate very-well with many bureaucrats in Turkey. In fact, putting aside some positive steps that have been taken by the AKP governments during the 2000s, many bureaucrats characterized the logic of R&D fund allocation in Turkey as populist –with regards to proliferation of resources in the absence of evidence-based policy-making mechanisms (Chapter 6). Furthermore, many bureaucrats called for a more sophisticated, detailed, and to-the-point strategy in R&D fund allocation by taking regional differences into account. In addition to the bureaucracy, TÜSİAD also proposed alternative innovation governance mechanisms, whereby regional differences were considered. All these suggestions reasone quite well with the CHP's stance on R&D policy.

However, the interview evidence also suggests that not only the CHP, but also other opposition parties as well, *has been invisible in R&D policy-making processes –there have been no effective connections with relevant political economy actors in the innovation system in regards to R&D policy*. If the opposition would have succeeded in establishing such connections, would that have been effective? After all, the bureaucracy has been heavily politicized in Turkey in the 2000s due to continuous executive interference (Chapter 5). Furthermore, the private sector in Turkey does not really seem to have a genuine interest in substantial technological upgrading (Chapter 6). Although important, these are different issues. The essential point is that, the opposition's institutional weaknesses in R&D policy-making also hindered the formulation and deliberation of alternative R&D policy options in Turkey in the 2000s.

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4.3 Conclusion

This chapter has argued that the combined influences of technological nationalism and the opposition's institutional weakness in R&D policy-making in Turkey have turned down the opposition's voice in the parliament during the 2000s, and have led the opposition to support AKP on key R&D legislation. Given the fact that the opposition could have participated more effectively in R&D policy-making, as many bureaucrats have actually been in favor of many policy prescriptions that it proposed, the above-mentioned characteristics of the opposition has influenced R&D policy by *hindering the effective formulation and deliberation of alternative policy options*.

This finding provides support for the broad claim that the AKP's unparalleled success in Turkish politics partly stemmed from weak opposition during the 2000s (Keyman and Gümüşçü 2014, 55–57; Öniş 2012, 136; Keyman 2014, 25). The weakness in question stemmed from the opposition's institutional weakness in policy-making –in other words, *its incapacity to notice and get in touch with potential allies in the political economy*. This has been the case in a policy domain (R&D) that is perceived as an indispensable ingredient of economic growth and development, indication of modernization, and a key element in national independence and national dignity.

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CHAPTER 5: The Turkish State's Internal Structure and Influences on R&D Policy-Making Processes

As documented in Chapter 3, political parties have opposing views on R&D policy in Turkey. In contrast to the AKP's horizontal policy design, the CHP prefers to concentrate resources on relatively developed regions and places with a strategic focus. Both the CHP and the MHP promote a different legal framework to organize R&D at the macro-level in comparison to the AKP. However, even though the opposition parties have their own perspectives on R&D policy, they do not push them strongly in the parliament. Technological nationalism and institutional weaknesses in R&D policy-making turn down the opposition's voice (Chapter 4).

As discussed in Chapter 2, the ideational world of the parliamentary elites constitutes only one layer of R&D policy-making. Further questions add up to the story. How does the key R&D legislation comes into existence, and who takes part in the process? Once the legislation is enacted, how do the governing elites ensure the implementation of their preferences? How does the government's interaction with other actors in the innovation system influences R&D policy? These questions led one to investigate the state's internal structure –the interaction between the executive and autonomous innovation agencies. The developmental state literature offers useful concepts to elaborate this issue (Chapter 2).

In the light of the theoretical framework outlined in Chapter 2, this chapter concentrates on the bureaucracy's autonomy and embeddedness in the Turkish innovation system. A special emphasis is placed upon the repercussions on R&D policy. To begin with, Section 5.1 briefly reviews the AKP's interaction with independent regulatory agencies (IRAs) in Turkey during the 2000s. This elaboration sets the stage for the subsequent examination of the innovation system. Section 5.2 documents the executive's continuous interventions in key innovation organizations during the 2000s –especially in the context of TÜBİTAK. Section 5.3 documents

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the influence of politically-motivated interventions on R&D policy in Turkey in the 2000s. Section 5.4 concludes.

5.1 The AKP and independent regulatory agencies

In reaction to the 1980s' globally-observed structural changes, as the pendulum of economic thinking swung away from a state-led development strategy towards a market-oriented one, the discussions on 'the regulatory state' re-emerged in the 1990s (Majone 1994; Majone 1999; Phillips 2006; K. Yeung 2010). Defined in various ways, the regulatory state is used as an analytical construct that aimed to "encapsulate a series of changes in the nature and functions of the state that have resulted from a shift in the prevailing style of governance following sweeping reforms in the public sector within many industrialized states throughout the 1980s and 1990s" (K. Yeung 2010, 64). The regulatory state is commonly defined as a "rule-based, technocratic and juridical approach to economic governance, in which there is a greater emphasis on institutional self-regulation" (Phillips 2006, 24).

Thereby, the 'regulatory state' has been different from the 'interventionist state.' While the "interventionist state was characterized by a high level of centralization in administration and policy making, the regulatory state [relied] on extensive delegation of powers to independent institutions [including] regulatory agencies…commissions…[and] the judiciary" (Majone 1999, 1).[97] In this regard, the establishment of independent regulatory agencies (IRAs) has become a defining trait of the regulatory state (Gilardi 2008). Not only in the developed world, but also in the developing world, the regulatory state has become an important phenomenon (Minogue and Carino 2006). Some scholars labelled the re-emergence of regulation since the 1990s as "the rise of regulatory capitalism" (Levi-Faur 2005, 22).

[97] Similarly, the regulatory state is also different from the 20th century developmental state (Jayasuriya 2005, 382–84).

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Turkey has been no exception in regards to the re-emergence of the regulatory wave (Bakır and Öniş 2010). In line with the global trends, several IRAs were established in Turkey during the 1990s and the 2000s. Nine IRAs were in operation in the early years of the new millennium –all having a high degree of independence (Şanlısoy and Özcan 2006, 115). Those included the Banking Regulation and Supervision Agency, and the Capital Markets Board (finance); the Information Technology and Communications Authority, and the Energy Markets Regulatory Agency (energy); Competition Authority (antitrust); the Sugar Agency, and the Tobacco and Alcohol Market Regulatory Agency (agriculture); and the Higher Board for Radio and TV, and the Public Procurement Agency (Emek, Zenginobuz, and Acar 2002, 150–62). These agencies aimed at rationalizing decision-making processes by promoting technocracy and limiting daily politics' negative influence on agenda-setting.

Despite the valid reasoning behind their establishment, and the autonomy that they enjoyed in the first half of the 2000s, the fate of the IRAs has changed drastically in Turkey since the second half of the 2000s. The essential problem has been that the IRAs are established in a political economy where a strong state has traditionally pulled the strings in the economy (Tan 2002, 32). Furthermore, the inherent tug-of-war between politicians and bureaucrats, and the ruling elites' regular practice of undermining the bureaucracy's power by politicizing recruitment processes (Heper 1987), has posed an imminent challenge for the effective functioning of independent authorities.

Almost inescapably then, the IRAs have been put under immense pressure by the political leadership in Turkey, and their independence has been curtailed through various formal and informal mechanisms (Özel 2012; Çetin, Sobacı, and Nargeleçekenler 2013). To begin with, there had been crucial changes in the legal framework. In a decree-law that was issued in June 2011 (643), it was stated that, "the IRAs may be directly attached to the respective ministries, based on the order of the Prime Minister and the President's approval" (Özel 2012,

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120). In another decree-law (646), it was further noted that, “the [respective] minister has the authority over all transactions and activities of the related, attached and affiliated agencies” – including IRAs (ibid.) In addition to formal mechanisms, the most prevalent way of bypassing the IRAs has been to appoint board members based on political considerations (ibid.). In fact, this has been a traditional practice of the Turkish ruling elite (Biddle and Milor 1997, 295).

Overall, the experiences of the IRAs suggest that the AKP period did not reflect a break with the past in regards to the executive–bureaucracy interaction. On the contrary, the AKP’s politically-motivated interferences with IRAs have been a continuation of a regular practice in Turkish politics: the governments avoid delegating power to any independent authority. In consequence, the IRAs has ended up as authorities that “work like extensions of the respective ministries” (Özel 2012, 122).

The above investigation of the IRAs in Turkey does not do justice to the complexity of the issue. The political interferences with IRAs has had important political economy consequences including distributional impacts (Bakır and Öniş 2010; Buğra and Savaşkan 2014), and some IRAs managed to enjoy a relatively high degree of independence in comparison to others (Özel 2012, 126). However, one main conclusion suffices to further the elaboration within the context of autonomous innovation organizations: *the AKP governments had continuously interfered with the IRAs throughout the 2000s and undermined the agencies’ independence in practice*. Accordingly, “de facto functioning of the regulatory agencies has diverged significantly from what is asserted by the respective laws” (Özel 2012, 122).

It is important to add that this kind of a political pressure on the bureaucracy has also been existent in other domains during the AKP period. In a recent study, Luca (2016) documents how the economic bureaucracy failed to preserve its full autonomy vis-à-vis the political elites in Turkey during the 2000s. As Luca (2016, 3) concludes based on semi-structured face-to-face interviews conducted with bureaucrats in Turkey, “the institutional

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characteristics of the Ministry of Development…have positively contributed to a technical management of investment projects…however…the organisation is insufficiently insulated vis-à-vis the government…[and] the effective management of funds is hence strongly dependent on the political elite's 'will to deliver.'" Once again, the bureaucracy's lack of autonomy vis-à-vis the political leadership has been a defining trait of the Turkish state's internal structure (Biddle and Milor 1997, 293–97; Heper and Keyman 1998, 263; Buğra 1994, 18–32; Heper 1985), and there has been a continuation in this regard in the AKP period.

The highly-politicized nature of IRAs and the bureaucratic structures in Turkey, and the traditional practice of undermining the bureaucracy's autonomy via formal and informal channels, indicate the overall climate in which key innovation agencies has functioned during the last two decades. Consequently, and almost in a deterministic fashion, the fate of innovation agencies has not been different from their counterpart bureaucratic apparatuses in the Turkish political economy in the AKP period.

5.2 Executive interference in autonomous innovation organizations

The AKP has extensively interfered with the workings of key innovation agencies in Turkey during the 2000s. By relying on traditional tactics that are used by the Turkish ruling elite to curtail the decision-making autonomy of the bureaucracy (ibid.), the AKP has put immense pressure on autonomous innovation organizations. The most important ones included TÜBİTAK, TÜBA, and KOSGEB.

To begin with, the amendment of TÜBİTAK's foundation law gave birth to a long-process in which innovation agencies' autonomy vis-à-vis the AKP governments was extensively debated in the parliament and in the media. Furthermore, there have been significant politically-motivated layoffs and appointments in all organizations including TÜBİTAK and

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KOSGEB.[98] The AKP governments have also been accused of stuffing bureaucratic organizations with their own cadres, relatives, and friends, including key innovation agencies.[99] Arousing great media attention, there have been important changes in the election procedure of TÜBA members. Those changes are said to undermine the Academy's autonomy vis-à-vis the political leadership.

This section primarily focuses on the AKP-TÜBİTAK interaction as a representative case of the overall climate in the innovation system. The specific attention that has been paid to TÜBİTAK has additional rationale. First, TÜBİTAK is arguably the most important and institutionalized innovation governance agency in Turkey. Founded in 1963, TÜBİTAK is acting as the secretariat of the SCST –which is the highest-ranking STI policy-making body in Turkey. In line with its dominant role in the Turkish innovation system, TÜBİTAK is also the national coordination office for the EU Research Framework Programs. Second, TÜBİTAK actively involves in every dimension of innovation policy-making from design to implementation. Accordingly, the organization also allocates R&D funds to the private sector (Chapter 3). In fact, there has been a concentration of resources at TÜBİTAK during the 2000s.

Third, since TÜBİTAK is arguably the *most institutionalized* innovation agency in Turkey, it is a good case to focus on. The problems that TÜBİTAK face in regards to political interference or institutionalized policy-making *cannot overstate* the main problems of the Turkish innovation system. On the contrary, they might *understate them*. Last, since TÜBİTAK is the institution where the expertise in policy-making is mainly accumulated, the organization provides expert opinion to other innovation agencies in Turkey. Thus, TÜBİTAK has a privileged position in resource allocation. Based on all these considerations, this section turns a keen eye on AKP-TÜBİTAK interaction during the 2000s.

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[98] "KOSGEB'e FETÖ baskını," *Yeni Şafak*, May 2015, 2016; "KOSGEB'e paralel operasyonu," *Sabah*, May 25, 2016.
[99] "Koç'tan 85 kişilik torpil listesi iddiası," *Radikal*, December 7, 2014; "AKP'nin 85 kişilik torpil listesi' iddiası Başbakan Davutoğlu'na soruldu," *T24*, December 8, 2014.

To begin with, TÜBİTAK is defined as an autonomous organization in administrative and financial affairs. As outlined in the law, the Science Board governs the organization. The Science Board elects its own members, who are then appointed by the Prime Minister. The Science Board also nominates the President of TÜBİTAK, who is appointed by the President of Turkey upon the recommendation of the Prime Minister. Before 2011, TÜBİTAK was directly connected to the Prime Ministry. Since the foundation of the new MoSIT in 2011, TÜBİTAK is now connected to the Ministry.

The fact that the Prime Minister and the President of Turkey are involved in the election processes of the Science Board members and the President of TÜBİTAK immediately raises questions about the organization's autonomy. The broad question is, to what extent an organization can be autonomous under the condition that top state officials involve in the election processes of an organization's leading cadre?[100] This is a legitimate concern, as this type of a governance structure paves the way for direct political interference.

However, the structure alone does not suggest the existence of such involvement. The state officials can very-well comply with the decisions of the Science Board and the President of TÜBİTAK. To exemplify, the then Prime Minister who was the leader of the then pro-Islamic Welfare Party (RP) assigned a State Minister to supervise TÜBİTAK in the mid-1990s. In the media, the RP was accused of stuffing TÜBİTAK with its own cadres. However, as the then President of TÜBİTAK noted, who took office before the RP came to power, the State Minister did not attempt to intervene with the assignments at TÜBİTAK. On the contrary, the Minister supported the organization's autonomous structure.[101] Thus, although top state officials' involvement in election processes raises concerns about an organization's autonomy, it does

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[100] "TÜBİTAK tartışması ve özerklik," *Radikal*, October 29, 2003.
[101] "Terzioglu says scientific organizations like TÜBİTAK should be autonomous," *Hurriyet Daily News*, October 8, 1996. Interviewee 21 also noted that TÜBİTAK was an autonomous agency during the 2000s.

not dictate the existence of an active political interference. A further analysis is required to see if there had been any political involvement with TÜBİTAK during the AKP period.

Without a doubt, *the AKP governments have actively interfered with the workings of TÜBİTAK during the 2000s*. This is first and foremost evident in the hotly-debated amendment process of TÜBİTAK's foundation law.[102] Shortly after its rise to power in 2002, the AKP attempted to amend TÜBİTAK's foundation law. The foreseen amendment granted the Prime Minister the right to directly appoint the President and the Science Board members of TÜBİTAK for one time only. On 9 October 2003, the amendment was discussed in the parliament. Despite the opposition's objections, from the perspective of which the amendment was a clear sign of political interference with the workings of an autonomous organization, it was adopted thanks to the AKP majority in the parliament. Then, the draft was passed to the President for approval. In line with the opposition's concerns, the President exercised his veto power.[103] Then, by insisting on its own stance, the AKP once again proposed the same amendment on 10 December 2003. Despite the opposition's repeated objections, the amendment was passed due to the AKP majority. Since the President did not have the second veto power, the draft law was approved (Law 5016).

However, the law remained in execution only for about a month. After 143 deputies filed an appeal to the Constitutional Court, the Court stopped the law's execution. Thereafter, the same process re-occurred two years later in 2005. First, a new amendment had passed from the parliament despite the opposition, and got a veto from the President. Then, the amendment had passed from the parliament for a second time, and the President approved the amendment (Law 5376). And then, 123 deputies had filed an appeal to the Constitutional Court, and the Court overturned the law. Finally, TÜBİTAK's foundation law was amended successfully in

[102] For a review of this process see Pak (2005).
[103] See the relevant press release of the Presidency of Turkey by following the link below (in Turkish). http://www.tccb.gov.tr/basin-aciklamalari-ahmet-necdet-sezer/1720/6028/5001-sayili-kanun.html (accessed 18 June 2016).

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2008 when the incumbent President had left the office and one of the AKP's senior members had become the new President of Turkey in 2007. The draft did not get any veto, and the Constitutional Court rejected the appeals.

To open a parenthesis, the President who exercised his veto power four times during the amendment process (2002–2008), Ahmet Necdet Sezer, holds the 'veto record' in Turkish political history.[104] In his incumbency (2000–2007), Sezer vetoed 62 laws in total, and 50 of those were during the AKP period (2003–2007). This was twice as much as Kenan Evren, who vetoed 27 laws during his incumbency. Moreover, Sezer vetoed 717 joint decrees in seven years, and 447 of those were during the AKP period. More importantly, Sezer vetoed 21 appointments made by the Council of Ministers; 18 of them during the AKP period.

Due to the vetoes, many key organizations in Turkey had to be run by representatives in the first half of the 2000s including TÜBİTAK. During 2004–2008, Nüket Yetiş governed TÜBİTAK as a representative, although the Council of Ministers appointed her as the President of TÜBİTAK in 2004. The rationale of the veto was based on the Constitutional Court decision, which deemed the amendment unconstitutional in 2004.[105] The struggle between the 'secular' and 'conservative' elites in Turkey had such repercussions on the bureaucratic structures in the first half of the new millennium.

The amendment process demonstrates the politicized character of TÜBİTAK in the 2000s. Further developments also validate this phenomenon. One such development is related to the clash between the Gülenist movement, a well-organized religiously motivated group, and the AKP governments. The conflict between the two previous allies emerged in the late 2000s and intensified later. The Turkish governments declared the group as a terrorist organization, as the movement was said to capture various state institutions to run a 'parallel state.' This 'parallel state' was said to have an agenda that contradicted with the national goals of Turkey.

[104] "Sezerden veto rekoru!," *İnternet Haber*, January 3, 2007.
[105] "Sezer'den TÜBİTAK Başkanı'na veto," *Hürriyet*, January 31, 2004.

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This conflict had significant impacts on the Turkish bureaucratic structures, as many personnel in various organizations had been laid-off. For instance, approximately four thousand individuals had been taken into custody in relation with the fight against the 'parallel state' during 2014–2016, and approximately 822 individuals had been arrested.[106]

In this context, the corruption scandals of 2013, known as the 17–25 December operations, had repercussions on TÜBİTAK. A significant number of personnel, who were allegedly considered as members of the Gülenist movement, were dismissed from the organization including leading cadre members. To exemplify, four days after his resignation, the former president of TÜBİTAK was taken into custody by the Police on charges of malpractice.[107] The former President's assistant and one employee were also taken into custody. These events were said to be connected with the fight against the 'parallel state.'[108] In addition, 28 employees of TÜBİTAK and the Telecommunication's Directorate, including the former vice-president of TÜBİTAK, were detained for wiretapping the encrypted phones of top state officials.[109] In regards to sixteen TÜBİTAK personnel who were taken into custody, the then Turkish Minister of Science, Industry, and Technology noted, "they are doing everything except for scientific research."[110] Concerning the personnel changes in TÜBİTAK, a number of opposition deputies asked written questions in the parliament.

One instance reflects the extent and the importance of the layoffs in TÜBİTAK during the 2000s. In 2015, TÜBİTAK rejected a local court's request for evidence analysis due to lack of qualified specialists following the massive layoffs. As the then President of the Informatics and Information Security Advanced Technologies Research Center noted in a written statement to the court, "regretfully, we are not able to respond to your request positively due to the intense

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[106] "FETÖ/PDY operasyonlarında gözaltı sayısı 4 bini aştı," *Anadolu Ajansı*, June 1, 2016.
[107] "Former head of Turkey's top science body released," *Hurriyet Daily News*, April 14, 2015.
[108] Temel, Yüksel, "TÜBİTAK'a Paralel kadrolaşma operasyonu," *Sabah*, April 15, 2015.
[109] "Former head of Turkey's top science body released," *Hurriyet Daily News*, April 14, 2015.
[110] "Bakan Fikri Işık'tan TÜBİTAK operasyonu yorumu," *CNN Turk*, April 29, 2015.

changes over the past six months in our staff who can conduct a digital analysis, which resulted in our institution having a lack of experts for your request."[111]

The coup attempt of July 2016 led to further dismissals at TÜBİTAK. As of 29 August 2016, more than two-hundred TÜBİTAK personnel were laid-off.[112] From my perspective, the Turkish state has all the right in the world to react strongly against any movement that aims at capturing the state apparatus and overthrowing a democratically elected government through illegal means and violence. In fact, any state in the world should have this kind of a right. However, this issue is beyond the scope of this inquiry. The point that is essential within the context of the current analysis is, the struggle against the Gülenist movement, and the extensive lay-offs that followed, clearly signaled the politicized nature of the bureaucracy in Turkey.

The amendment process of TÜBİTAK's foundation law and the subsequent developments reflect the executive's political control over the organization, and this situation hints at the organization's later AKP-friendly tone. In fact, many incidents revealed TÜBİTAK's close stance to the party during the 2000s. One such example concerned the debates on the theory of evolution.

In Turkey, one of the well-known science magazines is 'Science and Technology' that is published by TÜBİTAK every month. In early February 2009, the 'Science and Technology' editorial staff decided to devote a fifteen-page cover story on evolution to attract attention to the 200th anniversary of Darwin's birth (MacKenzie 2009). The issue, including the cover story, was sent to the press on 28 February 2009. However, the press was stopped a few days later once the vice-president of TÜBİTAK intervened in the process (ibid.). The issue in question came out a week late, without the Darwin article, and the cover story was replaced with a piece on global warming.

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[111] Saymaz, İsmail and Erdinç Çelikkan, "Turkey's top scientific body has no digital analysts left amid 'political' layoffs," *Hurriyet Daily News*, March 9, 2015.
[112] "TÜBİTAK'ta darbe operasyonu: 201 kişinin görevine son verildi," *Cumhuriyet*, August 29, 2016. The news refers to the public statement of the Turkish Ministry of Science, Industry, and Technology.

The vice-president of TÜBİTAK declared that he did not order the piece's removal, and denied any censorship accusations. As the vice-president noted, the piece was "prepared hastily without regard to institutional procedures" (ibid.). However, as the editorial stuff noted in a public statement, the vice-president ordered the piece's removal as it was considered as inappropriate within Turkey's "sensitive environment" (ibid.) In the end of the day, the piece in question appeared as a cover story a few months later.

However, in the same lines, TÜBİTAK avoided the publication and sale of books in its archives which promoted the theory of evolution in 2013. Works of Richard Dawkins, Alan Moorehead, Stephen Jay Gould, Richard Levontin and James Watson were among those publications.[113] The dominant view among the conservatives in Turkey asserts that the theory of evolution contradicts with the teachings of Islam.[114] Thus, the AKP has its own stance on the issue. The party's views on the theory of evolution was revealed by the then Minister of National Education in 2008, as the Minister considered Darwinism as a "weapon of materialists and infidels."[115] In 2016, another AKP deputy suggested the removal of Sigmund Freud and Charles Darwin from the Ministry of National Education's books, to replace them with the teaching of tawhid –the oneness of God.[116]

As an autonomous agency with the goal of shaping Turkey's STI policies in a rational manner, TÜBİTAK is expected to follow scientific principles that are detached from any ideological, political, religious, or other non-scientific considerations. By acting in line with the government's world-view instead of scientific principles, TÜBİTAK casted doubts on the quality of policy-making processes.

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[113] "Turkey's science state council halts publication of evolution books," *Hurriyet Daily News*, January 14, 2013.
[114] Although the issue is open to debate, this is the dominant view among the conservatives in Turkey (at least in the media).
[115] Steinvorth, Daniel, "A Muslim Creationism Debate: Taking on Darwin in Turkey," *Spiegel Online International*, September 23, 2008.
[116] "AKP'nin sıradaki hedefi Freud ve Darwin," *Cumhuriyet*, March 3, 2016; "Darwin ve Freud yerine müfredata 'Tevhid' inancı geliyor," *Yeni Akit*, March 3, 2016.

In regards to influences on R&D policy, one major consequence of the AKP's intervention in TÜBİTAK was the change in the organization's leading cadre in the first half of the 2000s (Pak 2005).[117] This change was realized during the amendment process of TÜBİTAK's foundation law. To begin with, the Science Board of TÜBİTAK re-elected its then incumbent president for his second term in office on 1 February 2003. The first term of the incumbent was expiring on 30 May 2003. The Prime Ministry was notified about this decision on 6 May 2003. However, the then Prime Minister Recep Tayyip Erdoğan did not pass this decision to the President for approval. Furthermore, the Science Board elected six new members to the Board, since the tenure of six members was expiring on 21 September 2003. This decision was also passed to the Prime Ministry. Erdoğan did not approve this decision as well. Following the refusal, the Science Board could not conduct further meetings, and lost its quorum of decision.[118]

Meanwhile, Erdoğan appointed six new Science Board members within the one-month period when the first amendment was put into force and eventually expelled by the Constitutional Court. The new Board conducted its first meeting on 11 January 2004. Majority of former members were replaced with new ones in this meeting (Pak 2005). Furthermore, the new Board elected Nüket Yetiş as the new President of TÜBİTAK. As noted before, the President of Turkey exercised his veto power on this decision, since the Constitutional Court expelled the amendment based on which the new members (who were appointed by Erdoğan) elected Nüket Yetiş as the President.

During the turbulent amendment process, four vice-presidents of TÜBİTAK resigned from their posts by declaring that TÜBİTAK had been "taken under political control" (Grüner 2005, 1055). Several directors of TÜBİTAK's research institutes were also resigned or

[117] Interviewee 21 also noted this point.
[118] See the relevant press release of the Presidency of Turkey by following the link below (in Turkish). http://www.tccb.gov.tr/basin-aciklamalari-ahmet-necdet-sezer/1720/6028/5001-sayili-kanun.html (accessed 18 June 2016).

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dismissed, and replaced by government appointees. This included the Marmara Research Center, the main research facility of TÜBİTAK (ibid.).

This whole process attracted much attention in Turkey and led to debates in the media. Unlike the domain of R&D policy that this thesis focuses on (allocation of R&D funds to the private sector), the opposition parties and the media were not silent about the amendment process of TÜBİTAK's foundation law. The politization of TÜBİTAK attracted the European Commission's attention as well. In *Turkey 2004 Progress Report*, the Commission advised the Turkish government to solve TÜBİTAK's administrational problems. In the end of the day, extensive shifts took place in TÜBİTAK's leading cadre in 2004 –long before the eventual amendment of the foundation law in 2008.

5.3 Executive interference: Shifts in innovation agencies' stance on R&D policy

The shift in TÜBİTAK's leading cadre in the first half of the 2000s directly influenced the organization's stance on R&D policy. While TÜBİTAK held a position that was akin to the CHP's during the 1990s, as the organization preferred to concentrate resources on relatively developed regions and places with a strategic focus, it changed its perspective once the AKP-backed cadre took office in 2004 amid an amendment in TÜBİTAK's foundation law. Thereafter, TÜBİTAK adopted a horizontal approach to R&D policy and did not place a strong emphasis on strategic sectors.

The abandonment of Vision 2023 project is an illustrative case in point. The Vision 2023 is the first-ever national science and technology foresight exercise conducted in Turkey at the turn of the new millennium. The goals of the project were to build a science and technology vision for the country, determine strategic areas and sectors for R&D, suggest STI policies for

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a twenty-year period, create a participatory environment in policy-making, and increase public awareness on innovation-related matters.[119]

Vision 2023 was uniquely successful in terms of embeddedness, as more than two thousand stakeholders and experts took part in it. The project was directed by a supreme board, where many organizations that directly involve in STI were represented. Comprised of sixty-five members, the board represented governmental and non-governmental organizations, trade associations, the private sector's umbrella organizations, sectoral associations, universities, and financier organizations. An executive committee directed the project, where TÜBİTAK, the then SPO, the Undersecretariat for Defense Industries, and TTGV were represented at high levels. A project team also took part in the preparation processes, having both TÜBİTAK and non-TÜBİTAK members.

To reflect more on the embedded nature of Vision 2023, approximately 250 experts from the universities, the public sector, and the private sector participated in the project via panels. Twelve panels and 192 panel meetings were conducted within a year, and another thirty-six panels were organized with the participation of additional experts. In addition to the panels, the project was subjected to a two-stage expert evaluation via the Delphi method. 7000 experts were called for the evaluation via mail and e-mail, and 2400 experts eventually involved in the process. Once the finalized panel reports were presented to TÜBİTAK, eight strategic technology groups were formed based on the panels' findings and suggestions. With approximately 140 members, the strategic technology groups determined the targets, policies, and strategies for the prioritized technology areas in Turkey. A strategy committee with eight TÜBİTAK and non-TÜBİTAK members took the stock, and presented a final report to TÜBİTAK. The report was approved by the SCST in 2005.

[119] For the description of Vision 2023 project's preparation process, see Saritas, Taymaz, and Tumer (2007), and Aykut Göker, "Rafa kaldırılan bilim, teknoloji ve inovasyonla ilgili strateji ve politika tasarılarımız hakkında", 2005, pp. 6. <http://www.inovasyon.org/pdf/AYK.Ulusal_inovasyon_Girisimi_icra_Kuruluna.pdf> (accessed 11 May 2016). The below elaboration on Vision 2023 project relies on these two sources unless otherwise mentioned.

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Vision 2023 was initiated before the AKP came to power and the subsequent shift in TÜBİTAK's leading cadre took place. Therefore, the preparation and finalization process of Vision 2023 was overlapped with the turbulent events at TÜBİTAK. Once the AKP-backed cadre took office in 2004, TÜBİTAK did not pursue or expand on Vision 2023 project. This was in parallel to the AKP's strategy, as the study's outcomes and prescriptions were not mentioned in the short and medium term plans, and were not reflected to policy-making bodies' subsequent decisions.[120] As a previous high-ranking bureaucrat noted while discussing the broad policy-discontinuity problem in Turkey:[121]

> [Policy discontinuities] exist... True, I'll give you that. When we look at it, the simplest example is TÜBİTAK Vision 2023 project. They made more than 1500 individuals work on TÜBİTAK 2023 project. The immediate priority areas were determined; sectors were determined... This was a project where 1500-2000 or more individuals worked... The government changed [in 2002] and [the new government] destroyed it... Of course, this is a dynamic process. That is to say, you update the project, re-evaluate it, examine global developments, conjuncture, and domestic situation, you revise sections of the policy that do not fit, you remove the ones that do not fit at all, you replace them, etc... These can happen. However, to ignore a study altogether, this is not correct.

One TÜBİTAK report that was published in the mid-1990s is also indicative in regards to the shift in TÜBİTAK's stance on R&D policy during the 2000s.[122] In that report, TÜBİTAK favored the proposition that governmental support funds should be allocated to regions and organizations that already reached the level of excellence. This strategy was considered as the only way to utilize scarce resources effectively. For instance, the report proposed to support and upgrade existing technoparks instead of proliferating their numbers superficially. Furthermore, the report suggested to establish new parks (if necessary) in relatively developed regions and places. As noted in the document, "parallel to the excellence program, technoparks

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[120] Aykut Göker, "Rafa kaldırılan bilim, teknoloji ve inovasyonla ilgili strateji ve politika tasarılarımız hakkında", 2005, pp. 6. <http://www.inovasyon.org/pdf/AYK.Ulusal_inovasyon_Girisimi_icra_Kuruluna.pdf> (accessed 11 May 2016).
[121] Interviewee 16. Interviewee 2, interviewee 5, and interviewee 21 support. No interviewee claimed that Vision 2023 project was indeed implemented on the ground.
[122] TÜBİTAK, Yüksek Planlama Kurulu'nca VII. Beş Yıllık Plan Döneminde Öncelikle Ele Alınması Öngörülen Temel Yapısal Değişim Projeleri Kapsamındaki BİLİM ve TEKNOLOJİDE ATILIM PROJESİ Çalışma Komitesi Raporu, 1995.

that will be established in excellent universities, or technopolises that will be created in a few excellent areas, will be the building blocks of our preparation efforts for tomorrow's information society" (TÜBİTAK 1995, 65).

Furthermore, rather than an equality-based distribution that did not consider innovative capacities and capabilities of actors, TÜBİTAK proposed an allocation strategy that prioritized a selective distribution that was based on merit and capabilities. The report proposed to subsidize SMEs on a selective basis, as only SMEs that had the intention and potential to master high technology were considered as candidates to get governmental support. In fact, one previous bureaucrat highlighted TÜBİTAK's selectiveness and insistence on the quality of R&D investments during the 1990s as: "R&D is a matter of capability [and the goal is] to channel resources to those who have the capability."[123]

Regarding this last point, the interview evidence and investment patterns in the R&D sector strongly suggest that *the AKP has promoted flexibilizations in resource allocation criteria in the R&D sector during the 2000s, and lowered expectations on the quality of R&D investments.* This has been a political choice of the AKP governments, and complemented the party's horizontal policy design in regards to R&D fund allocation. In sharp contrast to its stance on the subject during the 1990s, TÜBİTAK embraced the AKP's views on the policy in the 2000s, and pursued relaxations in the resource allocation criteria. Thus, *the politicization of the bureaucracy has provided AKP the opportunity to pursue the policy as it sees fit during the 2000s.* These arguments require further elaboration.

To begin with, to be able to distribute R&D funds to a larger segment of society, the AKP has intentionally loosened the resource allocation criteria, based on which the quality of R&D projects and applications have been judged. The AKP's declared objective has been to promote R&D and innovation culture in Turkish society. First, almost all technopark

[123] Interviewee 21.

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applications are approved during the 2000s. Only few applications were rejected; and some of the rejected ones were approved later. The basis of rejections was more about procedural issues rather than quality concerns. The AKP's current vision is to establish at least one technopark in each city in Turkey. In addition, majority of R&D center applications were also approved during the 2000s. Likewise technoparks, the AKP's current goal is to proliferate R&D centers –first to increase the number from 300 to 500; and then to 1000.

In regards to technoparks, the relevant regulation states that the parks are to be established in Turkey in cities where there is 'sufficient R&D potential.' However, the regulation neither defines, nor elaborates, the 'sufficiency of potential' *by providing concrete thresholds*. For instance, the regulation asserts that, (i) park's geographical proximity to universities or research centers, (ii) local entrepreneurs' capacities, (iii) human capital potential, (iv) geologic characteristics, (v) social and technical infrastructure, and (vi) compatibility of a park's establishment with Turkey's development plans and goals, are some criteria that are taken into consideration in evaluation. However, the regulation does not define *concrete thresholds* based on which these dimensions are to be evaluated.

Furthermore, the regulation assigns various goals to a technopark (productivity increase, innovativeness, employment generation, etc.), but does not indicate *which goal is relatively more important that the others*. Likewise, nowhere in the regulation the broadly defined goals are elaborated in detail. The legislation does not indicate how much productivity increase, or innovativeness, or job creation is expected from a technopark. It neither sets a period in which a technopark needs to fulfill its goals, nor indicates if there is a difference between the first-generation technoparks and the second-generation technoparks. In relation to the apparent vagueness in the legislation, the following statement of a bureaucrat reveals the relaxations in resource allocation criteria in the R&D sector during the 2000s.[124]

[124] Interviewee 1.

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> What is the criteria for R&D potential? Is it the number of entrepreneurial projects, TÜBİTAK projects, or patents that are taken out in a city? In regards to those, we do all our evaluations. However, is it enough if the number is not zero but one? In other words, if one patent is taken out in a city, does that city have the required R&D potential? Currently, we observe that even if it is zero or one, or close to zero, [the city in question] is being supported.

It is important to highlight that this flexibilization in resource allocation criteria has not been unique to technoparks or R&D centers. It has also encompassed other governmental support programs. A previous bureaucrat highlighted this overall tendency in the 2000s by noting, "it seems that resources are distributed to anyone who demands them."[125] One technopark expert who had also actively taken part in the allocation processes asserted:[126]

> When we look at government supports, subsidies, and supports provided via TEYDEB or KOSGEB, there are such firms who can only survive via government support…There is no product [and value-added]. We call this the generosity of a compassionate state. This is in our family culture as well. Let the child does not fall, let me do the child's homework so that the child would not be upset…But this is wrong. Therefore, let we correct these wrongdoings and do not support such firms. Once such a firm gets support from three different programs, [without value-added] it should not get more support... It should get the support for an essential undertaking. How we can transform the system in this way I do not know, but it should be done.

In consequence, the AKP complemented its horizontal policy design with relaxations in resource allocation criteria during the 2000s. The stated goal of the AKP has been to promote R&D and innovation culture in Turkish society. In regards to this, one bureaucrat described the logic of this approach within the context of technoparks.[127]

> A technopark is not only about R&D, but it is also about a process of cultural transformation. In other words, the transformation of our country's current industry, current entrepreneurship structure, current structure – I call this [a structure] based on buy-and-sell montage…into a modern entrepreneur is a process of cultural transformation. Technoparks are means of this cultural transformation process. In other words, an organization performed by a technopark in a region, [or other activities], a son of an industrialist coming across to those, getting a Master's degree and returning to that technopark, etc. are developments that complement the transformation process. Currently, there are many industrial technoparks and magnificent projects are being

[125] Interviewee 21.
[126] Interviewee 9. TEYDEB is the unit of TÜBİTAK which steers R&D fund allocation to the private sector.
[127] Interviewee 17.

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> expected from them… There is no such thing. We use technoparks as a mean of cultural transformation.

To conclude, the AKP's interventions in TÜBİTAK and other innovation agencies had directly influenced the trajectory of R&D policy in Turkey by leading to shifts in the organizations' stance on R&D policy. This included the sectoral and spatial distribution of the resources, and the relative emphasis that was placed upon input increases and output quality.

The executive's involvement with key innovation organizations in Turkey have also influenced R&D policy-making processes in a different way in the last fifteen years: *by hampering the institutionalization of evidence-based policy-making efforts in the innovation system*. The next section turns a keen eye on this channel of influence.

5.4. Executive interference: Under-institutionalization of evidence-based policy-making mechanisms

There have been major problems in regards to evidence-based policy-making mechanisms in the Turkish innovation system in the 2000s. A top-down approach to policy-making has prevailed, and comprehensive effors to initiate ex-ante, interim, and ex-post assessment procedures have been lacked. This thesis argues that *the executive's interference with innovation agencies has exacerbated these problems in the last fifteen years, although this has been only one obstacle in the institutionalization of evidence-based policy-making efforts*.

To begin with, many comprehensive reports on the Turkish innovation system reveal the major problems in regards to evidence-based policy-making mechanisms in the country during the 2000s. As indicated in one report in 2009, "although an 'evaluation culture' in the field of technology and innovation policy in Turkey has started to develop...it has not been pursued by the authorities in a systematic and continuous manner...for most policy measures, important questions on additionality, quality and efficiency remain unanswered" (Elci 2009, 23). As noted in the same report, "there have been a number of weaknesses reported regarding the implementation rules and regulations of some of the ongoing measures...[and one such]

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issue with the design of measures is the lack of an evaluation framework...[as] no indicators were defined for measures and progress cannot be monitored against targets" (Elci 2009, 18–9). The report further notes, "since...there are no formal evaluations of all innovation schemes, the evidence is insufficient regarding the effectiveness and efficiency of the delivery process in the implementation of innovation policies at the level of policy measures" (Elci 2009, 23).

Simiar problems are also highlighted in a World Bank Report that concentrates on the Turkish innovation system (World Bank 2009). The following suggestion is made to strengthen the innovation system in Turkey: "one or two technoparks could be evaluated against international standards in terms of service provision and impact in relation to the objective of the Technology Development Zone Law" (World Bank 2009, 15). The report also noted, "future analysis could include the in-depth benchmarking of institutional mechanisms, policies and programs within the Turkish [innovation system] against EU and international best practices" (World Bank 2009, 15).

Another comprehensive report that was published in 2012 supports these claims. As noted in the report, "the lack of evaluation of policies remains as a weakness in Turkey [and] no evaluation study has been conducted for innovation policies yet...no indicators were defined for the measures and progress cannot be monitored against targets" Elci (2011, 2 and 4). Since the policies are not evaluated, "it is not possible to provide evidence on the effectiveness of [the] policies" Elci (2011, 4). Yet another report published in 2014 confirms the findings of the previous studies: "neither a mechanism for the evaluation of R&D policies nor a foresight exercises has been determined yet [in Turkey]...systematic evaluation of the applied policies has not [been] carried out yet [in Turkey]" (Çetin and Erdil 2014, 15).

The interview evidence supports these previous conclusions. For instance, many interviewees highlighted the dominance of a top-down approach in R&D policy-making in Turkey in the 2000s. Instead of ex-ante research and evidence, arbitrary decisions of politicians

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have seemed to form many policies in the country. As a previous high-ranking bureaucrat noted, "many of our policies emerge once a politician gives the idea and the bureaucrats conduct the complementary preparation. Let's say an idea occurs to the [politician] one night, he says let's do this. We cannot do the prior analysis to see if [the proposed policy] is feasible or not."[128]

In a similar fashion, another previous bureaucrat emphasized the apparent arbitrariness in policy-making by noting, "for instance, one of the Ministers comes out and says we support innovation in the textile industry. He must answer why it is the textile [industry] but not another one. If such a decision is made, [this question should be answered] right?"[129] Yet another bureaucrat asserted that the extent of the top-down approach can reach such levels in the Turkish innovation system that even the bureaucrats of the very organizations who pursue the programs are not informed about the changes until the very last minute in implementation.[130]

Besides confirming the previous findings, the interview evidence suggests that *the executive's interferences with innovation agencies (continuous shuffling of the cadres) have curtailed the consolidation of evidence-based policy-making mechanisms in the Turkish innovation system during the 2000s*. In addition to the subsequent top-down policy-making practices, such political interventions *have hindered the institutionalization of impact evaluation efforts*. Although it is relatively easy to see the former link since it is relatively direct (top-down policy-making), the latter link has also been existent.

One example from the TÜBİTAK case illustrates this point. When TÜBİTAK began allocating R&D funds to the private sector in the mid-1990s for the first time in Turkey, the organization forged mechanisms to assess the value added of its support programs. To this end, TÜBİTAK relied on external evaluators. Although the bureaucrats who were working at TÜBİTAK were aware that R&D does not yield immediate results (since a certain period needs

[128] Interviewee 16.
[129] Interviewee 5.
[130] Interviewee 6.

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to pass to adequately measure impact), they chose to start evaluations right-off-the-bat to "establish a discipline of evaluation."[131] As a previous bureaucrat noted:[132]

> TÜBİTAK has made autonomous evaluators do this evaluation. This was at the very beginning of the [allocation] process. The evaluator prepared four reports, once in two-years... We started evaluations immediately parallel to the support programs. Even if we knew that this was wrong, we started anyways to create and sustain the discipline. Because, you cannot measure the outcome of the money that is allocated to R&D immediately after two years. However, to be able to preserve the discipline, we started the evaluations. We believed that the allocation had to go hand in hand with the evaluation. We have made [the evaluators] do this.

The turbulent events at TÜBİTAK in the first half of the 2000s amid the amendment of the organization's foundation law hampered policy-continuity in this domain. In contrast to the 1990s, TÜBİTAK neither continued internal efforts to assess value-added, nor relied on external evaluators to assess the impact of its support programs in the 2000s. On this note, some bureaucrats had taken initiative and tried to vitalize impact evaluation efforts in TÜBİTAK in the late 2000s.[133] However, those efforts did not lead to the institutionalization of such efforts –*since they were not institutional initiatives; but were based on individuals' willingness*.

There had been similar attempts to consolidate evidence-based policy-making mechanisms in other key innovation organizations. For instance, there had been more than one attempts to establish regular evaluation practices in KOSGEB. However, those attempts also did not yield concrete results. In one instance, although KOSGEB hired an independent agency to conduct impact evaluation of its support schemes, and also trained its own bureaucrats to effectively steer the processes, KOSGEB's upper management revised the organization's whole support system *before the evaluation results even appear*.[134] In another case, even though KOSGEB had made external evaluators do the impact evaluation of its support programs, the results of the evaluation were not made public and were not taken into consideration.

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[131] Interviewee 21.
[132] Ibid.
[133] Interviewee 5.
[134] Interviewee 6.

Thus, political interference with innovation agencies has been *one direct mechanism that has undermined the institutionalization of impact evaluation efforts in Turkey in the 2000s*. However, this has *not* been the *only* problem. The interview evidence suggests that a specific characteristic of policy-making culture in Turkey has also contributed to the under-institutionalization of evidence-based policy-making mechanisms in the country in the last fifteen years. The interview evidence indicates that political elites and some bureaucrats still tend to perceive impact evaluations as 'punishment devices' instead of seeing them as part of a learning process. There is a traditional reflex in the bureaucracy to avoid impact evaluations with the concern that the evaluation results would be used against the organizations or units in the form of budget cuts. When faced with unsatisfactory results, decision-makers can potentially react by asserting, "why are we allocating money to you, we can allocate more money to [construct] irrigation channels [instead.]"[135] In some cases, political elites might set unrealistic goals at the outset; therefore, they might fail to appreciate the success that is achieved with scarce resources.[136] Partly due to these reasons, there has been a reflex in the bureaucracy to avoid impact evaluations to dodge a potential bullet.

It is important to note that the problems associated with evidence-based policy-making have not been a unique characteristic of the AKP period. Although there had been conscious efforts by TÜBİTAK during the 1990s to initiate impact evaluation efforts, the major problems had still been there in the broad political economy. The following statement of a bureaucrat reveals this within the context of technoparks.[137]

> It was the time of [Turgut] Özal. Özal and his crew saw a technopark abroad. When they had returned, they decided to establish technoparks [in Turkey]. [At the time], no one knew what was a technopark [in Turkey], what was going on, [and] what this park was about. Then, Turkey approached UNIDO [by saying] "send us an expert, we are going to establish technoparks..." Then, experts had come to Turkey and conducted a brief need-analysis. Then, they said [Technoparks] should be [established] in Ankara, Istanbul, Izmir, and TÜBİTAK-MAM. First, [the experts] urged us to found an

[135] Interviewee 4.
[136] Interviewee 2.
[137] Interviewee 20.

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> incubator, [then] analyse it, and then if it would become successful, establish a technopark. This way, we would gain experience... It is ok, we started [establishing incubators], [founding required committees], but no one knew what was an incubator at the time. After five years, [the experts] visited Turkey once again to follow up on the project. They asked us, "What did you do?" We said we are doing like this, we are doing like that. They asked, "Where is your business plan? Where are your success criteria?" [We had] none of those... They asked, "Relying on what [plan] are you working?" [We said] we are just doing... [The expert] told us a very nice thing at the time. He said, "You are the descendants of the Ottoman Empire. Do you assume that Mimar Sinan constructed the Blue Mosque without a plan? Did he do all those works randomly? How come you do not have a business plan, success criteria, etc." Still, we do not have these today properly.

Biddle and Milor (1997, 279–97) elaborate the major monitoring and steering problems in Turkey in the making of industrial policy in the 1990s. One dimension of the problem had been the apparent ambiguity in the legislation. This is very similar with the ambiguity in the R&D legislation that has been seen in the 2000s. As Biddle and Milor (1997, 291) note:

> What is the distinction between expansion and modernization investments, for instance? This is important because different benefits are attached to these classifications. Even the definition of these benefits, however, can be ambiguous. Thus, one benefit stipulates that with a completion investment a firm can import raw materials but not unprocessed materials without paying any custom duties. But as a Treasury official told us, "how clear is the distinction between "unprocessed" and "raw" materials? Does oil fall in the former or the latter category?"

However, as elaborated in detail in Biddle and Milor (1997), one main reason for the under-institutionalization of evidence-based policy-making mechanisms in Turkey in the 1990s had been the prevalence of clientelistic relations in the political economy. In the face of clientelism and political pressure, the bureaucrats did not have the incentive to pursue impact evaluations. As one interviewee noted to Biddle and Milor (1997, 297):

> If I tell my people to collect data on the actualization of investments, then what do I do with the data? Once I have the documentation on the implementation of incentives, then I have to do something with it. But this will pose a true dilemma for me. If I don't do anything about the situation, then I am violating the legal system which stipulates that I should punish the violators. But if I take steps to punish the violators, then this is like playing with fire. They are powerful individuals who have access to top politicians and they will find a way, sooner or later, to unseat me. So I would rather not collect data in order not to disturb anybody.

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In the R&D sector, I did not observe this kind of a mechanism that has undermined the institutionalization of evidence-based policy-making mechanisms. The major problems have been the constant personnel changes in innovation organizations in the face of top-down policy-making, and the perception of impact evaluation as a 'punishment devise' instead of a learning-process. This situation is highly related to the discussion of clientelism in the R&D sector in Turkey during the AKP period (Chapter 6).

It is also important to highlight that the problems in regards to evidence-based policy-making have not been a specific characteristic of the R&D sector in the 2000s. The very same problems have also been existent in the economic bureaucracy. As Luca (2016, 21) observes mainly in the context of the Ministry of Development, "the weaknesses in the availability of effective mechanisms to ex-ante evaluate projects at the selection phase is mirrored by an almost complete lack of on-going and ex-post monitoring and evaluation of approved projects." As in the R&D sector, it is sometimes the case that upper management arbitrarily decides not to pursue impact evaluation efforts while steering public investment projects. As one interviewee noted to Luca (2016, 35), "we started a new project. It was initially accepted by the top management, it was about ex-post evaluation of selected projects. But later the top management said that it was not our priority at the moment."

To sum up, there have been significant shortcomings in regards to the effective monitoring and steering of R&D funds in Turkey during the 2000s. This has been the case in the innovation system (Elçi 2009; World Bank 2009; Elçi 2011; Çetin and Erdil 2014), and in the economic bureaucracy (Luca 2016). This section has supported the previous findings. Furthermore, this section has argued that *the executive's interferences with innovation agencies have been one mechanism that has curtailed the consolidation of evidence-based policy-making mechanisms in the Turkish innovation system*. Top-down policy-making and continuous

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shuffling of personnel in key organizations have undermined the institutionalization of ex-ante, interim, and ex-post evaluation efforts.

5.5 Concluding remarks

In the light of the theoretical framework outlined in Chapter 2, this chapter has focused on the Turkish state's internal structure and examined the bureaucracy's autonomy and embeddedness in the Turkish innovation system during the 2000s. The specific attention has been placed upon the repercussions on R&D policy-making. As it is shown in the context of TÜBİTAK, *the AKP's interference with key innovation agencies led to shifts in the organizations' stance on R&D policy.* While the dominant logic of R&D fund allocation was sectoral in the 1990s, the 2000s' policy design has been overwhelmingly horizontal in line with the AKP's political preference. In addition, while the 1990s' view preferred to concentrate resources on relatively developed regions in Turkey by insisting on output quality, the 2000s' perspective opted for relaxations in resource allocation criteria (lowering expectations on quality) –*which led to a more spatially-equal distribution of the resources.*

Furthermore, *the executive's intervention in key innovation agencies has hampered the consolidation of evidence-based policy-making efforts in the Turkish innovation system*. A top-down policy-making approach has prevailed, and impact-evaluation efforts could not be implemented in a comprehensive and consistent manner. *The absence of evidence-based policy-making mechanism, and relaxations in resource allocation criteria, led to a spatial widening in resource allocation.* Moreover, a certain cultural trait of policy-making (perception of impact evaluation as a 'punishment devise' instead of a learning process) undermined the institutionalization of ex ante, interim, and ex-post evaluation efforts. Overall, the bureaucracy's lack of autonomy and embeddedness has influenced R&D policy-making in multiple ways in Turkey during the 2000s.

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One essential issue that is not covered in this chapter is the questioning of the AKP's motivations and logic behind R&D fund allocation. As mentioned, the AKP's stated objective in opting for a horizontal policy design and relaxing resource allocation criteria has been to boost R&D and promote innovation culture in Turkish society. Can this be considered as a rational policy choice? Furthermore, have there been clientelistic relations or rent-seeking in the allocation of R&D funds? As it is well-known, clientelism has been a defining trait of Turkish politics since the 1920s (Sayarı 2014), and such relations have also been dominant in many sectors during the 2000s (Buğra and Savaşkan 2014). Or, can one characterize the AKP's approach to R&D fund allocation as populist? Like clientelism, populist approaches to distribution and economic phenomena have been a defining trait of the Turkish political economy (Öniş 2012, 135). The following chapter concentrates on these two questions and furthers the analysis by questioning the AKP's motivations and objectives behind the allocation of R&D funds to the private sector.

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CHAPTER 6: The AKP and R&D Fund Allocation: Clientelistic, Rational, or Neo-populist?

The previous chapters shed light on the two important dimensions of R&D policy-making in Turkey during the 2000s. While Chapter 3 demonstrated political parties' divergent views on R&D policy, Chapter 4 elaborated how technological nationalism and complementary factors turned down the opposition's voice in the parliament. Chapter 5, on the other hand, turned a keen eye on the state's internal structure in Turkey and documented how the AKP's interference with key innovation agencies had influenced R&D policy-making processes in the country in the last fifteen years.

Based on the findings of the previous chapters, and adding new dimensions to the analysis, this chapter inquiries the AKP's motivations and logic in the handling of R&D fund allocation to the private sector in the 2000s. The question that has been taken up in this chapter is rather straightforward: Has the AKP's approach to R&D fund allocation been clientelistic, rational, or neo-populist?

In the light of this central question, the rest of this chapter is organized as follows. Section 6.1 briefly reviews clientelism in Turkey before and during the AKP period. This elaboration sets the stage for the subsequent discussion of clientelism in the R&D sector in the 2000s. Section 6.2 traces clientelistic relations in the R&D sector during the AKP period. Section 6.3 briefly introduces the term 'neo-populism,' and documents the neo-populist character of the AKP's approach to R&D fund allocation. Section 6.4 concludes.

6.1 Clientelism in Turkey –Before and during the AKP period

Clientelism has been a defining trait of Turkish politics and society since the 1920s (Sayarı 2014, 658). As a matter of fact, deep historical roots of clientelism in the country can be traced in the social structure of the Ottoman Empire (İnalcık 1964). Likewise under the Ottoman rule,

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traditional patron-client relations was the dominant form of clientelism in Turkey until the 1950s (Sayarı 2014, 658). During the Ottoman era, locally influential notables formed clientelistic relations with the peasants by protecting them against the arbitrary acts of the state officials. Rural notables acted as political brokers between the central government and its subjects (Hanioglu 2008). Then, the notables made their way into the parliament during the First Constitutional era of the Empire (1908–1918), and this process continued after the Republic's establishment in 1923. Notables, who had been loyal to their peasant clienteles, reinforced their socio-economic status in the cities and small-towns via their ties with the Republican regime. In return, the Republican regime controlled the periphery through the notables (Sayarı 2011). Thereby, the notable families saw their ways into the ranks of the newly formed CHP. They played a crucial role in the party's grass-roots organizations, kept their alliances with the local officials, and competed among themselves to attain more power and status (Güneş-Ayata 1994).

The traditional patron-client form of clientelism mostly faded away with the transition to multiparty politics in the late 1940s in Turkey (Sayarı 2014, 658–60). With millions of people participating directly in politics for the first time under free elections and universal suffrage in Turkey, a new form of clientelism that was based on the delivery of goods and services in exchange for the votes emerged (Unbehaun 2006). The allocation of the state resources by the governing elites in return for political support became an indispensable mechanism of nurturing popular support (Sayarı 1977; Özbudun 1981). As such, after its electoral victory in the 1950 general elections, the Democratic Party (DP) forged clientelistic relations to broaden its popular support among its constituencies. While the DP awarded its electoral base with various infrastructural investments including roads, water, and electricity, it punished those who voted for the opposing CHP by excluding them from the allocation processes. The DP also relied on the then dominant state economic enterprises to keep its electoral base intact (Bayar 1996, 776).

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Since then, “the distribution of goods and services in exchange for votes through political clientelism and patronage” has been one important determinant of voter preference in Turkey (Sayarı 2014, 665). The clientelistic relations have been paramount especially for the successor center-right political parties that followed the DP’s footsteps (Heper and Keyman 1998).

The massive urbanization that has taken place since the 1960s, which is accompanied by large-scale migration from the villages and small towns to large cities, created a new base for the continuation of clientelistic relations in Turkey (Sayarı 2014, 660). The new-comers, forming the new urban poor, largely settled in the periphery of the metropolitan centers in squatter site areas. For the new-comers, acquiring of the legal ownership for the homes that they built on public land, as well as the extension of core municipal services to the squatter site areas, have been essential. Having observed the process, political parties tried to expand their popular support among the urban poor by providing them various goods and services including free delivery of coal, food boxes, and clothing through formal and informal channels in return for political support. As such, the Islamic-leaning RP was highly successful in mobilizing the urban poor votes during the mid-1990s (White 2002). The party successfully utilized the then advance technologies to gather information on potential voters for the party, and established personalized relations with them (Öniş 1997, 755). In the process, the RP offered material benefits to potential voters, that is the urban poor, though its well-functioning grass-root organizations (Delibas 2015).

The AKP has also relied on, and has benefited from, clientelistic relations during its single-party rule since 2002. The effective use of formal and informal distributive mechanisms in exchange for political support is identified as one important determinant of the AKP’s electoral success (Sayarı 2011; Öniş 2012; Komşuoğlu 2009; Kemahlıoğlu 2012). In fact, the AKP has so effectively outperformed its rivals in the provision of social goods to lower income households that the party is said to establish an “expansive clientelist machine” (Gümüşçü,

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Gürleyen, and Aytaç 2014).[138] Clientelistic relations in domains varying from provision of basic goods to distribution of jobs (Ocakli 2016, 735), and from provision of municipal services to implementation of new social policies (Metin 2011), have not only been preserved, but have also been enhanced in Turkish politics and society throughout the 2000s.

Clientelistic relations not only refer to the exchange between the governing elites and the electorate, but also encompass interactions between the elites and influential individuals or interest groups (Chapter 2). Particularistic distribution of the funds in exchange for political support to such groups has also been a common trait of Turkish politics. Since this dimension of clientelism involves interest groups, it is highly intertwined with the groups' rent-seeking activities.

To begin with, large business conglomerates gained substantial power during the ISI period in Turkey. The state's protectionist policies had created enormous rents in the economy, and those rents had been channeled to the large business groups in exchange for political support in the 1960s and the 1970s. As Krueger (1974, 294) estimates, for instance, rents from import licenses alone were approximately 15 percent of the gross national product in Turkey in 1968.

One main mechanism of coalition building through clientelistic relations had been the governments' control over the prices of state economic enterprises. During the ISI years, the governments' command over the prices "was seen as a way of directing assistance to…sectors of the economy in return for political support" (Öniş and Riedel 1993, 102). It is important to note that Turkey had not been an exception in regards to the exclusive focus that had been placed upon large conglomerates in the ISI period. Many other developing countries had also pursued the ISI strategy with an absolute focus on large business –and with the exclusion of SMEs in the process. Thus, the structural conditions of the time had put SMEs at a highly

[138] Quoted in Sayarı (2014, 662).

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disadvantageous position vis-à-vis the large firms. SMEs were excluded from the winning coalition as they could not benefit from the particularistic distribution of the rents.

In the Turkish political economy, the exclusion of SMEs also meant the exclusion of devout businessmen of Anatolia (conservative) from the distribution, since those businessmen were largely small business owners.[139] In reaction to this, the Islamic-leaning political parties had always tried to raise the voices of such SMEs in Turkey. For instance, one of the very reasons of the establishment of the first religious party in Turkey in 1970, the National Order Party (MNP), was to represent the interests of the Anatolian SMEs. The MNP aimed to challenge the then Justice Party government, which had close ties with large business groups. The National Salvation Party (NSP), replacing the MNP in 1972, also represented the devout SMEs. In short, the constituent SMEs of the Islamic-leaning parties were "discontented with the allocation of state resources to large businesses in the major cities and demanded state protection and support for themselves in order to receive 'their due share of the expanding economic pie'" (Başkan 2010, 401).

The 1980s had been the years of 'great transformation' in Turkey in many respects as in many other developing countries. Almost fifty-year long ISI came to an end, and Turkey shifted to EOI with the famous *January 24 decisions* in 1980 (Şenses 1994; Öniş 1995). The new development model embraced the neoliberal policy package that was later dubbed as 'Washington consensus' (Williamson 1990).

Although in many respects the ongoing changes were path-breaking, there had been no such 'great transformation' in regards to clientelism and rent-seeking in Turkey. Put differently, clientelistic relations had remained to be a defining trait of the Turkish political economy (Heper 1991). As a typical case in point, Biddle and Milor (1997, 300) note, "our confidential interviews revealed that [in Turkey] in exchange for firms' desires for subsidies, political elites

[139] This is in addition to the secular-conservative conflict.

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often ask for highly personalized services such as support for their political party or support for themselves or family members (which may take the direct form of payment or an indirect form such as employing a family member in the firm).”[140] In addition to rewarding friends, the governing elites also punished foes. Enactment of retroactive laws that had shattering effects on a particular line of business, disregard of contracts that were concluded with previous friends, lowering of the tariffs for specific goods that were produced by foes, unseating of bureaucrats in key organizations, were all elements of a repertoire that was used by the governing elite to punish non-compliers in Turkey (Buğra 1994, 18–32; Biddle and Milor 1997, 293–97).

This form of clientelism has also been maintained in the 2000s. The AKP governments nurtured their own supporters in the business world via particularistic distribution of the resources (Buğra and Savaşkan 2014). For instance, the AKP changed the Public Procurement Law numerous times and limited the Public Procurement Agency’s capability to act independently. During 2003–2013, the Public Procurement Law changed 29 times, with more than a hundred amendments in scope and applications (ibid.) Similar interventions to other independent regulatory agencies were also observed during the 2000s (Chapter 5).

To conclude, selective distribution of resources in exchange for political support has been a traditional exercise in Turkey. Thus, clientelism and rent-seeking are not distinctive phenomena pertaining only to the AKP period. It is important to note that although there has been a growing interest in the study of clientelism in Turkey, to the best of my knowledge, none of the existing works has yet focused on the R&D sector to question the existence of clientelism in the allocation of R&D funds to the private sector. This is the first study to raise and confront this question.

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[140] See also Kalaycıoğlu (1991) and Buğra (1994).

6.2 Clientelism in the R&D sector?

The interview data and the relevant empirical evidence *do not support the proposition that the AKP governments have engaged in a particularistic distribution of R&D funds to the private sector in exchange for political support –as in the cases of the construction or the media sector*. Friends have benefited from the distribution, and in some cases political interference influenced allocation choices. However, the governments did not selectively allocate the resources *only to friends* as in the cases of municipality services, food, coal, etc. The governments also did not channel the resources *only* to favored business groups as in the case of the construction sector. Instead, the distribution targeted all segments of the society, both at the communal and interest-group level. The allocation has been handled primarily with respect to demand.

In fact, as a purposeful political choice of the AKP governments, there has been a relaxation in resource allocation criteria and a lowering of expectations on the quality of R&D investments (Chapter 5). On top of a horizontal policy design, this strategy aimed at boosting R&D project applications and proliferating infrastructural investments in the 2000s. As an illustrative case in point, one previous bureaucrat described the demand-driven allocation of the resources during the AKP period, as well as the absence of selective distribution, in the following way.[141]

> The evaluation criteria were completely softened [during the AKP era] … The criteria that had to be followed in the distribution of the R&D support were put aside. Evaluations…were softened. Individuals who evaluate reports were selected from their [AKP's] own political cadres. Even more softening [was done in the evaluation criteria] … In this process, they [the governments] did not practice favoritism. [They did not say] let me be tough on Ford Otosan when it asks for assistance [and] be flexible when my men in Konya asks for help. No, they also softened [the evaluation] for Ford Otosan. Ford Otosan should not stick to your mind. I give it as an example. Evaluations are softened for everyone.

To further zoom into the issue, it might be argued that the enactment of the commonly known 'R&D law,' and the subsequent establishment of the R&D centers by the private sector, might

[141] Interviewee 21.

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have involved rent-seeking behavior on part of large business conglomerates that operate in Turkey. In short, the 'R&D law' provides tax cuts and additional support to the firms; for them to found and run their own R&D centers (Chapter 3). No sectoral criteria are specified in the law. In the initial version, firms that employed at least fifty full-time-equivalent R&D personnel were eligible to apply for the establishment of a R&D center. To be eligible to get some additional benefits, the firms had to employ at least five-hundred full-time-equivalent R&D personnel.

As discussed in detail, the opposition parties harshly criticized the personnel requirements during the parliamentary discussions (Chapter 3). One criticism was about the selective allocation of the resources to large business groups at the expense of SMEs. As argued by a wing of the CHP, the law's hidden goal was to solve Turkey's current account deficit problem in a superficial way. Since substantial amount of intermediary capital was imported to sustain exports by the private sector, the AKP was said to have approached conglomerates to convince them to reduce their level of imported intermediary capital goods. This wing of the CHP perceived the 'R&D law' as a "concession" given to conglomerates.

The MHP also shared the CHP's concerns. As put forward by one MHP deputy, "if we…opt for [five-hundred personnel requirement] because of the promises given to a few companies, we are doing wrong…if we consider this [because] a few companies can evade taxes with the R&D excuse, again we are doing wrong."[142] Based on this, one might suspect the existence of rent-seeking behavior, maybe also clientelism, in the preparation and implementation of the R&D law. However, when one focuses on (i) the rationale based on which the personnel requirements were set, (ii) tracks down the law's implementation in practice, and (iii) considers the law's subsequent amendments, one sees that *the evidence does*

[142] For the parliamentary discussion conducted on February 8, 2008, follow the link below. https://www.tbmm.gov.tr/develop/owa/tutanak_g_sd.birlesim_baslangic?P4=20077&P5=B&PAGE1=1&PAGE2=54 (page 14) (accessed on June 4, 2016).

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not support the prevalence of clientelistic relations –as seen in the construction or the media sector.

To begin with, a different group within the CHP defended the fifty-personnel requirement based on the argument that the requirement was necessary to preserve technoparks' attractiveness. If the requirement was to be reduced, many firms that would otherwise prefer to function on the parks would establish their own R&D centers elsewhere outside the park borders. Therefore, those firms' innovative capabilities would be hampered, since they would not benefit from the ecosystem created in the parks (university-business collaboration). A comprehensive report on technoparks in Turkey that was prepared by the State Supervisory Council in 2009 backed this latter proposition of the CHP (DDK 2009, 6).[143] Furthermore, many bureaucrats defended the personnel requirements during the interviews by highlighting the fact that only large firms can undertake serious R&D in Turkey.

Second, the Ministry approved almost all R&D center applications in the 2000s (Chapter 3). Until 27 July 2012, 163 applications were made to the Ministry, and 120 of them were eventually approved.[144] Currently, the AKP's vision is to further proliferate R&D centers, and to increase their numbers from 300 to 1000 (Chapter 3). Therefore, the allocation did not target specific conglomerates or large firms, but it was open to all. Last, the personnel requirements were *in fact* relaxed in the subsequent years. The requirement was reduced to thirty in 2014, and to fifteen in 2016.

In a similar way, it might be argued that technoparks' proliferation in Turkey during the 2000s might have involved clientelistic relations. As elaborated in Chapter 3, while there were only two technoparks in Turkey in 2002, this number skyrocketed to sixty-three in 2016. At

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[143] Cumhurbaşkanlığı Devlet Denetleme Kurulu (2009), *4691 sayılı Teknoloji Geliştirme Bölgeleri Kanunu Uygulamalarının Değerlendirilmesi ile Uygulamada Ortaya Çıkan Sorunların Çözümüne İlişkin Öneri Geliştirilmesi*. Interview evidence suggests that this does not hold for high-quality parks located in Ankara and Istanbul (Interviewee 10, interviewee 13).
[144] http://www.vergidegundem.com/documents/10156/785069/eyll2012_makale1.pdf (accessed on June, 3 2016).

least two pieces of evidence can support this argument. On the one hand, at least some decisions of the Assessment Board, the Board that evaluates park applications, involved contradictions and arbitrariness. The State Supervisory Council report notes that some technoparks had failed to start their operations although they got the Board's initial approval (DDK, 2009).[145] In some cases, although the Board rejected some applications at first, it approved them soon afterwards, even though the issues based on which the applications were rejected remained as a problem (DDK 2009, 146).[146] The same report also dubbed the "absence of criteria in resource allocation and distribution of resources without paying attention to needs" and "ambiguities in the payment of the Ministry support (amount, time, method)" as problems encountered in the financing of the parks' infrastructural investments (DDK 2009, 186).[147]

On the other hand, one interviewee asserted that he himself witnessed a scenario where a park was established once a deputy was involved in the process. Another interviewee implied this kind of an interference. In addition, many interviewees noted that university rectors and related cities' deputies are eager to have at least one park in their affiliated universities. Having a park within a university campus is considered as a source of prestige in Turkey. These evidences signal potential clientelism and pork-barreling. However, as in the case of the R&D centers, almost all park applications were approved during the 2000s. Only a few applications were rejected due to technicalities, and some of those were approved later. Therefore, there had been no serious selectiveness in the process.

To conclude, the evidence does not support the claim that the governments selectively channeled the R&D funds to their friends *by excluding the foes from the processes during the 2000s*. Although friends have benefited from the allocation, and in some cases political

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[145] Cumhurbaşkanlığı Devlet Denetleme Kurulu (2009), *4691 sayılı Teknoloji Geliştirme Bölgeleri Kanunu Uygulamalarının Değerlendirilmesi ile Uygulamada Ortaya Çıkan Sorunların Çözümüne İlişkin Öneri Geliştirilmesi*.
[146] Ibid.
[147] Ibid.

interference influenced the processes, the foes also got their share from the expanding pie. Clientelistic relations that are akin to the provision of municipality services or distribution of food stamps, coal, etc., which exclude non-compliers from the distribution, had not been prevalent in the R&D sector. Moreover, channeling of the resources to favored business groups at the expense of others, as in the case of the construction sector, had not been prevalent as well.

One more issue that can also be analyzed within the clientelism and rent-seeking framework is the relationship between the AKP and the Independent Industrialists' and Businessmen's Association (MÜSİAD). MÜSİAD was established in 1990 to represent the interests of conservative businessmen of Anatolia and to challenge the dominance of the secular TÜSİAD in the political economy. It is known that the AKP and MÜSİAD have been close, MÜSİAD played an active role in the party's foundation process, and the two organizations have shared an organic tie (Başkan 2010, 408). For instance, some MÜSİAD members are/were also AKP deputies (ibid.), and some of them are/were even members of the specialized committee that focuses on innovation-related matters in the parliament.

In addition, MÜSİAD is commonly said to raise SMEs' voices in Turkey, as conservative businessmen of Anatolia are largely small business owners. In the light of all these, one can inquire whether the AKP-MÜSİAD ties had influenced R&D fund allocation –as the share that SMEs got from the expanding pie vis-à-vis large firms had increased visibly during the 2000s (Chapter 3).

As an illustrative case in point, the amount of resources allocated to the private sector by TÜBİTAK increased sharply since 2002, as it jumped from 67.4 million TL in 2002 to 301.4 million TL in 2012 (TEYDEB 2013). *The share that SMEs got from the expanding pie skyrocketed with a smooth nine-fold increase.* What this corresponds to is, while SMEs were getting 37 percent of the funds vis-à-vis large firms during 2002–2006, this ratio increased to 51 percent between 2007 and 2012. Furthermore, the realized support budget of KOSGEB, an

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organization that solely focuses on SMEs, increased from 93 million TL in 2005 to 348 million TL in 2014 (KOSGEB 2014, 29).

The interview evidence suggests that not only MÜSİAD, but also other civil society organizations as well, have not taken major roles in R&D policy-making processes in Turkey in the 2000s. There are at least two reasons for this. On the one hand, *the private sector does not seem to be interested in specializing in high-tech products despite its overwhelming rhetoric on the importance of high-tech production and innovation in Turkey*. On the other hand, *formal mechanisms through which the private sector can participate in decision-making are weak and under-institutionalized –if not non-existent in Turkey*. Just to cite one example, TÜSİAD's request to include two additional members to technoparks' Assessment Board, who would be jointly nominated by civil society organizations that operate in the field of technology and informatics and selected by the then Ministry of Industry and Trade, was not considered in 2008.

In regards to the mentioned KOSGEB and TÜBİTAK programs, the huge increase in KOSGEB support budget was stemmed from an amendment in the organization's foundation law, which was passed just before the AKP came to power.[148] Therefore, the initial increase was neither an AKP initiative, nor it was related to MÜSİAD. In addition, the interview evidence suggests that all segments of the society benefited from the subsequent allocation via the flexibilization of the resource allocation criteria. The softening of the criteria, paving the way for a demand-driven distribution of the resources, had also been the case in TÜBİTAK. The SME-friendly allocation was not a consequence of direct political interference or any civil society organization's involvement in the processes.[149] Rather, structural, and external factors,

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[148] One interviewee noted that KOSGEB and MÜSİAD was close for a while after the AKP came into power and even TÜSİAD had some contacts with the organizations. Once again, however, resources are allocated to everyone with respect to demand.
[149] Interviewee 4.

played a role in the emergence of SME-friendly allocation. The softening of the resource allocation criteria ignited the process.

In consequence, the current evidence suggests that neither MÜSİAD, nor any other civil society organizations, influenced R&D policy-making processes in Turkey to cause selective distribution of the R&D funds that are akin to the other domains –such as the construction or the media.

An important question arises at this point. *What explains the absence of particularistic allocation of the governmental resources in the R&D sector in Turkey?* There are more than one explanations. First, as already noted, the private sector does not seem to be interested in high-tech production or substantial technological upgrading in Turkey. *The lines of the business where clientelistic relations are overwhelmingly present, like the construction sector, have nothing to do with high-tech production in broad terms.* This might be a part of the explanation.

Another explanation might be that *even the total size of the R&D funds is not appealing enough to attract clientelistic relations or rent-seeking in Turkey*. There are simply more effective ways to rent-seek, nurture new businesspersons, or gain support in exchange for the selective distribution of the resources. This includes government procurement and large-scale projects (Buğra and Savaşkan 2014), and also capturing of independent regulatory agencies that have the potential to control huge sums of money (Özel 2012).

In this regard, as Biddle and Milor (1997, 295) note while evaluating the Turkish political economy, "sensitivity to political signals correlates with the nature of the agency in question."[150] If an agency is not a potential source of rent-creation, then it is relatively less subject to political interference. Likewise, as noted within the US context in the late 1980s, "with its enormous size and spending power, the military-industrial complex creates political constituencies that make 'captives' of congressmen, state officials, labor unions and even

[150] This argument rests on an interview conducted with a former top bureaucrat and a high-level executive in the private sector.

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Presidents, who often support questionable military spending out of fear for their political lives" (Lindsey 1988, 96).[151] Thus, *since the R&D sector seems not to be a potential source of rent-creation in Turkey*, clientelistic relations seem not to be dominant in this domain of policy-making.

This might hold for the information and communication (ICT) sector in Turkey as well. In a recent study conducted by the Ethics and Reputation Society of Turkey, where perception of corruption is measured in different sectors through surveys in the country, the customs and the logistics turned out to be the sector where corruption is perceived to be the most prevalent in the country.[152] While the construction and the media sectors followed the customs and the logistics, ICT emerged as the sector where corruption is perceived to be at the lowest level alongside civil aviation.

Yet another explanation might be that the Turkish state perceives R&D-related investments as an indispensable ingredient of long-term development, and tries to pursue the policy accordingly (no matter how questionable is the execution). For instance, although the AKP governments intervened in autonomous innovation organizations during the 2000s, and draw the general guideless of the R&D policy (flexibilization of the resource allocation criteria, horizontal allocation, etc.), they nevertheless did not intervene in the distribution in regards to who gets the funds. In regards to this, the cadre of the unit that is responsible from resource allocation to the private sector did not change significantly in TÜBİTAK in the latter half of the 2000s. This is quite important, as other institutes and units of the organization witnessed wild personnel shifts amid major political turmoil in the country (Chapter 5). The fact that the

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[151] The writer quotes one concluding remark of a series of articles published in the Los Angeles Times in July 1983 while making this argument.

[152] The Ethics and Reputation Society of Turkey was established in 2010 as a non-profit organization with the collaboration of 22 companies. The organization's primary goal is to increase awareness towards business ethics in Turkey. The society has more than 115 corporate members with over 200.000 employees. The members manage 14% of the Turkish GDP (TEİD 2015, 3). For the summary of the study see, http://www.hurriyet.com.tr/is-hediyesiz-yurumuyor-40113580.

unit that directs R&D fund allocation did not change during the turbulent processes signals the non-politicized character of the distribution (in regards to clientelism).

Overall, these factors in combined can explain the absence, or relative absence, of rent-seeking and clientelistic relations in the R&D sector in Turkey. Put differently, *the form of clientelism that has been dominant in sectors like the construction or the media has not been dominant in the R&D sector during the AKP period.*

6.3 Populism in the R&D sector?

'Populism' has always been an essential analytical construct of political science research. Since the early years of the 2000s, there has been growing interest in the study of populism yet again (Weyland 2001; Mudde 2004; Panizza 2005). Like any grand concept, populism is defined in multiple ways in different contexts. This has been the case back in the 1960s (Ionescu and Gellner 1969), at the turn of the new millennium (Weyland 2001), and as of now (Bozoki 2012; Gidron and Bonikowski 2013; Inglehart and Norris 2016). A comprehensive examination of populism is beyond the scope of this inquiry. Only a variant of populism, that is *neo-populism*, or neoliberal populism, is relevant for the current discussion.

In broad terms, the proponents of 'neoliberal populism' argue against the claim that neoliberalism and populism cannot be compatible and cannot co-exist in a political economy. As the proponents demonstrate, neoliberal variant of populism has in fact existed, and neoliberal economic policies and populist agenda have in fact complemented each other in numerous occasions (Roberts 1995; Weyland 1996). This conceptualization of populism has brought a breadth of fresh air to the later scholarship, as populism had traditionally been associated with nationalist and inward-looking economic policies of the ISI period –which unnecessarily limited the concept's depth and explanatory potential (Weyland 1999, 379).

The AKP period in Turkey has also been evaluated with the lens of populism, and of neo-populism, in different policy fields (Öniş 2012; Bozkurt 2013; Evin and Gisclon 2016;

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Dorlach 2016). To begin with, the AKP has clearly pursued a neo-liberal policy agenda during the 2000s (Section 7.2.1). Both the party's pre-election rhetoric and the later actions promoted privatization, harmonization with the IMF criteria, flexible labor law, and reorganization of the public administration via decentralization (Coşar and Özman 2004, 63). In many fields, the AKP's approach reflected the tenants of the 'regulatory state,' including the establishment of independent regulatory agencies in the spirit of the post-Washington consensus (Chapter 5).

Therefore, after having observed the AKP's later populist tendencies in many policy fields, the examination of neo-populism in Turkey has become an interesting endeavor for the students of Turkish political economy. This thesis jumps on the bandwagon by arguing that *the AKP's approach to R&D fund allocation in the 2000s can be characterized as populist*. Furthermore, this dissertation argues that this populism of the AKP can be considered as part of the party's overall 'controlled neo-populism' during the 2000s –a conceptualization that is put forward in Öniş (2012).

In essence, 'controlled neo-populism' refers to the "effective use of a variety of formal and informal redistributive mechanisms…to enlarge…[an] electoral coalition" (Öniş 2012, 135) (Section 2.3.2). In Turkey, the AKP's 'controlled neo-populism' has been different from the earlier versions of populism that had been observed in the country, as the 'uncontrolled populism' of the DP (1950s) and the ANAP (1980s) led to unrestrained fiscal expenditures, growing inflation, and an unmanageable balance of payments situation (Öniş 2012, 140). In fact, the 1950s' seemingly successful economic performance was associated with "careless and uncontrolled high growth rates" (Öniş 1996, 159). In contrast, in the AKP period, the favorable global climate and the 2000s' low inflation environment helped the party to sustain its neo-populist exercises (Öniş 2012). Therefore, the 'controlled' part of neo-populism does not entirely derive from the AKP's own undertakings. Certain developments external to the party have also supported the party's fortunes.

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One essential characteristic of 'controlled neo-populism' is that it is clearly different from the versions of clientelism that are seen in the Turkish political economy –mainly in the construction and the media sector. As Öniş (2012, 141) underlines, the AKP governments *have also* relied on *formal redistributive mechanisms* besides the exclusionary networks of clientelism in the 2000s. Put differently, 'controlled neo-populism' includes *both informal and formal channels of distribution*, and *does not necessarily exclude certain segments of society from the allocation*. Therefore, the story is not one of clientelism, but one of populism in 'control neo-populism.' On this note, a version of clientelism is still inherent (as the implicit goal is to recruit new clientele) in 'controlled neo-populism,' but this version is much softer than the versions of clientelism where the explicit goal is to gather and sustain political support in exchange for the *particularistic* distribution of the resources (exclusion of certain groups from the allocation processes).

This thesis argues that 'controlled neo-populism' captures the main characteristic of R&D fund allocation to the private sector in Turkey in the 2000s. Although rent-seeking has been existent and sometimes political interference influenced allocation decisions, the overall distribution has not been exclusionary. The implicit goal of recruiting new clientele has also been existent. Thus, R&D fund allocation can be considered as part of the AKP's strategy of "redistribution through formal channels" (Öniş 2012, 141) via a horizontal policy design and flexibilizations in resource allocation criteria.

Besides the apparent differences between the versions of clientelism that is seen in the construction and the media sector in Turkey and controlled neo-populism, additional points need to be highlighted to be able to dub the AKP's approach to R&D fund allocation as 'neo-populist.' These are, (i) the compatibility of the AKP's stance on R&D policy with the party's overall neoliberal agenda (especially in the early years), and (ii) flexibilizations in resource allocation criteria and lowering of expectations on R&D investments *in the face of major*

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monitoring and steering problems, and *the dominance of a top-down policy-making approach* (executive interference with key innovation agencies).

To begin with, the AKP's choice of horizontal policy design is in the spirit of neoliberalism. Instead of a strategic focus on certain sectors, which is commonly associated with a heterodox policy bundle, the AKP pursued the neoliberal option of horizontal allocation in policy design. Therefore, the 'neo' part of populism has been in place (Section 7.2.1).

Second, the AKP's approach to allocation has been highly questionable in regards to effective policy-making and efficiency, but it has been rather clear in its motivation to gain political support in broad terms. On the one hand, the AKP's one primary goal has been to promote innovation culture in Turkish society via R&D support programs. This has been the justification of the proliferation of infrastructural investments including technoparks and R&D centers. This objective is certainly important, and a culture of innovation needs to be spread in Turkish society if Turkey will become an important player in the international arena. However, there are various mechanisms and support programs other than R&D funds to promote innovation culture in a country. The essential goal of governmental R&D support *is not* to promote innovation culture in loose terms, but to *enhance business R&D and innovativeness in concrete ways*. In fact, this has been one goal of the AKP governments as well.

On the other hand, a rational and sound policy-making is required to ignite business R&D and spread innovation culture in a society. This, in turn, necessitates *the prior existence of research, evidence, and impact evaluation efforts*. The AKP governments' interference with innovation agencies and reliance on top-down policy-making *undermined the consolidation of such efforts in the innovation system* (Chapter 5). In fact, the problems in regards to evidence-based policy-making *had already been existent in the Turkish innovation system*. The important point is, the bureaucrats *were aware of these problems*, and some issues *were even highlighted*

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in a comprehensive report on Turkish technoparks that was prepared by the State Supervisory Council itself (DDK 2009).

It was in this environment that the AKP deliberately opted to relax resource allocation criteria based on which R&D investments and projects had been evaluated. This dissertation argues that establishing technoparks in each city and proliferating R&D centers throughout the country, *with the expectation that those investments would promote innovation culture in time on their own*, cannot be considered as a rational policy design.

In fact, the interview evidence supports the claim that the AKP's approach to allocation has been populist in the 2000s. Many interviewees labeled the AKP's approach to allocation as populist by primarily emphasizing the proliferation of resources *in the absence of impact evaluation mechanisms*.[153] One bureaucrat described the populist character of the allocation in the following manner:

> We cannot say that the resources are being used effectively [by establishing technoparks in each and every city.] However, there is such a phenomenon in Turkey: like each city demands a university, each university demands a technopark. These would not be rational choices. In general, they would be the consequence of a political rhetoric of "I did it." Put it differently, in regards to having a university…there is only 1 and 0 in the eye of a politician. But, many years need to pass for a university to become a true university. There may be 170 universities in Turkey currently, I do not know, but certainly the number is more than 150. In other words, the proliferation in university numbers and technoparks all stem from the same reason. These are rather political considerations.

It is important to highlight that the essential problem *is not the proliferation of university numbers or technoparks per se*. The essential problem is the proliferation *in the face of various infrastructural problems and human capital shortages*, and *in the absence of evidence-based policy-making mechanisms*. In many cases and places, more urgent issues that precede R&D need to be addressed (infrastructure, etc.) –a rational approach to policy-making necessitates this. This is why R&D investment and allocation decisions that are made under these

[153] Interviewees 1, 2, 4, 6, 8, 9, 16, 19, 20, 21, 24, 25, 26.

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circumstances are mainly said to be stemming from political considerations. Accordingly, such an approach is labelled as populist by many interviewees.

To open a parenthesis, two bureaucrats did not prefer to use the label 'populist' while describing the AKP's approach to R&D fund allocation. The proliferation and spatial-widening of the resources are still considered as a rational attempt to spread innovation culture in Turkish society. One bureaucrat also noted that the resources allocated to undeveloped regions are very low in comparison to the developed ones in Turkey *in practice*. Therefore, there is already a concentration in the developed regions (where infrastructure and human capital problems are relatively minor), although the policy design is horizontal. The bureaucrat further noted that if this would not have been the case, then he would also oppose the geographical widening of the resources because of the infrastructure and human capital problems.

In regards to this position, this thesis argues that establishing technoparks in each city, proliferating R&D centers superficially, and relaxing resource allocation criteria in all domains of the policy *in the absence of evidence-based policy-making mechanisms* and with the expectation that those investments would promote innovation culture in time on their own, cannot be considered as a rational policy design. It is true that many investments pay dividends many years later in the field of R&D and innovation. However, the proliferation of resources *before, and in the absence of, further assessments and impact evaluation* cast serious doubts on the rational utilization of the resources.

Furthermore, it is important to highlight that even in a scenario where the cost of each technopark or any other R&D investment would be literally zero in regards to financial resources allocated to it, *there are still essential costs that must be considered while making such an investment*. The land, the infrastructure, the human capital, and the time that are invested in a project all constitute *a huge cost* for a country, especially if the country in question aims at catching-up with its developed counterparts. Infrastructure is relatively well-known, but

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especially in regards to *human capital* and *time*, the interview evidence suggests that the already scarce human capital in Turkey is obliged to spend its time on unproductive initiatives – investments that are already considered as unpromising right at the outset due to various infrastructure or other feasibility problems. This situation not only demotivates otherwise productive bureaucrats and decision-makers, but also constitutes a significant negative externality that comes with the neo-populist approach to R&D fund allocation.

6.4 Concluding remarks

This chapter has aimed to shed light on the AKP's motivations and logic in R&D fund allocation to the private sector during the 2000s. The question has been straightforward: Has the AKP's approach to allocation been clientelistic, rational, or neo-populist? The chapter has argued that while rent-seeking behavior has been existent in the R&D sector, and political interference occasionally influenced allocation decisions, *clientelism has not been prevalent in the R&D sector.* Put differently, the distribution did not exclude the foes as in the cases of the provision of municipality services or the nurturing of new businessmen in the construction sector.

However, *this does not imply that the allocation has been handled rationally in the R&D sector in the 2000s*. In contrast, *populist motivations have prevailed*, whereby an overwhelmingly horizontal policy design that has accompanied by relaxations in resource allocation criteria has led to a questionable allocation strategy *in the absence of well-established ex-ante, interim, and ex-post evaluation mechanisms.* In addition, *a top-down approach has characterized policy-making processes*, in contrast to a bottom-up one. In regards to (i) the compatibility of the horizontal policy design with the AKP's overall neoliberal agenda, (ii) proliferation of resources in the absence of evidence-based policy-making mechanisms, (iii) lowering of expectations on the quality of R&D investments, and (iv) implicit goal of nurturing new clientele, this chapter has labelled the AKP's approach to R&D fund allocation as populist.

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Furthermore, the populism that is observed in the R&D sector (allocation of governmental resources to the private sector) is said to be a part of the AKP's broad 'controlled neo-populism' (Öniş 2012) during the 2000s –which has been different from the common understanding of clientelism in many ways (the absence of foes' exclusion from distribution network), but yet encompassed a different version of clientelism in the form of recruiting new clientele.

Before passing to the final chapter, it is essential to highlight one point explicitly. Although the collective evidence that is provided in this dissertation suggests that clientelism has not been the main issue in the R&D sector in Turkey during the 2000s (akin to the form that is observed in the construction and the media sectors), this argument requires further in-depth investigation –especially at the micro-level by focusing on specific governmental support programs. Since this is the first study that has questioned clientelistic relations in the R&D sector in Turkey (to the best of my knowledge), and since the study relies on a limited number of interviews (although interview evidence is tried to be triangulated via an examination of the R&D investment patterns in the 2000s), more scholarly work is needed to put this argument into test.

Furthermore, since R&D policy refers to *governmental support funds allocated to the private sector with the aim of promoting R&D* in this dissertation, the analysis in regards to clientelism *does not* cover all governmental support programs. To exemplify, funds that are distributed to universities, even with the purpose of enhancing R&D, fall outside the dissertation's scope. This is an important point that needs to be highlightened. In Turkey, universities have always been politicized and have had problematic relations with the state. Their budgets have commonly been subject to political considerations. The politicized character of the universities did not change during the AKP period. Therefore, the elaboration of the

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universities' role in the innovation system (with an emphasis on R&D fund allocation) can be considered as a future research agenda.

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CHAPTER 7: Conclusion

This thesis has provided an in-depth examination of *R&D policy-making processes in Turkey*. The primary focus has been placed upon the *AKP period*. After coming to power in 2002 with a landslide electoral victory, the AKP succeeded in winning three successive general elections in 2007, 2011, and 2015.[154] Since 2002, the AKP has been forming strong single-party governments. Accordingly, the AKP period has been an important epoch in Turkish politics whereby crucial socio-economic transformations have taken place, and many sectors have been affected by the AKP governments' vision and agenda. Although attracted virtually no scholarly attention, *R&D has been one of those sectors*. The developments in the Turkish R&D sector have been important in themselves, but they have also had certain implications for the broad literature on the political economy innovation, and have been linked to important debates on the Turkish political economy.

The *central research question* of this dissertation has been *why did Turkish R&D policy change in the 2000s, and what political economy factors did affect the process?* The answer has been based on *three arguments, each corresponding to a different layer of R&D policy*. First, it has been argued that *technological nationalism,* coupled with the opposition's *institutional weakness in policy-making,* turned down the opposition's voice in the parliament (Chapter 4). Even though the opposition held significantly different views on R&D policy (Chapter 3), it nevertheless supported AKP on key R&D legislation. The symbolic meanings and expectations attached to innovation (*innovation is thought to fuel modernization, sustain a nation's independence, and reflect national dignity in a globalized world*) led opposition parties

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[154] The AKP failed to form a single-party government after the general election that was held in July 2015. However, the party managed to accomplish that soon afterwards following the snap election held in November 2015. For the parties' vote shares in Turkey during the 2000s and the distribution of seats in the parliament see appendix 2. See Öniş (2016b) for an elaboration of the two general elections that were held in 2015.

to support AKP. The opposition' stance and qualities *hindered the formulation and effective deliberation of alternative policy choices in the realm of R&D policy*.

The *second* layer of R&D policy-making has been about the *tug-of-war between the executive and the bureaucracy* (Chapter 5). If the opposition's stance has influenced R&D policy relatively *indirectly*, the executive's intervention in autonomous innovation agencies has *directly* shaped R&D policy in Turkey. On the one hand, while TÜBİTAK preferred to concentrate resources on developed regions and strategic sectors in the 1990s, the agency has embraced the AKP's horizontal policy design *once the AKP-backed cadre took office in 2004 amid an amendment in TÜBİTAK's foundation law*. Furthermore, whereas TÜBİTAK favored a distribution that prioritized *quality of outputs* rather than *increases in inputs*, the agency began to promote *relaxations in resource allocation criteria* after 2004 in line with the AKP's preference. On the other hand, the executive's interference with innovation agencies *hampered institutionalization of evidence-based policy-making mechanisms*, and paved the way for a *top-down policy-making approach*. These had also influenced R&D policy-making (Chapter 5).

The third dimension of policy-making has been about *the AKP's motivations in pursuing a specific variant of R&D policy* –a horizontal policy design complemented with relaxations in resource allocation criteria. Furthermore, this layer of analysis inquired *whether the distribution has been based on sound economic thinking, clientelism, or neo-populism*. In regards to the first, the AKP's horizontal policy design has been 'ideologically consistent' with the party's overall neo-liberal agenda (especially in the early years) (Section 7.2.1).[155] In regards to the second, while the evidence suggests that clientelistic relations have also been existent in the

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[155] 'Ideological consistency' questions if a policy is consistent ideologically with a broader agenda that is pursued in a political economy (Webber 1986, 545–46). The argument is, a policy's 'ideological consistency' affects its changes of approval and implementation. Berman (1991, 31–33) highlights the importance of 'ideological consistency' in the domain of innovation policy. As noted, because the Reagan administration in the US subscribed to a market-oriented perspective, whereby "the efficiency of the markets" was brought to the fore at the expense of government intervention, the administration also preferred market-friendly policies over government spending programs in the domain of innovation (Berman 1991, 31–32). Similarly, the AKP's horizontal policy design has been 'ideologically consistent' with the party's broad understanding of the world –especially in the initial years.

allocation of R&D resources, the major problem *has not been one of clientelism (as seen in the construction and the media sectors in Turkey)*, but it *has been one of neo-populism (including a different variant of clientelism)* –which can be considered as part of the AKP's broad 'controlled neo-populism' (Öniş 2012, 135).[156]

As discussed in the introductory chapter, this dissertation aims at contributing to the political economy scholarship in different ways, at different levels of abstraction. On the one hand, the thesis speaks to NSI approach and the works on the politics of innovation policy (Section 1.3). On the other hand, it speaks to the scholarships on technological nationalism, developmental state, and clientelism (Chapter 2). Although the three literatures are *equally important*, since each sheds light on a *different layer of R&D policy-making*, the developmental state literature is relatively *more important* since the empirical chapters collectively provide an opportunity to assess the Turkish state's developmentalist turn in the R&D sector. This developmentalist turn has not been explored yet, but is elaborated in this concluding chapter. Last, by capitalizing on the single-case research design's advantages, the dissertation offers numerous empirical contributions within the Turkish context.

This concluding chapter mainly concentrates on the *major* findings and contributions of the dissertation, and elaborates their implications for the broad literature. In this regard, Section 7.1 puts forward the main contributions to the political economy of innovation literature. Section 7.2 discusses the essential empirical findings in the context of the Turkish political economy scholarship. *Not all empirical contributions* are discussed in Section 7.2 to avoid repetition, as many are already outlined both in the introductory chapter (Section 1.7), and at the end of each chapter. Section 7.2 also concentrates on the Turkish state's developmentalist turn in the R&D sector. After documenting the developmentalist ambition in the aftermath of

[156] As elaborated at length in Chapter 2 and Chapter 6, clientelism and populism are fluid concepts that are difficult to distinguish from one another in many cases. Therefore, one needs to be careful while interpreting this conclusion.

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the 2008 economic crisis, the section assesses the Turkish state's transformative power by harnessing the empirical findings of Chapter 5 and Chapter 6. Section 7.3 discusses the thesis' limitations, and outlines future research avenues. Finally, Section 7.4 concludes.

7.1 Potential contributions to the political economy of innovation scholarship

As elaborated at length in the introductory chapter (Section 1.1 and Section 1.3.1), national-systems-of-innovation (NSI) has become the *mainstream paradigm* in innovation studies in the last twenty years. In many works, the term 'political economy of innovation' is used as a *synonym* of NSI approach. Although NSI scholars aimed at covering both the 'political' and 'economic' dimensions of the 'political economy,' they nevertheless focused exclusively on the 'economic' one. They suspected that the political realm would influence innovation processes significantly (especially via the state); thus, a scholarly attention was called for to harness "the knowledge about policy processes accumulated within political science" (Edquist 2001, 20).

In fact, a growing body of work on the politics of innovation policy has aimed at accomplishing this in the last decade or so –even though there has been a limited interaction between the two literatures. Various factors are cited as important political determinants of innovation –*although the primary attention has not been placed upon the policy-making process itself in many cases* (Section 1.2 and Section 1.3.2). Still, one major goal of this literature is to demonstrate the importance of the political realm in innovation studies, and argue against the apolitical readings of institutions and institutional change.

Besides minor contributions (tracing of many political factors that are deemed to be important in the literature within the Turkish context), this thesis aims to contribute to the political economy of innovation scholarship (NSI approach and the works on the politics of innovation policy) in two ways. These potential contributions *rely on Turkey-specific findings* (which are empirical contributions within the Turkish case), *but have strong implications on the broad literature.*

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First, the focus that has been placed upon R&D as a specific domain of innovation policy is indicative for the broad literature. In this thesis, R&D policy refers to the *distribution of R&D funds to business, or entrepreneurs, with the goal of enhancing R&D*. It represents a specific domain of innovation policy. In the literature, innovation policy is commonly used as a term that spans many policy fields including science, technology, education, and R&D. Frequently, these domains are examined together. For instance, Doner and Schneider (2016, 613) concentrate on education and R&D policy (overall R&D spending in a country), and note that, "for brevity, we concentrate on education and [R&D], but the framework applies to a range of other policy areas…which are similarly institution intensive." However, without even passing to other policy domains, *there are crucial differences among the sub-domains of innovation policy in regards to the degree of political salience.*

As exemplified also in the introductory chapter (Section 1.3.2), discussions on science and education policy are heavily ideological –like the theory of evolution and the role of religious teachings in national education, and they can easily get on voters' and parties' nerves. Consequently, these domains also attract great media attention. In contrast, R&D policy (allocation of governmental resources to the private sector) is much less salient. In some cases, factors that directly influence R&D policy also attract attention. The executive's intervention in autonomous innovation agencies is a case in point. Yet, the path of R&D policy is not the issue that is being discussed even in those cases. This characteristic of R&D policy seems not to be Turkey-specific, since science and education policy is a frequently politicized topic in many countries, developing or developed, in contrast to R&D policy.[157] Thus, R&D policy-making either *tends to be characterized as technocratic in nature*, or *is thought to offer little to excite political scientists and political economists*.

[157] The interaction between science and religion, and its repurcussions on science and education policy, is a discussion topic in many countries. This includes, but not limited to, Argentina, Brazil, Uruguay, the US, and the European countries. The issue in question is part of a broader concern about the role and place of religion in public sphere in the 21st century, and it is directly linked to identity formation.

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In this regard, the *seemingly above-politics trait of R&D policy* makes it a *least-likely-case* to study Levy (2008, 12) –if political dynamics turn out to be important in this domain, then they would be crucial in all other innovation-related policy fields. In fact, this has been the case as demonstrated within the Turkish context. The opposition parties' perception of innovation (technological nationalism), and their stance on innovation policy (institutional weakness in policy making and low priority assigned to R&D in practice), have *relatively indirectly* affected R&D policy *by hindering effective formulation and deliberation of alternative policy choices* (Chapter 4). The executive's interventions in autonomous innovation agencies have *directly* affected R&D policy by causing shifts in agencies' stance on R&D policy (Chapter 5). The ruling party's motivations in resource allocation have also *directly* influenced R&D policy (Chapter 6). Thus, R&D policy *has not been pursued by technocrats in an above-politics manner*, whereby policies are designed based on economic rationale only, but *political factors have significantly shaped the processes*.

Second, the opposition parties' indirect, and somewhat disguised, influence on R&D policy in Turkey *is indicative for the broad literature*. Once again, this finding is a Turkey-specific one, but it has strong implications for the broad literature. In many works that elaborate political parties' influence on innovation, technology, or industrial policy, the primary focus is tended to be placed upon the ruling party or the executive. In the politics of innovation policy scholarship, while some inquiries concentrated on the ruling party or coalitions to see how a change in government influenced innovation policy (O'Riain 2014, 68), some others questioned how political decisions that are taken during critical junctures affected innovation-related phenomena (Breznitz 2007). In many cases, the opposition has attracted attention only when the issue is heavily ideological –such as debates on religion and education.

This relative lack of interest in the opposition in innovation policy-making is particularly apparent in technological nationalism scholarship (Section 2.1). On the one hand,

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many studies on techno-nationalism, techno-globalism, and neo-techno-nationalism tended to match specific policy packages with a variant of technological nationalism –without focusing much on the 'national' content of the concepts. For instance, techno-nationalism is frequently associated with protectionist policies. On the other hand, although some works did not equate policy packages with a variant of technological nationalism, they still perceived technological nationalism as a 'state tool' –a specific government policy. Yet another reading of technological nationalism focused more on the 'nationalism' to go beyond the 'state-tool' characterization. In all these different approaches, however, one point seemed to be in common: *absence of a focus on the opposition parties in policy-making processes*.

In this regard, and taking into consideration the seemingly above-politics trait of R&D policy, this thesis suggests that the opposition's attitude (*an important part is technological nationalism*) may also matter in contexts where *the policy in question is not politically salient*, is *considered as technical*, and *the ruling party has the power to enact legislation on its own*. It might be the case that, as in Turkey, the opposition's ideational stance (technological nationalism), and institutional weakness in R&D policy-making, hinder *the creation and deliberation of alternative policy choices*. [158] As Breznitz (2007, 4) notes within the context of innovation policy, "the art and profession of creating alternatives and the social struggles of choosing between, and acting upon, them," that is *politics*, "seems to have lost [its importance] in the social sciences." The opposition takes an important part in the creation process of alternatives, and in the process of choosing between them also; therefore, one should turn a keen eye on the opposition within the context of innovation policy-making processes.

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[158] Chapter 3 demonstrates the fact that opposition parties have had significantly different views on R&D policy in Turkey during the 2000s. The CHP's views have contradicted that of the AKP's especially. Whereas the AKP has subscribed to a horizontal policy design and promoted relaxations in resource allocation criteria, the CHP has favored a sectoral approach and opted to concentrate resources on relatively developed regions. Both the CHP and the MHP suggested a legal framework that was significantly different from the one created by the AKP. Despite these differences, the opposition supported AKP on key legislation due to technological nationalism and institutional weakness in policy-making.

7.2 Potential contributions to the Turkish political economy scholarship

As mentioned, this thesis has tried to preserve its analytical focus, but there are fertile grounds to further analysis based on the findings provided throughout the chapters. This section concentrates on those, and discusses the thesis' main empirical findings in the light of the broad literature on the Turkish political economy.

7.2.1 Discussions on 'the New Turkey,' and neo-populism in the R&D sector

In the last decade or so, there has been an ongoing discussion in Turkey on the economic performance of the country during the AKP period. On the one hand, some scholars argue that Turkey has achieved a tremendous success in almost all areas during the 2000s, thanks to the strong leadership of the single-party AKP governments (Karagöl 2013). In contrast to the 1990s, a period of weak coalitional governments in Turkey, the AKP is said to implement various reforms in many policy fields, which have collectively constituted 'the New Turkey' in the first decade of the new millennium. This perspective has been in line with government officials' rhetoric. On the other hand, many scholars have had serious doubts about this view, since the Turkish economic performance is said to (i) be exaggerated by the governments and proponents,[159] (ii) reflect apparent structural weaknesses and fragilities that casted doubts on the sustainability of the growth performance (Subaşat 2014), (iii) characterized by 'speculative-led' and 'jobless-growth' (Yeldan and Ünüvar 2016), and (iv) accompanied by a 'crony capitalism' in which clientelistic relations and various forms of corruption have dominated the political economy (Buğra and Savaşkan 2014; Boratav 2016). Before passing to the discussion of this debate, a brief elaboration of the AKP's economic policies is in order.

At the time when the AKP was formed in August 2001, the Turkish economy had been in turmoil. The country had been witnessing the worst economic downturn of its history since

[159] "Turkish economic myths", Dani Rodrik's weblog, 16 April 2015.

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1945, as many macroeconomic indicators were revealing the economy's alarming condition. The GDP contructed 2.1 percent in the first quarter of 2001, 8.9 percent in the second quarter, and 7.1 in the third quarter (Ozkan 2005, 546). By the end of 2001, industrial production declined by 7.5 percent, and inflation increased to almost 70 percent (Narbone and Tocci 2007, 240). The Turkish lira was devalued by almost 50 percent, and there had been a decline in the poverty threshold in comparison to the 1994 levels (Patton 2006, 513). The 2001 economic crisis affected not only wage earners, but also all sections of society, in contrast to the previous crises (Öniş 2009, 409). The very first line of an article published in *The Economist* at the beginning of 2001 regarding the Turkish experience was "heads are beginning to roll."[160] In fact, this had happened.

Before coming to power in 2002, the AKP had already declared its support for a neoliberal agenda that was promoted by the Bretton Woods institutions to recover the Turkish economy and promote a sustainable growth path. In fact, the DSP–ANAP–MHP coalition headed by Bülent Ecevit had been pursuing that agenda under the auspicies of the IMF. For instance, the Turkish government signed a $12 billion agreement with the IMF in March 2001, appointed Kemal Derviş (a World Bank Vice President) as the Minister responsible from the economy, and attributed an above politics character to that Ministrial position (ibid.). A policy package including banking reform, budget cuts, and privatizations had begun to be implemented by Derviş. In its pre-election discourse, the AKP officials supported these initiatives, and Recep Tayyip Erdoğan endorsed the three-year IMF-backed economic program that had already been agreed by the coalition government (Coşar and Özman 2004, 63; Patton 2006, 515).

Until the late 2000s, the AKP had indeed sticked to its pre-election discourse and pursued the essential elements of the neoliberal agenda in many respects. The targets that were determined by Derviş had been adopted as they were, and implemented fully (Boratav 2016,

[160] "Turkey in turmoil", *The Economist*, 27 February 2001.

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5). When a standby program with the IMF was expired in 2005, a new three-year credit agreement of $10 billion was signed with the institution (ibid.). The Turkish Central Bank sticked to the IMF recommendations until the late 2011 via inflation targeting (ibid.). In those years, while the partnership with the Bretton Woods institutions revealed the AKP's adherence to economic reforms, the integration process with the EU reflected the party's democratic, modern, and reformist credentials. In fact, the two domains reinforced each other. As noted, "the EU and IMF conditionality became interlocked in the sense that the incentives provided by the EU in the direction of eventual membership rendered the task of implementing IMF disciplines easier" (Öniş 2009, 417). Fiscal discipline, privatization, flexibilization in labor law, transformation in the public administration system through decentralization in the spirit of the 'regulatory state,' etc. had been the main pillars of the AKP's neoliberal agenda during the 2000s (Coşar and Özman 2004; Patton 2006; Öniş 2009; Bozkurt 2013; Boratav 2016). As such, some scholars labeled the AKP's initial years as "neoliberalism with a Muslim face" (Coşar and Özman 2004, 57).

In this background, some scholars argued that in sharp contrast to the 1990s, during which weak coalition governments had continuously failed at implementing rational economic policies in the midst of persistent political and economic turmoil in Turkey, *the AKP has managed to energize the Turkish economy in the 2000s via strong leadership, political stability, and an effective neo-liberal agenda* (Karagöl 2013). In fact, the coalition governments' weaknesses, and their inability to formulate effective policies, had been apparent to everyone in the 1990s, including foreign observers. The following paragraph taken from an article published in *The Economist* in 1997 summarizes the circumstances back then.[161]

> To do battle with inflation, Gazi Ercel announced last month, "painful measures are necessary." The governor of Turkey's central bank has been echoed by the Treasury's chief number-cruncher and a cabal of tycoons. The snag is, bruising voters is the last thing Mesut Yilmaz, the head of a weak coalition government, wants to do, especially

[161] "Talking Turkey", *The Economist*, 9 October 1997.

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> since 1998 may be an election year. In consequence, Turkey now has one of the world's highest inflation rates—and Mr Yilmaz has a spot of bother with the International Monetary Fund.

The AKP is said to put an end to the indecisive and ineffective characteristics of the 1990s' policy-making processes by injecting stability to the political economy, and pursuing a rational neo-liberal agenda in the sphere of economics. Furthermore, the economic success of the AKP is considered as part of the party's broad accomplishments in other domains (democratization, etc.), and is perceived as a step that is taken in the right direction toward the creation of 'the New Turkey' in the new millennium. This has also been the AKP officials' rhetoric. As noted in one scholarly work on the AKP period, "[the AKP has] embarked on a series of reforms in politics, the economy, foreign policy and other key areas that are collectively referred to as *the New Turkey* [consequently] government policies initiated a period of uninterrupted growth" (Karagöl 2013, 115–16).

State officials and scholars who have promoted 'the New Turkey' narrative commonly make references to the Turkish economy's strong recovery after the 2001 economic crisis. On the one hand, the robust growth recod of the Turkish economy (especially until 2007) is commonly emphasized (Toledano 2011, 40–41; Karagöl 2013, 116–17) (table 3). During 2002–2011, the Turkish economy grew by 6.5 percent on average, surpassing the last thirty years' average of 4.7 percent. On the other hand, noteworthy decreases in inflation is also noted as a success of the AKP governments. In fact, inflation had been a long-lasting problem of the Turkish economy, and significant decreases in inflation is observed during the AKP period (table 3). Furthermore, the AKP's governance of the political economy is commonly praised. For instance, as argued in regards to the formulation of the annual budgets, "credibility, transparency and predictability represented consistent characteristics of the AK Party government's annual budgets between 2002 and 2012" (Karagöl 2013, 119).

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Table 3: Main macroeconomic indicators during the AKP period.

	2001	2002	2003	2004	2006	2008	2010	2012	2015
GDP in current prices (Billion TL)	240	350	455	559	758	951	1099	1417	1953
GDP per capita (US $)	3019	3492	4565	5775	7597	10444	10003	10459	9257
GDP growth rate (constant prices)	-5,7	6,2	5,3	9,4	6,9	0,7	9,2	2,1	4
Imports (Billion US $)	41	52	69	98	140	202	186	237	207
Exports (Billion US $)	31	36	47	63	86	132	114	135	144
Unemployment rate (%)	8,4	10,3	10,5	10,8	9,0	10,0	11,1	8,4	10,3
Current account balance (% of GDP)	1,96	-0,26	-2,51	-3,61	-6,01	-5,34	-6,07	-6,09	-4,47
Inflation, GDP deflator (%)	52,85	37,43	23,27	12,40	9,33	11,99	5,68	6,90	7,47

Source: TurkStat, OECD, and World Bank.[162]

In sharp contrast to these arguments, many scholars have been quite skeptical about the validity of 'the New Turkey' narrative. To begin with, the Turkish economy's growth record is said to be exaggerated frequently. For instance, in a famous debate between Dani Rodrik and Mehmet Şimşek (the then Turkish Minister of Finance) over twitter, Rodrik underlined the fact that the Turkish growth performance is sometimes exaggerated via a misuse of economic indicators.[163] In brief, the discussion between Rodrik and Şimşek started when *The Economist* made a correction in one of its articles on Turkey by noting, "this article ['The new young Turks' published on 8 June 2013] originally said that Turkey's GDP per person had tripled in the past ten years. This was true only in nominal terms. In real terms, GDP per person has risen by just 43%. Sorry."[164] After Rodrik had endorsed this correction, Mehmet Şimşek argued that GDP per capita had indeed tripled in Turkey during 2002–2012, by claiming that the appropriate way of measuring the change was to look at nominal GDP in dollar terms. In reaction to this, Rodrik noted, "I'm sure Minister Simsek knows the difference between nominal and real."[165]

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[162] For a more comrehensive analysis of Turkey's macroeconomic indicators see Yeldan and Ünüvar (2016, 14).
[163] Emre Deliveli, "Macroeconomics 101 for finance ministers", *Hurriyet Daily News*, 21 June 2013.
[164] "The new young Turks", *The Economist*, 8 June 2013.
[165] Emre Deliveli, "Macroeconomics 101 for finance ministers", *Hurriyet Daily News*, 21 June 2013.

Many economists contributed to this debate by carefully explaining the differences between nominal and reel GDP (Kibritçioğlu 2013). In short, using nominal GDP in dollars while calculating Turkey's economic performance during 2002–2012 is not meaningful in many respects, since nominal GDP does not show the *real* increase in production due to price effect. Furthermore, when measured in dollars, Turkish GDP calculations pose additional concerns due to exchange rate fluctuations. Thus, critics have emphasized that when one uses appropriate indicators to measure the Turkish economy's performance during the 2000s, one sees that the situation has not been as marvelous as it is described by the Turkish government officials.

Equally importantly, Rodrik also showed how the 'Turkish miracle' pales when a cross-country comparison is made.[166] When compared with countries that are in the same league with Turkey in terms of development level, the Turkish performance does not stand out as an exception. Like Turkey, many countries have exploited, and benefited from, the 2000s' exceptionally favorable global environment. For instance, although Turkish GDP in per capita (at constant prices) had increased by 50 percent during 2002–2014, and this had been a positive development, it was nevertheless less impressive than many other developing countries' performances. These include, Sri Lanka, Bangladesh, Uruguay, Peru, Argentina, Ghana, Indonesia, Phippines, India, and China.[167] Thus, despite apparent improvements, there had been nothing 'special' about the Turkish experience, in the sense that the strong rhetoric of 'the New Turkey' promotes.

Many scholars have also heavily criticized the 'Turkish miracle' narrative by highlighting the fragile nature of the Turkish growth performance in the 2000s (Subaşat 2014; Yeldan and Ünüvar 2016). For instance, Yeldan and Ünüvar (2016, 13) note that the Turkish growth performance had been 'speculative-led' during the AKP period, as *it had been mainly*

[166] "Turkish economic myths", Dani Rodrik's weblog, 16 April 2015.
[167] Ibid.

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driven by foreign finance capital inflows "lured by significantly high rates of return offered domestically." Furthermore, the 2000s is said to have witnessed a 'jobless growth,' as "rapid rates of growth were accompanied by high rates of unemployment and low participation rates" (Yeldan and Ünüvar 2016, 13). In a similar way, Subaşat (2014, 137) concludes, "Turkey's economy signifies another bubble economy where economic growth is led by domestic demand which is supported by external resources. Turkey's economy is…neither a 'miracle' nor even a mild success story."

In similar lines, many scholarly works underlined how the 2000s' favorable global conditions, and the 2000 and 2001 economic crises in Turkey, had contributed to the AKP's subsequent electoral success, and the positive macroeconomic atmosphere in Turkey (Öniş 2012, 135; Boratav 2016, 6–7). As Boratav (2016, 5) asserts, "considering the international economic environment and the preceding period of stagnation, 2003 was the best of all possible times for moving into government." Boratav (2016, 6) further notes, "the early years [of the AKP], i.e. 2003–2007, with an average growth rate of 7.3 per cent is considered by some observers as an economic success story owed to AKP policies. However, factors beyond the AKP's specific contributions were decisive: availability of excess capacity characterizing the 1998–2002 period and annual capital inflows averaging 7.8 per cent of GDP during the first five years of AKP rule had significantly contributed to this outcome."

In the context of this broad debate, a specific discussion is highly relevant for the purposes of this thesis. In line with 'the New Turkey' narrative, some have argued that the 2000s' successful growth record has been based on *the entrepreneurial awakening of the 'Anatolian Tigers'* in Turkey. The AKP is said to have energized the Anatolia's entrepreneurial spirit by pursuing a neo-liberal agenda that enabled upward social mobility *for those Islamic-leaning businessmen who were previously excluded from the allocation processes by the secular elite*. In fact, one of the very reasons of the first Islamic party's establishment in 1970 in Turkey

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was to represent the interests of Anatolia's devout businessmen against the then Justice Party government which had close ties with the secular business elites (Başkan 2010, 401). Thereafter, Islamic-oriented parties had commonly raised the voices of Anatolian businessmen, who were usually owning SMEs. Thus, SMEs were historically "discontented with the allocation of state resources to large businesses in the major cities and demanded state protection and support for themselves in order to receive 'their due share of the expanding economic pie [in Turkey]'" (Başkan 2010, 401). In this regard, the AKP is said to have cherished Anatolia's entrepreneurial potential *via a neutral and performance-awarding neo-liberal agenda*. This is said to explain the 2000s' strong economic performance under the watchful eyes of the AKP.

In their comprehensive study, Buğra and Savaşkan (2014) harshly criticize the claim that the 2000s' economic performance has relied on an entrepreneurial awakening in Turkey. As the writers demonstrate, the so-called 'Turkish miracle' has actually been based on a *regulatory framework* (not the market forces), whereby *politically privileged businessmen* were supported via *clientelistic relations*. In constrast to the argument that the state's role in the political economy has dimished in Turkey in the post-1980s, and during the 2000s, the writers indicate how the Turkish state has forged new ways to intervene in the economy to only increase its influence and dominance in the political economy. Buğra and Savaşkan (2014) provide many examples by exploring the close interactions between the AKP and the newly emerged business groups in Turkey, mainly in the construction and the media sectors. They also show how the AKP's interferences with the Public Procurement Agency undermined the agency's capability to act independently, and numerous amendments in the Public Procurement Law raised doubts about the so-called market-based and rational allocation of the resources.[168] Therefore, the analysis of Buğra and Savaşkan (2014) suggest that rather than a noteworthy and

[168] By using a data set on 49,355 high-value procurements, Gürakar (2016, 67–106) supports Buğra and Savaşkan (2014).

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comprehensive entrepreneurial awakening, the Turkish experience was based on a mere 'crony capitalism.'

In this context, this thesis provides support for Buğra and Savaşkan (2014) *with a nuanced argument*. Based on, (i) the executive's continuous interference with key innovation agencies during the 2000s and subsequent negative effects on R&D policy-making processes (Chapter 5), (ii) the broad problems in regards to evidence-based policy-making mechanisms and the flexibilizations in resource allocation criteria in that environment (Chapter 5 and Section 7.2.2), (iii) the prevalence of a top-down policy-making approach and problems in regards to bureaucratic coordination (Chapter 5 and Section 7.2.2), and, (iv) the business' (both secular and conservative) absence in R&D policy-making processes (Chapter 5), *strongly suggest that the Turkish experience has not really relied on an entrepreneurial awakening during the 2000s*.

Be that as it may, this thesis suggests that the primary issue *has not been* one of clientelism in R&D fund allocation to the private sector in Turkey. Put differently, clientelistic relations that are outlined in detail by Buğra and Savaşkan (2014) within the context of the construction and the media sectors have not been *dominant* in the R&D sector. Instead, a *neo-populist* approach to fund allocation has been the main issue, which can be considered as part of the AKP's broad 'controlled neo-populism' in the last fifteen years (Öniş 2012, 135) (Section 2.3.2 and Chapter 6). Although this neo-populism *has included clientelistic tendencies in the form of recruiting new clientele and transferring resources to friends*, it has not overwhelmingly involved an *exclusionary character* in resource allocation based on political considerations (Section 2.3). As outlined at length in Chapter 6, flexibilizations in resource allocation criteria and lowering of expectations on R&D investments in the face of major monitoring and steering problems, and the dominance of a top-down policy-making approach, have characterized the essence of the neo-populist approach.

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On this note, as also elaborated in detail in Chapter 6, the question becomes: why the R&D sector seems to be a somewhat exception in regards to the *relative* absence of strong clientelism. At least two arguments can be made. First, *the business does not seem to be genuinely interested in high-tech production or substantial technological upgrading in Turkey*. The lines of business where clientelism are overwhelmingly present, such as the construction sector, have nothing to do with high-tech in broad terms. Second, even the total size of R&D fund *is not appealing enough to attract clientelistic relations*. There are simply more effective ways to rent-seek and nurture new allies in the business world. As Biddle and Milor (1997, 295) note, "sensitivity to political signals correlates with the nature of the agency in question."[169] If an agency is not a potential source of rent-creation, then it is relatively less subject to political interference (ibid.). The R&D sector has seemed to support this broad claim.

7.2.2 The assessment of the Turkish state's transformative power in the R&D sector[170]

As mentioned, this thesis has tried to preserve its analytical focus throughout the chapters (*the political economy factors that have affected R&D policy-making processes*), but there are fertile grounds to further analysis based on the empirical findings presented in Chapter 5 and Chapter 6. The evidence strongly suggests that the Turkish state has yet to reflect the core institutional features of the developmental state *in the R&D sector*. Although several concrete steps have been taken by the AKP governments in the 2000s, those steps could not go beyond the phase of regulation. To be able to make this argument, this section (i) documents the Turkish state's

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[169] This argument rests on an interview conducted with a former top bureaucrat and a high-level executive in the private sector.

[170] With Assist. Prof. Mustafa Kutlay (being his invitee and co-author), we are writing an article on the Turkish developmental state that raises this question. While the empirical section of that paper (currently under review and expected to be published as part of a special issue on the developmental state) relies on this thesis, the theoretical part is written by Assist. Prof. Mustafa Kutlay.

developmentalist ambition in the R&D sector, (ii) assesses the state's transformative capacity, and (iii) discusses the implications of the analysis for the broad literature.[171]

The developmentalist turn in Turkey in the R&D sector during the latter half of the 2000s

The AKP governments have taken some crucial regulatory steps in the R&D sector, especially after the 2008 economic crisis, which reflected the Turkish state's developmentalist ambition in the R&D sector. The main objective has been to pull Turkey out of the 'middle-income trap' and to make Turkey a player in the international arena in regards to high-tech and R&D. As noted by Fikri Işık, the then Turkish Minister of Science, Industry, and Technology, "Turkey can no longer grow by gaining from demand and making use of a cheap labor force. Turkey must focus on goods with high added value and enhancing its production quality. Also, it must make innovative understanding the basis of production."[172] This has been the primary target that has been set by the state.

To begin with, the AKP made certain attempts to *institutionalize the developmental mentality* in the R&D sector. The Supreme Council for Science and Technology (SCST), which is the highest-ranking science, technology, and innovation policy-making body in Turkey, has become fully operationalized. After being established in 1983, the Council could only conduct three meetings in fourteen years until 1997, although it was supposed to meet two times annually. During 1997-2004, the Council could only meet once in a year. With the emphasis placed upon the Council by the AKP governments, the Council meets two times annually since 2005. Furthermore, the MoIT has been replaced with the *new* MoSIT in 2011. One important goal has been to *improve bureaucratic coordination* in the innovation system. The main actors

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[171] The literature suggests that 'state capacity' does not have much analytical value in the abstract due to operationalization problems. One should concentrate on a specific policy domain to be able to offer concrete and relevant analysis (Katzenstein 1978; Krasner 1978; Atkinson and Coleman 1989; Weiss 1998, 2003; Painter and Pierre 2005). In regards to this, the attention that has been paid to R&D sector takes the literature's general concern into account (I would like to thank Mustafa Kutlay for bringing this into my attention).
[172] "Turkish gov't readying major R&D initiative," *Daily Sabah*, December 20, 2015.

of the system, including TÜBİTAK, KOSGEB, and TÜBA, are connected to this newly established Ministry.

New key legislation has also been enacted to promote R&D and to better monitor and enhance the effectiveness of implemented policies. As such, the 'R&D law' was enacted in 2008 leading to the establishment of R&D centers by the private sector (Chapter 2). The government also amended the 'Technopark Law' more than once to further encourage R&D (Chapter 3). The creation of 'Technology Transfer Offices' is set as a requirement in the law, and their establishment is incentivized to ignite university-industry collaboration. A new regulation on the surveillance of state subsidies was enacted to outline the principles and procedure to regulate the state incentives in line with the EU acquis. The State Aids Monitoring and Supervision Board has been set up with the law, and the General Directorate of State Aids has been created under the Undersecretariat of Treasury to carry out the Board's secretariat services.

A new unit has also been founded within the MoSIT to conduct impact evaluation of governmental support programs. This unit has aimed at spreading the practice of evidence-based policy-making among key organizations, and improving bureaucratic coordination in the innovation system in this regard. Some indexes have been created to assess main players' performances in the innovation system. Accordingly, 'The Entrepreneurial and Innovative University Index' has been prepared under the auspices of TÜBİTAK since 2012, and the Ministry has been performing the 'Technology Development Zones Performance Index' study since 2013.

To sum up, the Turkish state has subscribed to a developmental agenda in the R&D sector in the latter half of the 2000s. The primary goals have been to overcome the middle-income trap, promote R&D, and make Turkey an attractive base of high-tech production. The AKP governments have aimed at creating an innovation-conducive environment for

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entrepreneurs via rational policy-making, whereby the role of the state is constantly emphasized. The question is, has the Turkish state succeeded in its attempts? In other words, has the Turkish state reflected the main characteristics of the developmental state? To be able to answer these questions, a brief definition needs to be provided for 'the developmental state,' which requires a brief re-visiting of the scholarship.

The assessment of the Turkish state's developmentalist turn in the R&D sector

In this sub-section, four defining characteristics of the developmental state are traced in Turkey in the R&D sector. These are (i) the bureaucracy's autonomy and embeddedness, (ii) the monitoring and steering of the R&D funds, (iii) the questioning of clientelism and populism in the R&D sector, and (iv) bureaucratic coordination in the innovation system. The first three are already elaborated in Chapter 5 and Chapter 6. Here, they are briefly re-addressed by providing additional information. The last trait, bureaucratic coordination in the innovation system, is not elaborated before, and this issue is taken up in the current analysis.

As documented in detail in Chapter 5, the executive has continuously interfered with the workings of TÜBİTAK, the leading autonomous innovation governance organization in Turkey, during the 2000s. After a turbulent process that had covered the 2002–2008 period, the foundation law of TÜBİTAK was amended to increase the executive's authority and control over the organization. In fact, long before the eventual amendment, the leading cadre of TÜBİTAK had changed in 2004 via political tactics that included the stalling of Science Board members' appointments. Thereafter, many instances reflected TÜBİTAK's close stance to the executive, including the debates on Darwin's theory of evolution (Chapter 5). The change in TÜBİTAK's top-cadre had repercussions on the trajectory of R&D policy (Chapter 5).

The politically-motivated interventions have not been limited to TÜBİTAK. Among the important ones, for instance, there have been significant regulatory changes in the election procedure of TÜBA members. Being the scientific brain trust in Turkey, TÜBA provides

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science-based consultancy service to political leadership on science policies. Previously, TÜBA was electing its own members. Via a statutory decree published in the official gazette on 27 August 2011, TÜBA members were said to be elected by TÜBA, the Council of Ministers, and the General Assembly of the Council of Higher Education (YÖK). Each organization was said to elect one-third of the members. After the opposition harshly criticized the amendment, since the Academy was said to be politicized, the Council of Ministers was removed from the election cycle to be replaced with the Science Board of TÜBİTAK. Since then, TÜBA, TÜBİTAK, and YÖK are electing TÜBA members.

The re-assigning of the role from the Council of Ministers to TÜBİTAK did not satisfy the opposition. After underlining the fact that TÜBİTAK has itself been heavily politicized during the 2000s, the opposition noted that the later amendment did not mean much in practical terms. As declared by the CHP, "with a change initiated in a non-transparent and patronizing manner, [and] without discussing the issue with stakeholders, the scientific and institutional autonomy of TÜBA is being destroyed."[173] In the midst of continuous debates and struggles, almost fifty TÜBA members submitted their resignation to protest political interventions.

As elaborated in Chapter 5, the struggle between the Gülenist movement and the AKP governments had enormous repercussions on the bureaucratic structures in Turkey. During 2014-2016, for instance, approximately four thousand individuals had been taken into custody in relation to the fight against the movement, and more than eight hundred were arrested.[174] This process had affected all governmental bodies, and included innovation governance organizations as well. After the July 2016 coup attempt, operations against the movement intensified, and further lay-offs had taken place in the bureaucracy –once again including key

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[173] See the CHP's "Türkiye Bilimler Akademisi AKP Kıskacında."
[174] "FETÖ/PDY operasyonlarında gözaltı sayısı 4 bini aştı," *Anadolu Ajansı*, 1 June 2016.

innovation agencies. At least 201 personnel in TÜBİTAK, [175] and at least 47 personnel in KOSGEB,[176] were laid-off after the coup attempt.

From my perspective, the Turkish state has all the right in the world to react strongly against any movement that aims at capturing the state apparatus and overthrow a democratically elected government through illegal means and violence. In fact, any state in the world should have this kind of a right. However, this issue is complex, needs extensive elaboration, and beyond the scope of this inquiry. The point that is essential within the context of the current analysis is, the struggle against the Gülenist movement, and the extensive lay-offs that came afterwards, have forcefully signaled the high degree of politicization in the Turkish bureaucracy.

To sum up, in sharp contrast to the core characteristics of the developmental state (Section 2.2), the Turkish bureaucracy could not preserve its autonomy vis-à-vis the executive, and did not enjoy embeddedness also since the agencies' leading cadre had been subject to political interventions. On the one hand, this situation in the Turkish R&D sector represented a continuum with the past, as the bureaucracy's lack of autonomy vis-à-vis the executive has been a persistent phenomenon in Turkey (Biddle and Milor 1997; Buğra 1994; Heper 1985; Öniş and Riedel 1993). On the other hand, the interventions mimicked other instances of political interference in domains other than science, technology, and innovation, such as the independent regulatory agencies (Çetin, Sobacı, and Nargeleçekenler 2013; Özel 2012) and the economic bureaucracy (Luca 2016).

The second defining trait of the developmental state concerns the effective monitoring and steering of governmental resources (Chapter 2). The evidence suggests that only countries that have a well-functioning evidence-based policy-making mechanism can grow and develop via government intervention (Amsden 1989). As noted, "what lay behind successful post-war

[175] "TÜBİTAK'ta darbe operasyonu: 201 kişinin görevine son verildi," *Cumhuriyet*, 29 August 2016.
[176] "FETÖ soruşturması KOSGEB'e uzandı," *Hürriyet*, 2 August 2016.

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industrialization was a monitored system of controls on subsidies. Neither import substitution nor export led growth was a free for all" (Amsden 2008, 108). Put differently, resources are not allocated to the private sector in the form of a 'gift' in the ideal-typical developmental state (Chibber 2014, 39–45). In regards to this, there have been major problems in Turkey in the R&D sector during the 2000s in addition to the problems that have been related to the bureaucracy's autonomy and embeddedness.

As elaborated in detail in Chapter 5, the executive's intervention in key innovation agencies hampered the institutionalization of evidence-based policy-making efforts in Turkey. Although some bureaucrats have occasionally aimed at launching impact-evaluation mechanisms, those have not been long-lasting in the face of continuous shuffles in cadres. Furthermore, despite some positive steps undertaken (such as the establishment of a unit that is responsible from impact assessment within the MoSIT), there has not yet been a capable organization that can comprehensively assess performance in Turkey. Yet another obstacle has been a certain reflex in the bureaucracy. The interview evidence suggests that political elites and some bureaucrats still tend to perceive impact evaluations as 'punishment devices' instead of seeing them as part of a 'learning process' (Chapter 5). Thus, a traditional reflex has developed in the bureaucracy to avoid impact evaluations, with the concern that the evaluations would be used against units in the form of budget cuts.

Another crucial trait of the developmental state is that, if the state is developmental, political elites' special interests and interest groups' pressures do not cripple the state apparatus. In other words, clientelistic relations do not prevail and do not constitute the norm in a developmental state. In regards to this, the Turkish case offers some interesting results. As Chapter 6 discusses at length, the evidence suggests that clientelism *has not been the primary problem* in the R&D sector in Turkey. Although some evidence indicates that clientelism did exist in the form of recruiting new clientele and favoritism, the type of clientelistic relations

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that have been observed in the construction or the media sectors had not been present in the R&D sector. Put differently, the exclusion of the foes from the allocation processes with respect to political considerations had not been the case. Rather, the problem had been one of *neo-populism*. Thus, even though clientelism had not been the primary issue, a dubious strategy in resource allocation in the form of neo-populism undermined rational policy-making.

There have also been problems in regards to bureaucratic coordination in the R&D sector in Turkey. To begin with, different state agencies run parallel programs and they do not have a productive dialog among themselves. In some cases, the administration of similar programs by different agencies is intentional and rational, as they target different groups in society. In some other cases, however, this is not rational, since programs target the very same groups, and the underlying motivation behind their initiation is inter-organizational competition among different ministries or governmental bodies. In some extreme cases, the organizations are not even aware of the fact that they are administering similar support programs.[177] In the end of the day, the absence of bureaucratic coordination leads to the unnecessary proliferation of governmental support programs, confuses the private sector due to an influx of information, fuels inter-organizational competition, and makes the monitoring of the programs more difficult. As one interviewee noted briefly, there has been a 'support jungle' in the R&D sector during the 2000s.[178]

The questioning of bureaucratic coordination in the R&D sector becomes more paramount if one considers the fact that the relevant units of many ministries have also began to allocate R&D funds to the private sector over the last couple of years. Often, those units have lacked the required expertise to scientifically evaluate R&D applications and steer the processes accordingly. In this kind of an environment, the existence of a continuous and productive

[177] Interviewee 8.
[178] Interviewee 19.

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dialogue among governmental organizations is crucial –as the successful cases of the developmental states reveal.

On this note, however, the absence of coordination among acting organizations might carry a rather surprising, and unintended, positive effect in an environment that is akin to Turkey. In an innovation system where (i) *organizations continuously face the danger of becoming ineffective via political interference*, and (ii) *policies that are pursued depend much on individuals (head of organizations, units, etc.) rather than on an institutional stance*, concentration of resources in few organizations *might turn out to be misfortunate*. In case the organization in question (where resources are concentrated) would become dysfunctional for the mentioned reasons, then the entire system would face the risk of becoming dysfunctional. Thus, even though unnecessary proliferation of support programs clearly signals a weakness in the state capacity, it might carry an unintended positive effect via an unplanned risk diversification.[179]

To conclude, even though the Turkish governments have taken concrete steps to institutionalize and inject a developmentalist logic in the R&D sector during the 2000s, the Turkish state has yet to reflect the core characteristics of the developmental state. The bureaucracy's lack of autonomy vis-à-vis the political leadership and the corresponding absence of a Weberian bureaucracy (Chapter 5); persistent problems in regards to effective monitoring and steering of R&D support funds (Chapter 5); (iii) neo-populism in R&D fund allocation (Chapter 6); (iv) the business' and the civil society organizations' absence in policy-making (Chapter 6); and (v) problems in regards to bureaucratic coordination, have undermined the Turkish state's developmental attempts towards the creation of a well-functioning state apparatus.

[179] It is important to note that only interviewee 5 made this argument. Many other interviewees interpreted the proliferation of support programs as a sign of weakness, and did not elaborate the issue further.

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Implications on the broad literature

The investigation of the Turkish state's developmentalist turn in the R&D sector has some implications for the broad literature. On the one hand, the bureaucracy's autonomy vis-à-vis the executive *is still an important phenomenon in the 21st century*. It still affects the state's internal and external capacities in crucial ways. Although the last two decades' democratization waves have promoted a more participatory policy-making process whereby 'expended embeddedness' has become a relatively more challenging objective for the 21st century developmental state (Williams 2014a, 12–18), the state's internal structure *is still as relevant as it was in the 20th century*. In fact, given the recent instances of democratic backsliding in many countries and the corresponding global atmosphere Öniş (2016a), and the recent turn to the study of authoritarianism in political science scholarship (Gerschewski 2013, 13–14), the autonomy of bureaucratic structures seems to remain as important as 'expended embeddedness' in the 21st century.

On the other hand, the examination of Turkey once more reveal how politically-motivated interferences undermine the institutionalization of ex-ante, interim, and ex-post evaluation mechanisms in the political economy in *direct*, but more importantly in *indirect*, ways. Furthermore, the analysis also reveals how the absence of a well-functioning evidence-based policy-making mechanism in an environment where resources are allocated in a neo-populist fashion leads to a spatial-widening in allocation, and put significant doubts on the effective utilization of scarce resources.

The elaboration of the Turkish developmental state *in the context of the R&D sector* is especially indicative for developing countries that are similar to Turkey. At first glance, Brazil, Mexico, and Argentina strike the eye (table 4). To begin with, Turkey, Brazil, Mexico, and Argentina are all *large upper-middle-income* countries (World Bank classification) that belong to the G-20 group. They all have large populations and large domestic markets, and they are all

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in the same league in terms of development level. Equally importantly, when compared to other large upper-middle-income countries, Brazil, Argentina, Mexico, and Turkey stand out as the ones that have experienced *similar development trajectories*: import substitution industrialization under the auspices of sovereign states during 1930–1980 (with interruptions), then, export oriented industrialization roughly since the 1980s. These similarities among the four countries are crucial, since certain lessons that are derived from the in-depth examination of one case have important *implications* (not formal generalizations) for the others.[180]

Table 4: Turkey, Brazil, Mexico, and Argentina in comparison.

	GDP Growth (%) 2000-2015	R&D intensity (2014)	Ranking in the Global Innovation Index (2016)	GERD funded by government (%) (2006)	GERD funded by industry (%) (2009)	GERD performed by industry (%) (2006)	BERD (% of GDP) (2009)
Brazil	2,91	1,24 (2013)	69	50,37	44,7 (2007)	40,2 (2004)	0.5 (2008)
Mexico	2,35	0,54	61	49,76	39.06	48,86	0,18
Argentina	2,72	0,61	81	66,66	21.44	30,4	0,11
Turkey	4,31	1,1	42	48,63*	40.97	37,03	0,34
Korea	4,25	4,29	11	23.07	71.08	77,26	2,45
OECD Total	1,9	2,38	-	28,84	58,95	68,54	1,56

Source: World Development Indicators, OECD stats, Inter-American Development Bank, and TurkStat. *Includes other classes (OECD).

Furthermore, when the main STI indicators of Brazil, Mexico, Argentina, and Turkey are analyzed, it is seen that the countries have similar innovation systems, in the sense that the first-glance characteristics are similar. To begin with, in all countries R&D intensity is very low in comparison to the advanced world. Only in Brazil and Turkey R&D intensity is more than 1 percent, which is still low in comparison to a developed country. For instance, the level of R&D intensity was almost three times higher in Korea than in Turkey in 2014 (table 4).

[180] It is no surprise that comparative political economists usually make Latin America (Brazil, Mexico, and Argentina)–Turkey comparison on various issues based on similar background conditions.

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Second, the leading actor of the innovation system is still the state in Brazil, Mexico, Argentina, and Turkey. Correspondingly, private sector participation in the innovation system is still very low. The composition of R&D intensity clearly reveals this state-dominated structure (table 4): (i) the percentage of gross domestic expenditure on R&D (GERD) that is financed by government is quite high in the four countries in comparison to the advanced world; (ii) the percentage of GERD performed by industry is very low; and (iii) business expenditure on R&D (BERD) as a percentage of GDP is also very low.[181] These characteristics mimic the state's overall dominance in the political economies of Brazil, Mexico, Argentina, and Turkey.

In regards to performance, Brazil, Mexico, Argentina, and Turkey have all enjoyed positive rates of growth during the 2000s (table 4). In addition, despite some variations, all four countries' innovation systems have performed similarly and clustered around the middle ranks in international comparisons (table 4). In this background, all four countries have increased their government spending on R&D during the 2000s. For instance, all countries have invested in technoparks, and proliferated park numbers in the last fifteen years.[182] The resources channeled to the private sector by governmental agencies have also increased in all of them.[183] This increase in resources has been in line with the 2000s' global trend (Section 1.3.1).

Given that Brazil, Mexico, Argentina, and Turkey (i) are in the same league in terms of developmental level, (ii) have innovation systems that share similar characteristics, (iii) have state-dominated political economies where the states are known to inherent similar problems in regards to transformative power, and (iv) have visibly increased governmental R&D resources allocated to the private sector during the 2000s, the investigation of the Turkish state's

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[181] While BERD includes both publicly and privately funded R&D, GERD financed by industry reveals the industry's share in total GERD.
[182] See Rodríguez-Pose and Hardy (2014) for the Latin American countries. See Chapter 3 in this thesis for the Turkish case.
[183] See IDB (2010) for the Latin American countries. See Chapter 3 in this thesis for the Turkish case.

developmental turn in the R&D sector, and the main implications that are derived from the analysis, are especially indicative for Brazil, Argentina, and Mexico.

7.3 The scope conditions, limitations, and future research

As mentioned previously, R&D policy refers to *governmental support funds allocated to the private sector with the aim of promoting R&D* in this thesis. Therefore, the analysis *does not* cover all governmental support programs. For instance, funds that are allocated to the universities, even with the purpose of enhancing R&D, fall outside the dissertation's scope. This is a quite important point. In Turkey, universities have always been politicized and have had problematic relations with the state. Their budgets have commonly been subject to political considerations. The politicized character of the universities did not change during the AKP period. Thus, the elaboration of the universities' role in the innovation system with an emphasis on R&D fund allocation can be considered as a promising future research.

Second, the argument in regards to clientelism would benefit from further investigation, especially in regards to the management of specific governmental support programs, to see if the foes are deliberately excluded from the distribution at a more micro-level. As mentioned, many Ministries have started allocating R&D funds to the private sector in the last couple of years, and the development agencies also began to support the business, so, these programs might be first ones that can be investigated. Third, and in relation to the second, the business' role in R&D policy-making can be analyzed in a more comprehensive way, especially as part of a research that focuses on clientelism at a more micro-level. In overall, since this is the first study that focuses on the political economy of R&D policy in Turkey, more scholarly work is required to put the findings of this dissertation into test.

Last, the investigation of technological nationalism can be expanded in various dimensions. On the one hand, a historical elaboration of technological nationalism in Turkey can be conducted, where the discussion would be embedded in a broader context by bringing

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in economic nationalism to the picture. Furthermore, the 'national' content of technological nationalism can be investigated in a comprehensive way as discussed in Chapter 4. Such an analysis would not only encompass the opposition parties, but would also concentrate on the ruling parties and the societal actors at large in a more analytic and systematic manner.

7.4 Concluding remarks

While concluding his study on the developmental state, Evans (1995, 20) notes, "I hope that the argument is persuasive, but, in the end, I am as interested in provoking as I am in convincing." While this thesis has tried to base its arguments on data, evidence, and careful interpretation, one of its goals has been to promote scholarly discussions on the political economy of R&D policy. In broad terms, the 'political' dimension of the 'political economy of innovation' is relatively understudied, and it requires more scholarly attention (Chapter 1). In concrete terms, scholars of Turkish political economy have not yet studied the R&D sector, although this field is fertile in many respects. Based on these, it would be a success if the thesis manages to prompt scholarly discussions on the political economy of R&D policy – both within the Turkish context and in general.

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APPENDIX 1: Interview Methods Table

26 interviews in total.

Interviewee	Selection Criteria	Date	Source	Length (Approx.)	Recording
Interviewee 1	TÜBİTAK	December 2015	Sample frame (referred by interviewee 4)	35 min	Recorded
Interviewee 2	TÜBİTAK	October 2014 November 2015	Sample Frame	50 min 40 min	Recorded
Interviewee 3	TÜBİTAK	December 2015	Sample Frame	20 min	Note
Interviewee 4	TÜBİTAK	November 2015	Sample Frame	50 min	Recorded
Interviewee 5	TÜBİTAK	October 2014 November 2015	Sample Frame	1 h 15 min	Recorded
Interviewee 21	TÜBİTAK	February 2016	Sample Frame	1 h	Recorded
Interviewee 23	TÜBİTAK	July 2016	Sample Frame	45 min	Phone
Interviewee 6	KOSGEB	December 2015	Sample Frame	1 h 30 min	Recorded
Interviewee 7	KOSGEB	December 2015	Referred by interviewee 6	15 min	Note
Interviewee 20	KOSGEB	January 2016	Referred by interviewee 6 and interviewee 17	40 min	Recorded
Interviewee 22	KOSGEB	May 2016	Sample Frame	30 min	Note
Interviewee 8	Technopark manager	December 2015	Sample Frame	35 min	Recorded
Interviewee 9	Technopark manager	December 2015	Sample Frame	1 h 15 min	Recorded
Interviewee 10	Technopark manager	November 2014	Sample Frame	35 min	Recorded
Interviewee 16	Ministry of Industry and Trade	December 2015	Sample Frame	1 h	Recorded
Interviewee 17	Ministry of Development	January 2016	Referred by interviewee 16	1 h 5 min	Recorded
Interviewee 18	Consultant agency	November 2014	Sample Frame (referred by interviewee 6 and 20)	30 min	Note
Interviewee 19	TTGV	November 2014	Sample Frame	35 min	Recorded
Interviewee 24	Expert	Several occasions	Sample Frame		
Interviewee 25	Expert	Several occasions	Sample Frame		
Interviewee 26	Expert	Several occasions	Sample Frame		
Interviewee 11	Technopark manager	November 2014	Technology Development Zones Summit	20 min (max)	Note
Interviewee 12	Technopark manager	November 2014	Technology Development Zones Summit	20 min (max)	Note

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Interviewee 13	Technopark manager	November 2014	Technology Development Zones Summit	20 min (max)	Note
Interviewee 14	Technopark manager	November 2014	Technology Development Zones Summit	20 min (max)	Note
Interviewee 15	Technopark manager	November 2014	Technology Development Zones Summit	20 min (max)	Note

APPENDIX 2: The AKP's Electoral Victory

Source: Yüksek Seçim Kurulu.

Source: Yüksek Seçim Kurulu.

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